

## Drug use in adolescents in relation to social support and reactive and proactive aggressive behavior

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### Abstract

**Background:** Aggressive behavior in adolescents, along with drug use, has become one of the great issues in education in recent years, among other things, due to its relationship with school failure and delinquency. The purpose of this paper was to find out whether social support fulfils a basic role in decision-making on drug use and the behavior of adolescents. **Method:** 822 high school students participated in the study ( $M = 14.84$ ,  $SD = 0.87$ ). Data were collected with the Peer Conflict Scale and the Multidimensional Scale of Perceived Social Support, and an ad hoc questionnaire on drug use. **Results:** The results show that drug use is significantly related to reactive and proactive aggressive behavior. It was also observed that higher use is significantly related to perceived social support by the peer group, and less support by family. **Discussion:** It was shown that substance use is related to perceived social support by the adolescent's peer group and to aggressive behavior. It is therefore necessary to intervene in both respects to avoid the presence of substance use in schools.

**Keywords:** Social support, drugs, reactive aggression, proactive aggression.

### Resumen

**Consumo de drogas en adolescentes y su relación con el apoyo social y las conductas agresivas reactivas y proactivas. Antecedentes:** la presencia de conductas agresivas en los adolescentes, unido al consumo de drogas, se ha situado en los últimos años como una de las grandes problemáticas dentro del ámbito educativo. El objetivo de este estudio fue analizar la relación de la agresividad y el apoyo social con el consumo de alcohol y tabaco, dos de las drogas más frecuentes entre los jóvenes. **Método:** en el estudio han participado 822 adolescentes de Educación Secundaria Obligatoria ( $M = 14,84$ ;  $DT = 0,87$ ). Para recoger los datos se ha utilizado el Peer Conflict Scale, la Escala Multidimensional de Apoyo Social Percibido y un cuestionario realizado ad hoc de consumo de drogas. **Resultados:** los resultados mostraron que el consumo de drogas está relacionado con las conductas agresivas tanto reactivas como proactivas. Asimismo, se observó que a mayor consumo mayor es también el apoyo social percibido por parte del grupo de iguales, y menor apoyo por parte de la familia. **Discusión:** los resultados obtenidos se discuten en relación a la necesidad de intervenir en estas áreas para evitar la presencia de consumo de sustancias en los centros educativos.

**Palabras clave:** apoyo social, drogas, agresividad reactiva, agresividad proactiva.

Adolescent drug use is a problem of enormous social concern, particularly in public health (Luengo et al., 2008), and there are many programs for its prevention (Espada, González, Orgilés, Lloret, & Guillén-Riquelme, 2015). Another problem which has captured the attention of a large number of researchers in our country is violent and aggressive adolescent behavior (Nacimiento & Mora-Merchán, 2014; Inglés et al., 2014; Gázquez, Pérez-Fuentes, Carrión, Luque, & Molero, 2015).

Some authors (Andreu, 2009; Rainé et al., 2006) have classified aggression as reactive or proactive, depending on its motivation. More recently, others (e.g., Hubbard, McAuliffe, Morrow, & Romano, 2010) have suggested a combined reactive-proactive profile as a third classification. The purpose of reactive violence,

which is characteristic of individuals with low self-control and high impulsivity, is to harm other persons (Rainé et al., 2006). On the contrary, the purpose of proactive or instrumental violence is to resolve a conflict or control others' behavior in order to acquire some benefit from the violence, but not harm for its own sake (Andreu, 2009).

Several authors have examined the relationship of drug use and aggressive behaviors, including those considered antisocial, such as delinquent behavior (Xue, Zimmerman, & Cunnigham, 2009; Inglés et al., 2007; López & López, 2008; Bye, 2007). Peña, Andreu, and Graña (2009) noted that young people involved in aggression-victimization episodes had the highest rate of alcohol, marijuana or tobacco use, a relationship which acquires special relevance in high school students (Gázquez et al., 2015; Radliff, Wheaton, Robinson, & Morris, 2012). López-Romero, Romero, and González-Iglesias (2011) specifically found that reactive-proactive aggression was related to the use of drugs in adolescence. Other authors have analyzed the effect of alcohol on increased violent behavior due to the ability of alcohol to impair perception of communication and interaction patterns (Saldivia &

Vizcarra, 2012), judgement of reality (Muñoz-Rivas et al., 2010), the decision-making process (Abbey, Zawacky, & McAuslan, 2000), and adolescent cognitive development (Winters, 2004). On the contrary, Young, Sweeting, and West (2008) suggested that antisocial behaviors are predictors of high use of alcohol, which seems to be in line with authors who have pointed to an initial antisocial behavior pattern (Renda, Vassallo, & Edwards, 2011) leading to later abuse of addictive substances in adulthood (Kim, Catalano, Haggerty, & Abbott, 2011).

