

Evolution of alcohol and tobacco consumption in young people in Spain, after the law 42/2010 against smoking: 2011-2014

Evolución del consumo de alcohol y tabaco en jóvenes en España, posterior a la ley 42/2010 frente al tabaquismo: 2011-2014

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Abstract

The objective of the study was to evaluate alcohol and tobacco consumption in young people in Spain, after Law 42/2010, during the interval of 2011-2014. The sample consisted of 3270 young people aged between 15 and 24 years who completed the National Survey of Health in Spain (ENSE) of 2011 and the European Survey of Health in Spain (EESA) of 2014. Variables: consumption, type of tobacco, attempts to quit smoking, consumption and type of alcoholic beverage, binge drinking, and sociodemographic variables. Logistic regression analysis was performed with the sociodemographic variables. The results indicated a decrease in tobacco and alcohol consumption from 2011 to 2014, and increased attempts to quit smoking. Beer is the most popular drink, most consumption is carried out between 1 and 2 days per week, and half of the young people who drink alcohol have taken part in binge drinking in the last 12 months. There are significant differences in tobacco and alcohol consumption. Between 2011 and 2014, the number of occasional and daily smokers, and alcohol consumption decreased, coinciding with the entry into force of Law 42/2010. Binge drinking is the most common pattern among young people. The factors that relate to greater consumption of tobacco are: being male, being married, and not having university studies. On another hand, the variables related to alcohol consumption are: being male, having Spanish nationality and university studies.

Key Words: Alcohol consumption; Tobacco consumption; Law 42/2010; Binge drinking; Health surveys.

Resumen

El objetivo del estudio fue evaluar el consumo de alcohol y tabaco en jóvenes en España, posterior a la ley 42/2010, periodo 2011-2014. La muestra estaba formada por 3270 jóvenes entre 15 y 24 años de la Encuesta Nacional de Salud en España (ENSE) de 2011 y la Encuesta Europea de Salud en España (EESA) de 2014. Variables: consumo, tipo de tabaco, intentos de dejar de fumar, consumo y tipo de bebida alcohólica, consumo intensivo de alcohol en una misma ocasión y variables sociodemográficas. Se realizó análisis de regresión logística con las variables sociodemográficas. Los resultados indicaron una disminución del consumo de tabaco y alcohol desde 2011 a 2014, aumentado los intentos de dejar de fumar. El tipo de bebida que más está aumentando es la cerveza, el consumo mayoritario es entre 1 y 2 días/semana y la mitad de jóvenes que consumen alcohol han tenido un consumo intensivo en una misma ocasión en los últimos 12 meses. Existen diferencias significativas en el consumo de tabaco y alcohol. Entre 2011 y 2014 ha descendido el número de fumadores ocasionales, a diario y consumo de alcohol, coincidiendo con la entrada en vigor de la ley 42/2010. El consumo intensivo de alcohol, binge drinking, es el patrón que más se está dando entre jóvenes. Los factores que se relacionan con mayor consumo de tabaco son: ser hombre, estar casado y no tener estudios universitarios. Por otro lado, las variables relacionadas con consumo de alcohol son: sexo masculino, nacionalidad española y estudios universitarios.

Palabras clave: Consumo de alcohol; Consumo de tabaco; Ley 42/2010; Consumo intensivo; Encuestas epidemiológicas.

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Drugs are psychoactive substances that affect perception, mood, consciousness, and behavior (Patiño, 2008). In 2015, the most frequently consumed drugs in Spain in the past 12 months were alcohol (77.6%) and tobacco (40.2%) (Spanish Observatory for Drugs and Drug Addiction, 2016). Alcohol consumption is increasing in the population, but the age of onset of consumption is decreasing (Medina-Mora, 2015).

The age group between 15 and 34 years has the highest prevalence of alcohol and tobacco consumption, whereas the population between 15-24 years shows a higher risk consumption, especially of alcohol, estimated at 11.8%. Risk consumption is regular consumption of 20 to 40 grams of alcohol per day for women and of 40 to 60 grams for men. It is a pattern of alcohol consumption that increases the risk of harmful health consequences (Anderson, Gual & Colon, 2011). The most popular type of consumption in the group of 15-24-year-old in Spain is called “botellón” [“big bottle”], carried out by 52.2% of youth within this age range. The “botellón” is an “outdoor meeting of youth, noisy and usually nocturnal, in which alcoholic beverages are consumed in abundance” (Real Academia Española, 2001). The “botellón” is usually carried out in public spaces (squares or parks) where young people chat and listen to music (Gómez-Fraguela, Pérez & Triñanes, 2008). The occasional consumption of alcohol in large quantities and for a short period of time, the so-called “*binge drinking*,” occurs in the age group between 15 and 29 years (National Plan on Drugs, 2015).

The consumption of alcohol and other drugs are the most worrisome behaviors in young people worldwide (López, Santín, Torrico & Rodríguez, 2014; Luengo, Otero-López, Romero & Gómez, 1996). Youth is the stage of highest risk for the onset of consumption of these substances, with the average age in Spain being between 13 and 16 years. During the youth stage, polydrug use is relevant, especially that of alcohol and tobacco, and their consumption is the most common at this stage, especially between ages of 15 and 24, in individuals who have participated in the “botellón” in the past year. In Spain, out of every 10 people between ages 15-24 who participated last year in a “botellón,” 6 were polydrug users. Polydrug use is related to the consumption of alcohol, as in 90% of the cases, alcohol is present (EMCDDA, 2016; Royo-Isach, Vidal & Zapata, 2015). Polydrug use of low-proof alcohol and tobacco are the main risk factors for high-proof alcohol consumption (Hernández-Serrano, Font-Mayola & Gras, 2015). In relation to polydrug use of alcohol and tobacco, there is an interaction between the two drugs. Smoking is a risk factor for alcoholism, and alcohol consumption acts as a risk factor for becoming a smoker (Lajtha & Sershen, 2010; Higgins et al., 2014) because the consumption of alcohol increases the speed at which the body breaks down

nicotine, which therefore remains in the body for less time. This can lead to increasing the number of cigarettes consumed. This means that when someone wants to quit smoking, the consumption of alcohol will make it more difficult (Gubner et al., 2016).

Young people’s consumption is influenced by various youth characteristics, such as personal identity, desire to experience new sensations, and the importance of feeling that one belongs to the group (López et al., 2014; Luengo et al., 1996). It is also determined by factors like not being liked by others, feeling more secure and self-confident, and being more sociable. Young people’s decision to consume is conditioned by their previous experiences when taking risks that may have arisen during their lifetime (González-Iglesias, Gómez-Fraguela, Gras & Planes, 2014).

