



# The Role of Religion and Religiosity in Alcohol Consumption in Adolescents in Spain

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## Abstract

This study explored the relationship between religion, religiosity and alcohol consumption in a sample of 2.890 adolescents (ages 12–18) in Madrid, Spain. Results showed that non-believers were the group that consume and abuse alcohol the most, as opposed to Catholics. Besides, religiosity was related to a lower alcohol use. Therefore, religion and religiosity in Spanish adolescents appear to be related to a low alcohol use. This contribution may help to clarify the risk and protection factors for alcohol consumption by adolescents and contribute to strengthening the preventive actions.

**Keywords** Alcohol use · Alcohol abuse · Adolescents · Religion · Religiosity

## Introduction

Alcohol consumption is part of the culture of many Western countries and is most deeply rooted in Europe. Spain is one of the countries with the highest rates of alcohol consumption, which nearly doubles the worldwide average (World Health Organization 2014). Among Spanish adolescents between the ages of 14 and 18, 76.9% have tried alcohol at least once in their lifetime, 75.6% have consumed alcohol within the last year, and 67% have had alcohol within the last month. Even though the legal age to buy and consume alcohol in Spain is 18, the average age to start drinking among students taking the Spanish compulsory secondary education [Educación Secundaria Obligatoria (ESO)] is 14 years (Observatorio Español de las Drogas y las Adicciones, OEDA [Spanish Observatory for Drugs and Addiction] 2018). Alcohol consumption has a directly negative impact on the adolescent organism, as early onset of use and prolonged abuse can cause brain damage and lead to both acute and chronic illnesses (Cadaveira 2009; Pulido et al. 2014; Sánchez-Queija et al. 2015). What is more, Anderson et al. (2012) have shown that 20% of deaths in Europeans between the ages of 15 and 19 are alcohol related.

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The increase in alcohol consumption among adolescents has triggered numerous research studies to detect the risk and protection factors associated with this drinking behavior, so they can be considered when designing prevention programs. Some of these factors are linked to sociodemographic variables such as gender, family background, ethnic origin and religion. In Spain, the influence of religion on adolescents' alcohol consumption patterns is less studied than the rest of the factors. To truly analyze this influence, the research should not be limited to simply identifying the specific religious affiliation, but also exploring the religiosity, understood as the individual's degree of adherence to the religion's principles and observance of its beliefs (Ghandour et al. 2009; Sinha et al. 2007). Two types of religiosity should be taken into account: the extrinsic (aspects that are behavioral and observable, such as attending religious services) and the intrinsic (the relationship with a higher being involving all the aspects of what some authors call spirituality) (Gómez-Bustamante and Cogollo-Milanés 2015; Mueller et al. 2001; Peach 2003). Several authors have suggested that there is an inverse relationship between religiosity and alcohol consumption, as it facilitates self-control (Desmond et al. 2013; Kim-Spoon et al. 2014) or because it is associated with a greater concern for health (Porche et al. 2015; Rew and Wong 2006). The influence of religion on alcohol consumption is an area that has not been extensively studied. Furthermore, findings from different researches are quite contradictory, particularly when focusing on the Catholic religion. While some authors report that members of the Catholic faith consume more alcohol than members of the Muslim or Protestant faith (Charro 2014; Kim-Spoon et al. 2014; Vargas-Valle and Martínez-Canizales 2015), others have found that Catholicism provides a protection mechanism against alcohol consumption (Desmond et al. 2013; Queiroz et al. 2015). However, other authors suggest that the individual's specific religion has no impact on alcohol consumption (Francis et al. 2005; Piko and Fitzpatrick 2004) or that, at best, it has a lower impact than religiosity (Gmel et al. 2013).