Some authors have found a specific relationship between bullying and drug use (Becoña et al., 2011; Farrington & Tfofi, 2011; Pérez-Fuentes et al., 2015; Renda et al., 2011). Cerezo and Méndez (2013) found moderate correlations between aggressors and drug and polydrug use. That is, as shown by Radliff et al. (2012), aggressors use more addictive substances than other profiles. Cid-Monckton and Pedrao (2011) also found recently that of problematic adolescents in the family context, 41% chose to approach friends in search of support, and 15% approached other individuals with a similar problem. Ciariano, Bo, Jackson and van Mameren (2002) found that use of alcohol was positively related to support from a partner and the peer group, whereas McGee, Williams, Poulton, and Moffitt (2000) found that a weak family relationship with little expression of help was, among others, a predictive variable for use of alcohol and tobacco, pointing out that parental support was a protective factor against substance use (Jiménez, Musitu, & Murgui, 2006) and support from the family against violent behavior (Cerezo, Sánchez, Ruiz, & Areñse, 2015). Barra (2004) showed that social support is a general factor contributing to greater stability, as it favors more positive perception of the setting, as well as better use of personal and social resources, and higher adolescent emotional intelligence (Azpiazu, Esnaola, & Sarasa, 2015).

On the basis of the studies reviewed, it was hypothesized that there is a positive relationship between drug use (alcohol or tobacco) and violent behavior. The relationship between drug use and violent behavior would vary depending on the type of aggression being dealt with, and there is a positive relationship between support from family, peer group and partner or significant other and use of alcohol and tobacco, that is, the more support it receives, the more it is used.

Thus the general purpose of this study is to analyze the influence of two variables, aggressiveness and social support, on use of alcohol and tobacco, two of the most frequent drugs among young people. Various studies have related drug use and antisocial behavior as an effective predictor of aggressive behavior in adolescence (Bender & Lösel, 2011; Cerezo & Méndez, 2012). The specific goals pursued were to analyze the relationship between drug use and violent behavior and whether this relationship would vary with the type of aggression, and finally, to analyze the relationship between social support and use of alcohol and tobacco.

## Method

### Participants

Random cluster sampling by different zones in the city of Almería included at least two schools in each of four zones the city was divided into. Eight high schools were selected at random, all of them public and each of them having at least one 3<sup>rd</sup> year

and one 4<sup>th</sup> year classroom. The total sample was made up of 976 students, of whom 154 (15.78%) were disqualified because they did not complete the questionnaires in time or due to errors or omissions. Thus the final sample consisted of 822 students in 3<sup>rd</sup> and 4<sup>th</sup> year high school (*Educación Secundaria Obligatoria* or ESO) from 14 to 18 years old with a mean age of 14.84 years ( $SD=.87$ ). Of these, 51.8% ( $N=426$ ) were males and 48.2% ( $N=96$ ) were females, with mean ages of 14.85 years ( $SD=.87$ ) and 14.82 years ( $SD=.86$ ), respectively. Sample distribution by school year was 43.7% in 3<sup>rd</sup> year ESO ( $N=359$ ) and the remaining 56.3% in 4<sup>th</sup> year ESO ( $N=463$ ). The Chi-Square test for homogeneity of frequency distribution showed no statistically significant differences in gender or year among the four groups ( $\chi^2_{(1,822)}=.31; p=.58$ ).

### Instruments

*Peer Conflict Scale (PCS)* (Marsee et al., 2011). This scale evaluates both physical and relational reactive and proactive aggression. It consists of 40 four-point Likert-type items. The Spanish adaptation by Pérez-Fuentes et al. (2016) was used. Reliability in this study for the different subscales measured by the Cronbach's alpha was .86 for the physical reactive aggression factor, for physical proactive aggression it was .85, for relational reactive aggression .80, and for relational proactive aggression it was .83.

*Multidimensional Scale of Perceived Social Support* (Zimet, Dahlem, Zimet, & Farley, 1988). The Spanish adaptation by Landeta and Calvete (2002) was used. This scale evaluates social support perceived based on 12 items with four Likert-type answer choices (1= almost never to 4 always or almost always). Perception of general support is evaluated based on three factors: peer social support, family support and support of partner or significant other, with a total Cronbach's alpha of .89, .89, .87 and .83, respectively.