Young people have a pattern of recreational use that can influence the perception of risk (Royo-Isach et al., 2015). Young people’s alcohol consumption may cause changes in their behavior, memory, and learning ability (Sánchez, Redondo, García & Velázquez, 2012). Also, adolescent alcohol use is associated with suicidal ideas (Bousoño Serrano et al., 2017). Smoking alters the sense of taste and smell, reduces the feeling of hunger and, like alcoholic beverages, it is associated with various diseases (Ruiz-Risueño, Ruiz-Juan & Zamarripa, 2012).

Based on the above, alcohol and tobacco are the drugs consumed most frequently by youth, and this age group has the highest prevalence and risk consumption, because they mostly use these drugs recreationally, and this can be influenced by the characteristic behaviors of this age. Polydrug use of these two drugs is highlighted as a habitual pattern, and the most popular type of alcohol consumption in recent years, which also presents the most problems, is the intensive consumption of alcohol, the so called binge drinking.

Hence, given the relationship between the consumption of both drugs (alcohol and tobacco), on the one hand, and the new Spanish Law 42/2010 of health measures against smoking and regulating the sale, supply, consumption and advertising of tobacco products (Official State Bulletin, 2010), and international studies that confirm the relationship between policies against smoking and the reduction in the consumption of alcohol (Kasza, Mckee, Rivard & Hyland, 2012; Lee, 2007; Lee, Chen, Hwang & Yeh, 2010; Young-Wolff et al., 2013) on the other, a study was proposed to evaluate the consumption of alcohol and tobacco in Spanish youth, subsequent to above law governing tobacco consumption in the 2011-2014 interval.

Method

Design and participants

The study is descriptive and cross-sectional. The object of study were the records of the individuals aged between

15 and 24 years, who participated in the National Health Survey of Spain (ENSE) of 2011 (Ministry of Health, Social Services, and Equality, 2013) and in the European Health Survey in Spain (EESA) of 2014 (Ministry of Health, Social Services, and Equality, 2015). We used the latest published institutional records of both surveys, totaling 3,270 records; 1,656 from 2011 and 1,614 from 2014.

The study instruments

As indicated above, we used representative data records of Spanish youth aged between 15 and 24 years from the 2011 ENSE (Ministry of Health, Social Services, and Equality, 2013) and the 2014 EESA (Ministry of Health, Social Services, and Equality, 2015). Sections V and W of these surveys were used as the instrument. Section V corresponds to the “consumption of tobacco” and contained 3 questions (Can you tell me whether you smoke?; What kind of tobacco do you smoke more frequently?; and During the past 12 months, how many serious attempts to quit did you carry out in which you went at least 24 hours without smoking?). Section W corresponds to the “consumption of alcohol” and consists of 2 questions [During the past 12 months, how often have you taken alcoholic beverages of any kind (i.e., beer, wine, liquor, distilled drinks and cocktails, or other alcoholic beverages)? and During the past 12 months, how often have you consumed 5 or more standard drinks on the same occasion? [“Occasion”, according to the ENSE and the EESA, is considered consuming the drinks in an interval of about 4 to 6 hours]].

The ENSE and the EESA are cross-sectional surveys conducted by the National Institute of Statistics (INE), in collaboration with the Ministry of Health, Social Services, and Equality (MSSSI) of Spain. They are performed representatively (each participant is assigned a weighting coefficient to ensure representativity) with the non-institutionalized population of Spain. The type of sampling is stratified, three-stage, by census sections, family homes, and people. The records are available for any researcher on the INE website of anonymized microdata, in a free access file.

Variables

The sociodemographic variables were: age, sex, level of education, marital status, nationality.

The dependent variables were: current tobacco use, type of tobacco most frequently smoked, attempts to quit smoking in the past 12 months, frequency of consumption of alcohol in the past 12 months, type of beer consumed, frequency of consumption of 5 or more alcoholic beverages on the same occasion during the last 12 months.

Statistical analysis

The statistical analysis of the data was performed with the IBM SPSS Statistics program version 22 (IBM Corp, Armonk, NY, USA), licensed from the University of Castilla

la Mancha (UCLM). Statistical analysis consisted of a descriptive analysis through the calculation of counts (*n*) and proportions (%) for the qualitative variables and the calculation of the mean (*M*) and standard deviation (*SD*) for the quantitative variables. The proportions of the categorical variables were also compared, using chi-square tests for the contingency tables. In addition, a logistic regression (LR) was performed to identify the variables associated with the consumption of alcohol and tobacco. All the hypotheses were contrasted bilaterally, and in all statistical tests, values with a 95% confidence level ($p < .05$) were considered significant.

Results

The sample was made up of 3,270 records of youth aged between 15 and 24 years in Spain. Of them, 49.6% were males and 50.4% were females. Mean age was 19.67 years ($SD = 2.902$). In relation to marital status, 96.4% were single (Table 1).

Table 1. Sociodemographic characteristics of the population of youths in Spain (15-24 years) analyzed by years (2011-2014) ($n = 3270$).

	2011 n (%)	2014 n (%)	p
Sex			
Male	842 (50.8%)	780 (48.3%)	0.150
Female	814 (49.2%)	834 (51.7%)	
Country of birth			
Spain	1489 (89.9%)	1465 (90.8%)	0.6409
Foreign	167 (10.1%)	149 (9.2%)	
Marital status			
Single	1601 (96.7%)	1550 (96%)	0.535
Married	51 (3.1%)	55 (3.4%)	
Widowed	0 (0%)	2 (0.1%)	
Legally separated	2 (0.1%)	2 (0.1%)	
Divorced	2 (0.1%)	4 (0.2%)	
Doesn't know	0 (0%)	1 (0.1%)	

Note. N: count; p: significance of chi-square test.

Tobacco use

Concerning smoking, 25.4% of the youth in the study smoked, and 21.5% smoked daily. In relation to gender, 27.8% of the males and 23.2% of the females were smokers (Table 1). Cigarettes, including rolling tobacco (type of tobacco smoked most frequently), were the most frequently consumed (99.1%). Of the daily smokers, 30.1% had attempted to quit smoking, and of them, 20.2% had attempted to quit once and 7.2% had carried out two attempts (Table 2).

Table 2. Tobacco use in the youth population in Spain (15-24 years) analyzed by years (2011-2014) (n = 3270).

	2011 n (%)	2014 n (%)	p
Do you currently smoke?			
Yes, daily	393 (23.7%)	311 (19.3%)	
Yes, but not on a daily basis	76 (4.6%)	53 (3.3%)	
Doesn't smoke now, but has smoked before	66 (4%)	106 (6.6%)	<0.001
Non-smoker or has never smoked on a regular basis	1.119 (67.6%)	1.144 (70.9%)	
Most frequent type of tobacco smoked			
Cigarettes (including tobacco rolling)	392 (99.7%)	358 (98.4%)	
Cigars	0 (0%)	1 (0.3%)	0.059
Other	0 (0%)	5 (1.4%)	
No reply	1 (0.3%)	0 (0%)	
Daily smokers: attempts to quit smoking in the last 12 months			
0 attempts	266 (67.7%)	205 (65.9%)	
1 attempts	80 (20.4%)	62 (19.9%)	
2 attempts	24 (6.1%)	27 (8.7%)	
3 attempts	7 (1.8%)	6 (1.9%)	0.666
4 attempts	2 (0.5%)	2 (0.6%)	
5 attempts or more	8 (2%)	8 (2.6%)	
Does not know/Does not respond	6 (1.6%)	1 (0.3%)	

Note. N: count; p: significance of chi-square test

Temporal trend of tobacco use between 2011 and 2014

In 2011, 28.2% of the youth smoked, and in 2014, this percentage decreased to 22.6% ($p < .001$) (Figure 1). The same result was observed in daily smokers, who decreased from 23.7% in 2011 to 19.3% in 2014 ($p < .001$). In 2011, 32.3% of the youths had tried to quit smoking: 20.4% made one attempt, and 6.1% tried to quit twice. In 2014, the percentage of attempts to quit increased to 34.1% compared with 2011, with 19.9% making one attempt to quit, and 8.7% two attempts ($p = .666$). These results can be observed in Figure 2.

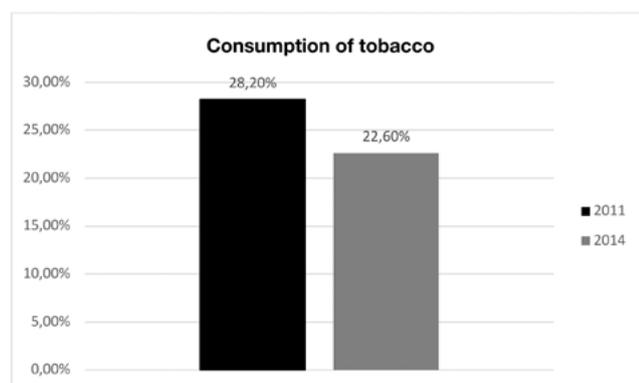


Figure 1. Consumption of tobacco and its evolution over time.

Alcohol consumption

In the past 12 months, 78.6% of the total of the youths of the study drank alcohol, as shown by year of study in Table 3. Regarding gender, 66.49% of the males and 63.1% of the females consumed alcohol. Concerning frequency, 26.9% drank between 1-2 days per week, 22.1% drank once a month, and 18.1% drank between 2 and 3 days a month.

Regarding the beverage, 68.4% of the youths drank beer with alcohol; 15.1% drank wine or sparkling white wine ("cava"); 0.9% consumed Vermouth, "fino" or Sherry; 4.7% drank liqueurs, anise, and "pacharán" (a type of brandy); 66.9% drank cocktails, and 3.4% consumed local drinks, cider, or coffee with brandy.

Table 3. Alcohol consumption of young people in Spain (15-24 years) analyzed by years (2011-2014) (n=3270).

	2011 n (%)	2014 n (%)	P
Frequency of alcohol consumption in the past 12 months			
Daily or almost daily	14 (1.3%)	8 (0.5%)	
5-6 days per week	37 (3.3%)	6 (0.4%)	
3-4 days per week	0 (0%)	30 (1.9%)	
1-2 days per week	425 (38.1%)	310 (19.2%)	
2-3 days per month	225 (20.2%)	269 (16.7%)	<0.001
Once a month	415 (37.2%)	187 (11.6%)	
Less than once a month	0 (0%)	219 (13.6%)	
No, has not drunk alcohol	0 (0%)	80 (5%)	
Never or only a few sips in his/her lifetime	0 (0%)	505 (31.3%)	
Beer consumption			
Yes	444 (63.3%)	278 (78.5%)	
No	232 (33.1%)	76 (21.5%)	<0.001
Does not know/Does not respond	25 (3.6%)	0 (0%)	
Consumption of wine, cava			
Yes	102 (14.6%)	57 (16.1%)	
No	573 (81.7%)	269 (83.6%)	0.007
Does not know/Does not respond	26 (3.7%)	1 (0.3%)	
Consumption of distilled beverages, cocktails			
Si	488 (69.6%)	218 (61.6%)	
No	191 (27.2%)	136 (38.4%)	<0.001
Does not know/Does not respond	22 (3.1%)	0 (0%)	
Frequency of consumption of 5 or more standard drinks on the same occasion in the past 12 months			
3 to 4 days per week	0 (0%)	1 (0.1%)	
1 to 2 days per week	70 (44%)	62 (6%)	
2 to 3 days in a month	0 (0%)	64 (6.2%)	
Once a month	0 (0%)	116 (11.3%)	
Less than once a month	0 (0%)	282 (27.4%)	<0,001
Not in the last 12 months	0 (0%)	210 (20.4%)	
Never in my lifetime	86 (54.1%)	289 (28.1%)	
Does not know/Does not respond	3 (1.9%)	5 (0.5%)	

Note. N: count; p: significance of chi-square test

Regarding the use of 5 or more standard drinks on the same occasion during the past 12 months (Table 3), 31.6% claimed they had never done this, 17.7% had not done so in the past 12 months, 23.7% had done so less than once a month, 9.8% once a month, 5.4% had done so 2-3 days in one month, and 11.1% had done so 1-2 days per week.

Prevalence of alcohol consumption between 2011 and 2014

To compare the consumption of alcohol by years, we recoded the variables of alcohol consumption as dichotomous (no/yes). With regard to the prevalence of alcohol consumption over time (Figure 2), the percentage decreased from 67.4% to 63.75% from 2011 to 2014 ($p < .001$). The percentage of daily intake also decreased, going from 5 to 6 days per week, between 1-2 days per week, to once a month. The consumption of beer with alcohol increased from 63.3% to 78.5% in 2014 ($p < .001$). The consumption of "cava" or wine also increased. With regard to drinking cocktails, in 2011, the percentage was 69.6% and in 2014, it was 61.6% ($p < .001$). In 2011, the consumption of local drinks, cider, or coffee with brandy was 3%, and in 2014, it was 4.2%. The prevalence of the beverages can be seen in Table 3.