*Ad hoc questionnaire* on alcohol and tobacco use with the following questions referring to the past year: How often do you drink alcoholic beverages (beer/hard liquor)? How often do you smoke? The answers were on seven and nine-choice Likert-type scales, respectively.

### Procedure

First the directors and counselors at the various schools selected were contacted and a meeting was held with them at which they were explained the study goals and instruments. When the schools had been informed, the study was explained to the parents at a meeting where the researchers responsible were present, and their consent for participation by their children was acquired. Finally, a schedule for giving the questionnaires was set up. The questionnaires were voluntary and anonymous and given collectively in the students' own classroom or some other place in their school. It took 50-60 minutes to fill them out.

### Data analysis

A descriptive cross-sectional study was done using SPSS 20 software for the statistical analysis. As the Kolmogorov-Smirnov test for the various mean score analyses showed that in all cases the hypothesis of normality could be accepted ( $p<.05$ ), and the Levene test ( $p<.05$ ) showed that the sample met the assumption of homoscedasticity, the  $t$  test for independent samples was done

for the uses-does not use alcohol and uses-does not use tobacco variables. The effect size of any differences observed was calculated as the mean standard difference or *d* (Cohen, 1988). The Pearson's correlation was used to analyze the relationship between the two variables, taking use as a quantifiable variable. And finally, stepwise multiple regression analysis was also used to find out the influence of the type of aggression and social support on use of alcohol and tobacco.

**Results**

*Substance use and aggressive behavior*

All the types of aggression analyzed showed a positive correlation with tobacco use: Physical Proactive Aggression ( $r = .12; p < .01; d = .24$ ), Relational Proactive Aggression ( $r = .09; p < .01; d = .18$ ), Physical Reactive Aggression ( $r = .29; p < .01; d = .61$ ), and Relational Reactive Aggression ( $r = .09; p < .01; d = .18$ ). Furthermore, use of alcohol also showed positive correlations with Physical Proactive Aggression ( $r = .25; p < .01; d = .52$ ), Relational Proactive Aggression ( $r = .21; p < .01; d = .43$ ), Physical Reactive Aggression ( $r = .32; p < .01; d = .68$ ) and Relational Reactive Aggression ( $r = .20; p < .01; d = .41$ ).

As shown in Table 1, alcohol users had significantly higher scores on Physical Proactive Aggression ( $t_{802} = -3.01; p < .01; d = .23$ ), Physical Reactive Aggression ( $t_{790} = -7.00; p < .01; d = .55$ ), and

Relational Reactive Aggression ( $t_{800} = -1.99; p < .05; d = .15$ ). Use of tobacco showed significant differences for all types of aggression analyzed: Physical Proactive Aggression ( $t_{802} = -6.19; p < .01; d = .47$ ), Relational Proactive Aggression ( $t_{795} = -4.85; p < .01; d = .37$ ), Physical Reactive Aggression ( $t_{790} = -7.05; p < .01; d = .53$ ) and Relational Reactive Aggression ( $t_{800} = -4.26; p < .01; d = .32$ ), where tobacco users scored significantly higher means than nonusers.

*Substance use and social support*

The data found show a positive relationship between tobacco and support perceived from the peer group ( $r = .08; p < .05; d = .16$ ), as well as from a partner or significant other ( $r = .10; p < .01; d = .20$ ). Perceived support from family shows a negative correlation with use of tobacco ( $r = -.15; p < .01; d = .30$ ), so the more tobacco is used, less support from family members is perceived. Alcohol use also correlated positively with perceived peer group support ( $r = .08; p < .05; d = .16$ ) and support from a partner or significant other ( $r = .10; p < .01; d = .20$ ), and negative correlation with perceived family support ( $r = -.15; p < .01; d = .30$ ). So the more alcohol is used the more perceived social support from the peer group and from the partner and less from the family. Statistically significant differences between users and nonusers were also detected in the mean score on perceived social support, whether from the partner or significant other ( $t_{815} = -2.85; p < .01; d = .21$ ), and users also scored significantly higher on perceived support from peers

*Table 1*  
Aggressive behavior and use of alcohol and tobacco. Descriptive analysis and *t* test

Alcohol use	Nonusers			Users			t	P
	N	Mean	SD	N	Mean	SD		
Physical Proactive Aggression	565	2.10	3.57	238	3.10	4.54	-3.01**	.00
Relational Proactive Aggression	560	2.29	3.36	236	2.82	4.17	-1.72	.09
Physical Reactive Aggression	557	4.42	4.95	234	7.54	5.99	-7.00**	.00
Relational Reactive Aggression	564	3.56	4.00	237	4.20	4.50	-1.99*	.05
<b>Tobacco use</b>								
Physical Proactive Aggression	264	1.37	2.66	539	2.90	4.30	-6.19**	.00
Relational Proactive Aggression	264	1.68	2.61	532	2.83	3.98	-4.85**	.00
Physical Reactive Aggression	266	3.60	4.56	525	6.23	5.67	-7.05**	.00
Relational Reactive Aggression	268	2.94	3.46	533	4.16	4.42	-4.26**	.00

\*  $p < .05$ ; \*\*  $p < .01$

*Table 2*  
Perceived social support and use of alcohol and tobacco. Descriptive analysis and *t* test

Alcohol use	Nonusers			Users			t	p
	N	Mean	SD	N	Mean	SD		
Peer group support	573	24.02	4.65	243	24.69	4.19	-1.93*	.05
Family Support	573	23.95	4.97	241	22.17	5.59	4.29**	.00
Support from partner or significant other	575	24.42	4.68	241	25.35	4.01	-2.85**	.00
<b>Tobacco use</b>								
Peer group support	271	23.82	4.52	545	24.43	4.52	-1.80	.07
Family Support	269	24.57	4.45	545	22.85	5.48	4.78**	.00
Support from partner or significant other	270	24.33	4.74	546	24.88	4.38	-1.62	.11

\*  $p < .05$ ; \*\*  $p < .01$

( $t_{815} = -1.93$ ;  $p < .05$   $d = .15$ ). Finally, non-tobacco users show a significantly higher mean ( $t_{813} = 4.78$ ;  $p < .01$ ;  $d = .36$ ) in perceived family support.

The results derived from stepwise multiple regression analysis show that 14% of tobacco use is explained by Physical Reactive Aggression ( $R^2 = .09$ ), support by family ( $R^2 = .02$ ), support of the partner and significant others ( $R^2 = .03$ ) and Physical Proactive Aggression ( $R^2 = .01$ ). 14.7% of alcohol use is explained by the presence of Physical Reactive Aggression ( $R^2 = .09$ ), peer support ( $R^2 = .09$ ), and family support ( $R^2 = .09$ ).

## Discussion

The main purpose of this study was to analyze the influence of adolescent aggressiveness and social support on use of alcohol and tobacco. The statistical analyses performed enable us to affirm that, in line with other previous studies (McGee et al., 2000; Ciariano et al., 2002; Young et al., 2008; Renda et al., 2011; Kim et al., 2011), aggressiveness and social support are related to adolescent alcohol and tobacco use.

The data found in this study showed a positive correlation between tobacco use and Physical Proactive Aggression, Relational Proactive Aggression, Physical Reactive Aggression, and Relational Reactive Aggression, which supports the first hypothesis posed. Similarly, the hypothesis for alcohol use was also confirmed by positive correlations, although not statistically high, with Physical Proactive Aggression, Relational Proactive Aggression, Physical Reactive Aggression and Relational Reactive Aggression, and thus contributes to the study of this relationship. As in other studies (Bender & Lösel, 2011; Cerezo & Méndez, 2012), all the types of aggression were shown to be related to the use of alcohol and tobacco, and it should be the goal of future

research to find out whether their use predicts aggression (López-Romero et al., 2011), or whether, on the contrary, as other authors have suggested, it is the presence of aggressive behaviors which is an effective predictor of drug use in adolescents (Young et al., 2008; Renda et al., 2011; Kim et al., 2011). This is in turn, one of the limitations of this study, because we cannot show the direction of the relationship.

With respect to the second hypothesis, it may be observed that users of alcohol and tobacco scored significantly higher in Physical Proactive Aggression, in Physical Reactive Aggression and in Relational Reactive Aggression, and the relationship is the same for all types of aggression.

In line with other studies (Ciariano et al., 2002), the analysis of social support confirmed the hypothesis originally posed, in which the more alcohol is used, the more social support is perceived, both from the peer group and the partner. Intervention programs should also consider that the more tobacco is used the less family support there is. Nevertheless, the data in this study and others (McGee et al., 2000) recommend more profound study of this relationship to alcohol use, since there are also studies showing a relationship with family support.

In conclusion, it should be mentioned that programs for reducing use of tobacco among adolescents should work on both proactive and reactive Physical Aggression, family support and support from the partner and significant others. Intervention or alcohol use prevention programs should include work on Physical Reactive Aggression, peer support and family support.

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