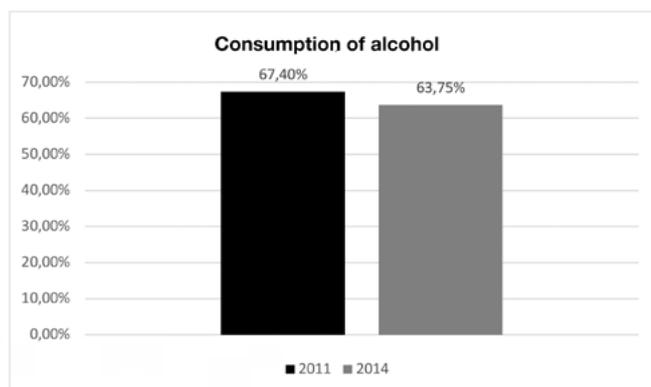


Figure 2. Consumption of alcohol and its evolution over time.

Factors associated with the consumption of tobacco and alcohol

Considering the variables that influence tobacco use, in the logistic regression (Table 4), we observed that males are more likely to consume tobacco than females (OR=1.426, 95% CI [1.125, 1.808]). In relation to marital status, married people are more likely to quit smoking than single people (OR=1.965, 95% CI [1.103, 3.500]). Regarding the level of studies, youths without studies (OR=3.750, 95% CI [1.156, 12.167]), with primary studies ([OR=3.488, 95% CI [1.660, 7.331]), secondary school (OR=2.910, 95% CI [1.428, 5.928]), and high school or vocational training (FP) (OR=3.291, 95% CI [1.612, 6.715]) are more likely to quit smoking than university students.

Regarding the variables that influence alcohol consumption in the past 12 months (Table 5), we observed

Table 4. Factors associated with smoking in the youth population in Spain (15-24 years) ($n = 3270$).

	OR (IC del 95%)	P
Sex		
Female	Reference	
Male	1.426 (1.125-1.808)	0.003
Marital status		
Single	Reference	
Married	1.965 (1.103-3.500)	0.022
Widowed, separated or divorced	0.476 (0.058-3.910)	0.490
Educational level		
University studies	Reference	
High school or FP	3.291 (1.612-6.715)	0.001
Secondary	2.910 (1.428-5.928)	0.003
Primary	3.488 (1.660-7.331)	0.001
No studies	3.750 (1.156-12.167)	0.028

Note. 95% CI: 95% confidence interval; p: significance of the model; OR: odds ratio; FP: vocational training.

Table 5. Factors associated with alcohol consumption in the youth population in Spain (15-24 years) ($n = 3270$).

	OR (IC del 95%)	P
Sex		
Female	Reference	
Male	1.377 (1.109-1.710)	0.004
Spanish nationality		
No	Reference	
Yes	1.748 (1.224-2.498)	0.002
Studies		
No studies	Reference	
Primary	2.005 (0.751-5.350)	0.165
Secondary	3.446 (1.316-9.022)	0.012
High school or FP	10.472 (3.961-27.682)	0.000
University studies	14.281 (4.827-42.252)	0.000

Note. 95% CI: 95% confidence interval; p: significance of the model; OR: odds ratio; FP: vocational training.

that males are more likely to consume alcohol than females ([OR=1.377, 95% CI [1.109, 1.710]), and that young Spaniards are more likely to drink alcohol than youths of other nationalities (OR=1.748, 95% CI [1.224, 2.498]). In relation to the level of studies, youths with studies are more likely to consume alcohol than those who have no studies: university students are more likely to consume alcohol than youths with no studies (OR=14.281, 95% CI [4.827, 42.252]), followed by youths with high school studies or vocational training (FP) (OR=10.472, 95% CI [3.961, 27.682]).

Discussion

In this study, it can be seen that, in recent years, the percentage of occasional smokers and daily smokers has decreased among Spanish youth, as noted in other studies (Hair et al., 2017; Islami, Stoklosa, Drope & Jemal, 2015; Lidon-Moyano et al., 2017; Peiper, Ridenour, Hochwalt & Coyne-Beasley, 2016; National Plan on Drugs, 2016). The proportion of young people who tried to quit smoking also increased. The decrease in the number of smokers may be largely due to Law 42/2010 (Official State Bulletin, 2010) of health measures against smoking and to regulate of the sale, supply, consumption and advertising of tobacco products, which entered into force on January 2, 2011 in Spain, the year that coincides with the first sample collected in the present study. This law extends the ban on smoking in any kind of collective space to areas open to the public that are not in the open air, and to outdoor spaces of schools, health centers, and areas of children's parks and playgrounds. The intention of this law was to combat smoking and to promote citizens' protection, both of smokers and passive smokers, especially the younger ones (Official State Bulletin, 2010; Rana, Pérez-Ríos, Santiago-Pérez & Crujeiras, 2016). As in other countries where tobacco control policies are implemented, the consumption of tobacco has decreased (Callinan, Clarke, Doherty & Kelleher, 2010; Hair et al., 2017; Islami et al., 2015), and, as noted in a study in the United States (Krauss, Cavazos-Rehg, Plunk, Bierut & Gruza, 2014) and also in this study, the anti-smoking laws also seem to affect the consumption of alcohol and also its intensive use, decreasing it. In relation to gender, as the other studies state, males smoke more than females (Higgins et al., 2015; Lakew & Haile, 2015; Martínez, Méndez, Sánchez & Martínez-Sánchez, 2016; Molina et al., 2012; World Health Organization, 2008; Wicki, Kuntsche & Gmel, 2010). However, according to other studies, with the passage of time, the difference in consumption between the two sexes is decreasing (Medina-Mora, 2015; World Health Organization, 2008).

Males, married people, and youth without university studies are more likely to smoke. These results coincide with those obtained in other studies (Lakew & Haile, 2015), with a very similar probability to the present study for married people (OR = 1.71). In relation to the university students, the data obtained in this study indicate that they are less likely to smoke than their counterparts without university studies, in contrast to other studies showing that entering the university increases tobacco consumption (Chen et al., 2004; Intra, 2011; Morrell, Cohen, Bacchi & West, 2005; Pastor et al., 2009). The data of the present study may be due to the rise of the use of electronic cigarettes, as can be seen in several studies of university students (Copeland, Peltier & Waldo, 2017; Rakotozandry et al., 2016) and young people in general (Carroll & Wu, 2014; Peiper et al., 2016), in which it is stated that the use of this device has in-

creased in youth and which praise the use of the electronic cigarette as a measure to quit smoking tobacco, especially in young people. In contrast, other investigations (Brose, Hitchman, Brown, West & McNeill, 2015; Córdoba, 2014; Ofei-Dodoo, Kellerman, Nilsen, Nutting & Lewis, 2017; Shi et al., 2016; Sutfin, McCoy, Morrell, Hoepfner & Wolfson, 2013) do not consider the use of electronic cigarettes as a measure to quit smoking, but to reduce consumption.

As in the case of tobacco use, alcohol consumption has also decreased, as the two consumptions are related according to various studies (Lajtha & Sershen, 2010; Redner, White, Harder & Higgins, 2014). Over the past few years, the consumption of alcohol in young people has also decreased (National Plan on Drugs, 2016). The most frequently consumed beverage is cocktails, followed by beer. However, the consumption of beer has increased, as is the case in other studies conducted in Spain (Galan, Gonzalez & Valencia-Martín, 2014; Ivano, García-Altes & Nebot, 2011) and other countries (La Vecchia et al., 2014; Mutalip, Kamarudin, Manickam, Abd Hamid & Saari, 2014). This increase may be due to the ease of buying beer individually in small quantities and its low cost (Albarracín & Muñoz, 2008; Wagenaar, Salois & Komro, 2009). On another hand, this increase in beer consumption may cause higher risk consumption, compulsive consumption, and consumption of illegal drugs (Dey, Gmel, Studer, Dermota & Mohler-Khuo, 2014; Naimi, Brewer, Miller, Okoro & Mehrotra, 2007).

The type of majority consumption is 1 or 2 times a week. This coincides with students' consumption pattern, which tends to be Thursday and Saturday, as found in other studies (García-Moreno, Expósito, Sanhueza & Angulo, 2008; Pastor et al., 2009; Rodríguez, Agulló & Agulló, 2003).

With regard to the consumption of large amounts of alcohol on the same occasion in a short period of time, called binge drinking, as in other studies, the proportion is high (Golpe, Isorna, Barreiro, Braña & Rial, 2017; Romo-Avilés, Marcos-Marcos, Marquina-Márquez & Gil-García, 2016; Soler-Vila, Galán, Valencia-Martín, León-Muñoz, Gual-lar-Castillón & Rodríguez-Artalejo, 2014; Valencia-Martín, Galan & Rodriguez, 2007). Half of the young people who consume alcohol have presented this pattern in the last 12 months. This fact may be due to the current consumption pattern, which is characterized by consumption in the form of binge drinking, in groups, and lasting a few hours and performed on the weekends (Calafat, 2007; Cortés, Espejo & Giménez, 2007; Golpe et al., 2017; OEDT, 2016; Parada et al., 2011). Binge drinking occurs more frequently in the last period of adolescence and at the beginning of adulthood (Kuntsche, Rehm & Gmel, 2004; Soler-Vila et al., 2014). This form of consumption is increasing, especially in youth and university students (Parada et al., 2012). This threatens their health, as several studies have shown that this pattern of consumption has more health risks (Guerra & Pascual, 2010; Stephens & Duka, 2008).

In relation to gender, males are more likely to consume alcohol and they drink more alcohol than females, coinciding with several studies (Anderson & Baumberg, 2006; Fuller-Thomson, Sheridan, Sorichetti & Mehta, 2013; Galán et al., 2014; Molina et al., 2012).

In the present study, young Spaniards are more likely to drink alcohol, which coincides with other studies such as that of Galán et al. (2014), in which the probability was even higher (OR: 3.45). With regard to educational level, youth with studies are more likely to consume alcohol, especially university students (Mutalip et al., 2014). This higher probability may be due to the fact that they tend to have no family obligations, they live alone, or with roommates, and they relate to students, which encourages consumption of alcohol in large quantities (Wicki et al., 2010), and the high relationship between binge drinking and the university stage (Parada et al., 2012).

Among the limitations of the present study, whose sources were the ENSE and the EESE, records which are cross-sectional studies, it is not possible to determine causal directions between the consumption of alcohol and tobacco and the related variables. In addition, as we have used these sources, we could not use other variables that would have been interesting, such as consumption in the last month, which would have provided more information about the changes in youths' consumption. Also, as these were surveys, the analyzed data correspond to self-reported information. Another limitation was that the psychometric properties of the questionnaires are not known. However, the study possesses great strength, as the data were obtained from national representative surveys with a high number of participants and represent an interesting and useful vision of the evolution of the consumption of alcohol and tobacco among youth, after the implementation of the anti-tobacco law in Spain. Nevertheless, the data of this study must be considered with precaution, as, due to the study design, the variation in smoking consumption cannot be attributed with certainty to the tobacco law, due to the lack of a comparison group.

In conclusion, the consumption of tobacco and alcohol in young Spaniards has dropped from 2011 to 2014, and the number of young people who are trying to quit smoking has increased. This may be due to the anti-smoking policies of 2011 in Spain (Law 42/2010). Cocktails are the most consumed alcoholic beverages, but their consumption is decreasing, and the consumption of beer is increasing. The majority of young people drink 1 or 2 times a week, and one half of the young people who drink alcohol had consumed large amounts on the same occasion in the past 12 months. This is the so-called binge drinking, which is on the increase, and is characterized by the consumption of large amounts of alcohol in a short period of time, typical of young people and students. The variables that are related to increased consumption of tobacco are:

being male, being married, and not having university studies. On another hand, the variables that are related to the consumption of alcohol are: being male, having Spanish nationality, and having studies. In particular, university students are more likely to consume alcohol.

Conflict of interests

The authors of the present study declare that there is no conflict of interest.

References

- Albarraçin, M. & Muñoz, L. (2008). Factores asociados al consumo de alcohol en estudiantes de los dos primeros años de carrera universitaria. *Liberabit*, 14, 49-61.
- Anderson, P. & Baumberg, B. (2006). Alcohol in Europe. *London: Institute of Alcohol Studies*, 2, 73-75.
- Anderson, P., Gual, A., & Colon, J. (2011). Alcohol y atención primaria de la salud: informaciones clínicas básicas para la identificación y el manejo de riesgos y problemas. Organización Panamericana de la Salud. 2008. ISBN 9789275328569.
- Boletín Oficial del Estado. (2010). Ley 42/2010, de 30 de diciembre, por la que se modifica la Ley 28/2005, de 26 de diciembre, de medidas sanitarias frente al tabaquismo y reguladora de venta, el suministro, el consumo y la publicidad de los productos del tabaco. BOE 318 de 31/12/2010.
- Bousoño Serrano, M., Al-Halabí, S., Burón, P., Garrido, M., Díaz-Mesa, E.M., Galván, G.,... Bobes J. (2017). Substance use or abuse, internet use, psychopathology and suicidal ideation in adolescents. *Adicciones*, 29, 97-104. doi:10.20882/adicciones.811.
- Brose, L. S., Hitchman, S. C., Brown, J., West, R. & McNeill, A. (2015). Is the use of electronic cigarettes while smoking associated with smoking cessation attempts, cessation and reduced cigarette consumption? A survey with a 1-year follow-up. *Addiction*, 110, 1160-1168. doi:10.1111/add.12917.
- Calafat, A. (2007). El abuso de alcohol de los jóvenes en España. *Adicciones*, 19, 217-224. doi:10.20882/adicciones.302.
- Callinan, J. E., Clarke, A., Doherty, K. & Kelleher, C. (2010). Legislative smoking bans for reducing second-hand smoke exposure, smoking prevalence and tobacco consumption. *Cochrane Database Systematic Review* (4), CD005992. doi:10.1002/14651858.CD005992.pub2.
- Carroll, S. L. & Wu, L. T. (2014). E-cigarette prevalence and correlates of use among adolescents versus adults: A review and comparison. *Journal of Psychiatric Research*, 54, 43-54. doi:10.1016/j.jpsychires.2014.03.005.
- Chen, X., Li, X., Stanton, B., Mao, R., Sun, Z., Zhang, H., . . . Thomas, R. (2004). Patterns of cigarette smoking

- among students from 19 colleges and universities in Jiangsu Province, China: A latent class analysis. *Drug and Alcohol Dependence*, 76, 153-163. doi:10.1016/j.drugalcdep.2004.04.013
- Copeland, A. L., Peltier, M. R. & Waldo, K. (2017). Perceived risk and benefits of e-cigarette use among college students. *Addictive Behaviors*, 71, 31-37. doi:10.1016/j.addbeh.2017.02.005
- Córdoba, R. (2014). El desafío de los cigarrillos electrónicos. *Atención Primaria*, 46, 307-312. doi:10.1016/j.aprim.2014.01.002
- Cortés, M., Espejo, B. & Giménez, J. A. (2007). Características que definen el fenómeno del botellón en universitarios y adolescentes. *Adicciones*, 19, 357-372. doi:10.20882/adicciones.295
- Dey, M., Gmel, G., Studer, J., Dermota, P. & Mohler-Khuo, M. (2014). Beverage preferences and associated drinking patterns, consequences and other substance use behaviours. *European Journal of Public Health*, 24, 496-501. doi:10.1093/eurpub/ckt109
- Fuller-Thomson, E., Sheridan, M. P., Sorichetti, C. & Mehta, R. (2013). Underage binge drinking adolescents: Sociodemographic profile and utilization of family doctors. *International Scholarly Research Notices: Family Medicine*, 2013, 728-730. doi:10.5402/2013/728730
- Galán, I., Gonzalez, M. J. & Valencia-Martín, J. L. (2014). Alcohol drinking patterns in Spain: A country in transition. *Revista Española de Salud Pública*, 88, 529-540. doi:10.4321/s1135-57272014000400007
- García-Moreno, L. M., Expósito, J., Sanhueza, C. & Angulo, M. T. (2008). Actividad prefrontal y alcoholismo de fin de semana en jóvenes. *Adicciones*, 20, 271-280. doi:10.20882/adicciones.269
- Golpe, S., Isorna, M., Barreiro, C., Braña, T. & Rial, A. (2017). Consumo intensivo de alcohol en adolescentes: prevalencia, conductas de riesgo y variables asociadas. *Adicciones*, 29, 256-267. doi:10.20882/adicciones.932
- Gómez-Fraguela, J. A., Pérez, N. F. & Triñanes, E. R. (2008). El botellón y el consumo de alcohol y otras drogas en la juventud. *Psicothema*, 20, 211-217.
- González-Iglesias, B., Gómez-Fraguela, J. A., Gras, M. E. & Planes, M. (2014). Búsqueda de sensaciones y consumo de alcohol: El papel mediador de la percepción de riesgos y beneficios. *Anales de Psicología*, 30, 1061-1068.
- Gubner, N. R., Kozar-Konieczna, A., Szoltysek-Boldys, I., Slodczyk-Mankowska, E., Goniewicz, J., Sobczak, A., . . . Goniewicz, M. L. (2016). Cessation of alcohol consumption decreases rate of nicotine metabolism in male alcohol-dependent smokers. *Drug and Alcohol Dependence*, 163, 157-164. doi:10.1016/j.drugalcdep.2016.04.006
- Guerri, C. & Pascual, M. (2010). Mechanisms involved in the neurotoxic, cognitive, and neurobehavioral effects of alcohol consumption during adolescence. *Alcohol*, 44, 15-26. doi:10.1016/j.alcohol.2009.10.003
- Hair, E., Bennett, M., Williams, V., Johnson, A., Rath, J., Cantrell, J., . . . Vallone, D. (2017). Progression to established patterns of cigarette smoking among young adults. *Drug and Alcohol Dependence*, 177, 77-83. doi:10.1016/j.drugalcdep.2017.03.040
- Hernández-Serrano, O., Font-Mayolas, S. & Gras, M. (2015). Policonsumo de drogas y su relación con el contexto familiar y social en jóvenes universitarios. *Adicciones*, 27, 205-213. doi:10.20882/adicciones.707
- Higgins, S. T., Kurti, A. N., Redner, R., White, T. J., Galema, D. E., Roberts, M. E., . . . Atwood, G. S. (2015). A literature review on prevalence of gender differences and intersections with other vulnerabilities to tobacco use in the United States, 2004-2014. *Preventive Medicine*, 80, 89-100. doi:10.1016/j.ypmed.2015.06.009
- Intra, M. V. (2011). Cambio en las conductas de riesgo y salud en estudiantes universitarios argentinos a lo largo del periodo educativo. *Revista Internacional de Psicología y Terapia Psicológica*, 11, 139-147.
- Islami, F., Stoklosa, M., Drope, J. & Jemal, A. (2015). Global and regional patterns of tobacco smoking and tobacco control policies. *European Urology Focus*, 1, 3-16. doi:10.1016/j.euf.2014.10.001
- Ivano, R., García-Altes, A. & Nebot, M. (2011). Social impact of abusive alcohol consumption in Spain: Consumption, cost and policies. *Revista Española de Salud Pública*, 85, 141-147. doi:10.1590/s1135-57272011000200003
- Kasza, K. A., McKee, S. A., Rivard, C. & Hyland, A. J. (2012). Smoke-free bar policies and smokers' alcohol consumption: Findings from the International Tobacco Control Four Country Survey. *Drug and Alcohol Dependence*, 126, 240-245. doi:10.1016/j.drugalcdep.2012.05.022
- Krauss, M. J., Cavazos-Rehg, P. A., Plunk, A. D., Bierut, L. J. & Grucza, R. A. (2014). Effects of state cigarette excise taxes and smoke-free air policies on state per capita alcohol consumption in the U.S., 1980-2009. *Alcoholism, Clinical and Experimental Research*, 38, 2630-2638. doi:10.1111/acer.12533
- Kuntsche, E., Rehm, J. & Gmel, G. (2004). Characteristics of binge drinkers in Europe. *Social Science and Medicine*, 59, 113-127. doi:10.1016/j.socscimed.2003.10.009
- La Vecchia, C., Bosetti, C., Bertuccio, P., Castro, C., Pelucchi, C. & Negri, E. (2014). Trends in alcohol consumption in Europe and their impact on major alcohol-related cancers. *European Journal of Cancer Prevention*, 23, 319-322. doi:10.1097/CEJ.0b013e32836562f1
- Lajtha, A. & Sershen, H. (2010). Nicotine: Alcohol reward interactions. *Neurochemical Research*, 35, 1248-1258. doi:10.1007/s11064-010-0181-8
- Lakew, Y. & Haile, D. (2015). Tobacco use and associated factors among adults in Ethiopia: further analysis of the 2011 Ethiopian Demographic and Health Survey. *Bio Medical Central Public Health*, 15, 487. doi:10.1186/s12889-015-1820-4

- Lee, J. M. (2007). The synergistic effect of cigarette taxes on the consumption of cigarettes, alcohol and betel nuts. *Bio Medical Central Public Health*, 7, 121. doi:10.1186/1471-2458-7-121.
- Lee, J. M., Chen, M. G., Hwang, T. C. & Yeh, C. Y. (2010). Effect of cigarette taxes on the consumption of cigarettes, alcohol, tea and coffee in Taiwan. *Public Health*, 124, 429-436. doi:10.1016/j.puhe.2010.04.008
- Lidon-Moyano, C., Fu, M., Ballbe, M., Martín-Sánchez, J. C., Matilla-Santander, N., Martínez, C., . . . Martínez-Sánchez, J. M. (2017). Impact of the Spanish smoking laws on tobacco consumption and secondhand smoke exposure: A longitudinal population study. *Addictive Behaviors*, 75, 30-35. doi:10.1016/j.addbeh.2017.06.016.
- López, M. J., Santín, C., Torrico, E. & Rodríguez, J. M. (2014). Consumo de sustancias psicoactivas en una muestra de jóvenes universitarios. *Psicología y Salud*, 13, 5-17.
- Luengo, A., Otero-López, J.M., Romero, E. & Gómez, J.A. (1996). Efectos de la necesidad de búsqueda de sensaciones sobre la involucración en el consumo de drogas de los adolescentes. *Análisis y Modificación de Conducta*, 22, 683-708.
- McKee, S. A., Higbee, C., O'Malley, S., Hassan, L., Borland, R., Cummings, K. M., . . . Hyland, A. (2009). Longitudinal evaluation of smoke-free Scotland on pub and home drinking behavior: Findings from the International Tobacco Control Policy Evaluation Project. *Nicotine and Tobacco Research*, 11, 619-626. doi:10.1093/ntr/ntp020
- Martínez, C., Méndez, C., Sánchez, M. & Martínez-Sánchez, J. M. (2016). Attitudes of students of a health sciences university towards the extension of smoke-free policies at the university campuses of Barcelona (Spain). *Gaceta Sanitaria*, 31, 132-138. doi:10.1016/j.gaceta.2016.08.009
- Medina-Mora, M. E. (2015). Traducir la evidencia en salud: ¿Qué hacemos con el alcohol? *Salud Mental*, 38, 157-158.
- Ministerio de Sanidad Servicios Sociales e Igualdad, Instituto Nacional de Estadística. (2013). *Encuesta Nacional de Salud. España ENSE 2011/12*. Madrid: Ministerio de Sanidad, Servicios Sociales e Igualdad. Retrieved at <http://www.ine.es>.
- Ministerio de Sanidad Servicios Sociales e Igualdad, Instituto Nacional de Estadística. (2015). *Encuesta Europea de Salud en España EESE 2014*. Madrid: Ministerio de Sanidad, Servicios Sociales e Igualdad. Retrieved at <http://www.ine.es>.
- Molina, A. J., Varela, V., Fernandez, T., Martin, V., Ayan, C. & Cancela, J. M. (2012). Unhealthy habits and practice of physical activity in Spanish college students: The role of gender, academic profile and living situation. *Adicciones*, 24, 319-327.
- Morrell, H. E., Cohen, L. M., Bacchi, D. & West, J. (2005). Predictors of smoking and smokeless tobacco use in college students: A preliminary study using web-based survey methodology. *Journal of American College Health*, 54, 108-115. doi:10.3200/jach.54.2.108-115
- Mutalip, M. H., Kamarudin, R. B., Manickam, M., Abd Hamid, H. A. & Saari, R. B. (2014). Alcohol consumption and risky drinking patterns in Malaysia: Findings from NHMS 2011. *Alcohol and Alcoholism*, 49, 593-599. doi:10.1093/alcalc/agu042
- Naimi, T. S., Brewer, R. D., Miller, J. W., Okoro, C. & Mehrotra, C. (2007). What do binge drinkers drink? Implications for alcohol control policy. *American Journal of Preventive Medicine*, 33, 188-193. doi:10.1016/j.amepre.2007.04.026
- Observatorio Español de la Droga & las Toxicomanías, OEDT. (2016). *Informe 2015. Alcohol, tabaco y drogas ilegales en España*. Madrid: Delegación del Gobierno para el Plan Nacional sobre Drogas. Retrieved at http://www.pnsd.mssi.gob.es/profesionales/sistemasInformacion/informesEstadisticas/pdf/INFORME_2015.pdf.
- Ofei-Dodoo, S., Kellerman, R., Nilsen, K., Nutting, R. & Lewis, D. (2017). Family physicians' perceptions of electronic cigarettes in tobacco use counseling. *Journal of American Board of Family Medicine*, 30, 448-459. doi:10.3122/jabfm.2017.04.170084
- Parada, M., Corral, M., Mota, N., Crego, A., Rodriguez, S. & Cadaveira, F. (2012). Executive functioning and alcohol binge drinking in university students. *Addictive Behaviors*, 37, 167-172. doi:10.1016/j.addbeh.2011.09.015
- Parada, M., Corral, M., Caamaño-Isorna, F., Mota, N., Crego, A., Rodríguez, S. & Cadaveira, F. (2011). Definición del concepto de consumo intensivo de alcohol adolescente (binge drinking). *Adicciones*, 23, 53-63. doi:10.20882/adicciones.167
- Pastor, A. M., Galindo, S. B., Hernandez, M. L., Navarro, A. M., Bernal, C. C. & Aleman, J. A. (2009). Association between the consumption of tobacco and alcohol and physical exercise while at university. *Atención Primaria*, 41, 558-563. doi:10.1016/j.aprim.2009.01.006
- Patiño, N.M. (2008). *Farmacología medica / Medical Pharmacology*. México: Editorial Medica Panamericana.
- Peiper, N. C., Ridenour, T. A., Hochwalt, B. & Coyne-Beasley, T. (2016). Overview on prevalence and recent trends in adolescent substance use and abuse. *Child and Adolescent of Psychiatric Clinics of North America*, 25, 349-365. doi:10.1016/j.chc.2016.03.005
- Plan Nacional sobre Drogas. (2015). *Encuesta sobre alcohol y otras drogas en población general en España (EDADES) 2015*. Madrid, España: Ministerio de Sanidad, Servicios Sociales e Igualdad.
- Plan Nacional sobre Drogas. (2016). *Encuesta Estatal sobre uso de Drogas en Estudiantes de Enseñanzas Secundarias en España (ESTUDES) 2014-2015*. Madrid, España: Delegación del Gobierno para el Plan Nacional sobre Drogas.
- Rakotozandry, T., Stenger, N., Burel, C., Penna, L., Ramadour, M., Disdier, P. & Charpin, D. (2016). E-cigarette use in university students and its relationship to cigarette

- te smoking. *Revue des Maladies Respiratoires*, 33, 235-240. doi:10.1016/j.rmr.2015.04.022.y
- Rana, P., Pérez-Rios, M., Santiago-Pérez, M. I. & Crujeiras, R. M. (2016). Impact of a comprehensive law on the prevalence of tobacco consumption in Spain: Evaluation of different scenarios. *Public Health*, 138, 41-49. doi:10.1016/j.puhe.2016.03.007
- Real Academia Española. (2001). *Diccionario de la lengua española* (22.aed.). Retrieved at <http://www.rae.es/rae.html>.
- Rodríguez, J., Agulló, E. & Agulló, M. S. (2003). Jóvenes, fin de semana y uso recreativo de drogas: evolución y tendencias del ocio juvenil. *Adicciones*, 15, 7-34. doi:10.20882/adicciones.451.
- Romo-Avilés, N., Marcos-Marcos, J., Marquina-Márquez, A. & Gil-García, E. (2016). Intensive alcohol consumption by adolescents in Southern Spain: The importance of friendship. *International Journal of Drug Policy*, 31, 138-146. doi:10.1016/j.drugpo.2016.01.014.
- Royo-Isach, J., Vidal, J. M. & Zapata, M. (2015). Drogas en adolescentes y jóvenes. ¿Qué ha cambiado? *FMC: Formación Médica Continuada en Atención Primaria*, 22, 544-553.
- Ruiz-Risueño, J., Ruiz-Juan, F. & Zamarripa, J. I. (2012). Alcohol y tabaco en adolescentes españoles y mexicanos y su relación con la actividad físico-deportiva y la familia. *Revista Panamericana de Salud Pública*, 31, 211-220.
- Sánchez, A., Redondo, S., García, M. & Velázquez, A. (2012). Episodios de urgencia hospitalaria relacionados con el consumo de alcohol en personas de entre 10 y 30 años de edad en Castilla y León durante el período 2003-2010. *Revista Española de Salud Pública*, 86, 409-417.
- Shi, Y., Pierce, J. P., White, M., Vijayaraghavan, M., Compton, W., Conway, K., . . . Messer, K. (2016). E-cigarette use and smoking reduction or cessation in the 2010/2011 TUS-CPS longitudinal cohort. *Bio Medical Central Public Health*, 16, 1105. doi:10.1186/s12889-016-3770-x
- Soler-Vila, H., Galan, I., Valencia-Martín, J. L., León-Muñoz, L. M., Guallar-Castillón, P. & Rodríguez-Artalejo, F. (2014). Binge drinking in Spain, 2008-2010. *Alcoholism: Clinical and Experimental Research*, 38, 810-819. doi:10.1111/acer.12275
- Stephens, D. N. & Duka, T. (2008). Cognitive and emotional consequences of binge drinking: Role of amygdala and prefrontal cortex. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 363, 3169-3179. doi:10.1098/rstb.2008.0097
- Sutfin, E. L., McCoy, T. P., Morrell, H. E., Hoepfner, B. B. & Wolfson, M. (2013). Electronic cigarette use by college students. *Drug and Alcohol Dependence*, 131, 214-221. doi:10.1016/j.drugalcdep.2013.05.001
- Valencia-Martín, J. L., Galan, I. & Rodríguez-Artalejo, F. (2007). Binge drinking in Madrid, Spain. *Alcoholism: Clinical and Experimental Research*, 31, 1723-1730. doi:10.1111/j.1530-0277.2007.00473.x
- Wagenaar, A. C., Salois, M. J. & Komro, K. A. (2009). Effects of beverage alcohol price and tax levels on drinking: A meta-analysis of 1003 estimates from 112 studies. *Addiction*, 104, 179-190. doi:10.1111/j.1360-0443.2008.02438.x
- Wicki, M., Kuntsche, E. & Gmel, G. (2010). Drinking at European universities? A review of students' alcohol use. *Addictive Behaviors*, 35, 913-924. doi:10.1016/j.addbeh.2010.06.015
- World Health Organization (2008). *WHO report on the global tobacco epidemic, 2008: The MPOWER package*. Switzerland: Author.
- Young-Wolff, K. C., Hyland, A. J., Desai, R., Sindelar, J., Pilver, C. E. & McKee, S. A. (2013). Smoke-free policies in drinking venues predict transitions in alcohol use disorders in a longitudinal U.S. sample. *Drug and Alcohol Dependence*, 128, 214-221. doi:10.1016/j.drugalcdep.2012.08.028.