Spain is a predominantly Catholic country, although for the last years the Spanish society has experienced a steady decrease in the number of people who identify as Catholics, along with an increase in the percentage of this population who do not follow their religion's precepts. Data from the latest survey on religious beliefs in Spain carried out by the Observatory for Secularism [Observatorio sobre el Laicismo] show that 69.8% of the population claims to be Catholic, although only 26.4% of them claims to follow the religion's precepts; the 25.2% of the Spanish population claims to be agnostic or atheist; and only 2.6% of the population claims to profess other religions. The Observatory's measurements of religiosity, as expressed in the number of times an individual attends a religious service apart from social conventions (weddings, funerals), indicate that 57.8% hardly ever attend services, while only 9.7% goes once a month, and 2% goes several times a week (Centro de Investigaciones Sociológicas [Center for Sociological Research] 2017).

Based on this background, it is important to deeply examine the relationship between adolescents' alcohol consumption and their religion and religiosity. The aim of this paper is to analyze whether religiosity and religion are related to alcohol use and abuse within the Spanish adolescent population or, on the contrary, these factors are irrelevant in a society that is becoming more and more secular.

## Method

### Variables and Instrument

An ad hoc questionnaire was developed from others previously tested in adolescents to examine alcohol consumption and other risk behaviors (Meneses et al. 2008). The new version of the questionnaire was pretested to validate the changes made.

In this study, the variables for “alcohol use” and “alcohol abuse” (this last understood as drunkenness) were measured in three consumption frequencies: “at least once in a lifetime,” “in the last year” and “in the last 30 days.” These are the standardized measures often used on the Spanish Observatory for Drugs and Addiction (OEDA), included on the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and are validated by official organizations (EMCDDA 2018; OEDA 2018).

The variable “religion” was assessed through an open-answer question so adolescents indicated their religion affiliation. The variable “religiosity” was measured on a Likert-type scale containing six correlated items (Cronbach’s  $\alpha = 0.943$ ): “my religion is important to me,” “I consider myself a very strong believer,” “my religious beliefs influence my actions,” “I fulfill the mandates of my religion,” “I pray every day,” “I enjoy being with other people who are as religious as I am.”

### Participants

The study was based on a sample of 2,890 adolescents between the ages of 12 and 18 ( $M = 14.2$  years,  $SD = 1.33$ ), of which 47.4% were women. This sample was selected by a stratified sampling: In the first phase, ten educational centers were selected from among all the public and private centers offering compulsory secondary education in Madrid, Spain, assuming a confidence interval of 95%, a sampling error of 2.5% and a population variance of 50%. Of these centers, 61.5% were public. In the second phase, information was collected for the four grades of all the centers from the first phase, resulting in the following distribution of the sample: 26.7% of the subjects were attending the first year, 27.6%, the second, 23.3%, the third, and 22.4%, the fourth.

In response to the questionnaire, 60.2% of the participants claimed to be Catholic ( $n = 1740$ ), 2.2% to be Muslim ( $n = 65$ ), 2.7% to be members of other Christian denominations ( $n = 81$ ; 8 Protestants, 39 Evangelicals, 24 Orthodox Christians and 10 Jehovah’s Witnesses), and 0.4% belonged to other religious affiliations ( $n = 12$ ; 1 Jew and 11 Buddhists). This last group was excluded from analyses due to its low representativeness. Finally, 28% of the adolescents stated to be a non-believer, i.e., to have no religious affiliation ( $n = 809$ ).

In this sample, the average age to start drinking was 12.09 years ( $SD = 2.25$ ), and regarding alcohol consumption, 58.4% had tried it at least once in their lifetime, 42.2% in the last year and 24.9% in the last 30 days. As for alcohol abuse, 19.6% of the adolescents reported having gotten drunk at least once in their lifetime, 16.2%, in the last year, and 8.9%, in the last 30 days.

The parents of the participants were informed about the study, and in those educational centers where it was deemed necessary, parents gave written consent. Once the study was completed, each of the centers received a monographic report with the results of their students, along with orientation on preventing alcohol consumption designed for the school setting. The project was authorized by the ethics committee of the researchers’ institution,

as it met the ethical guidelines set by the American Psychology Association and the Official College of Psychologists of Spain.

## Data Analysis

Data analysis was conducted with the version 24 of the SPSS Statistics program. A *Chi-squared test* was used to evaluate three relationships between categorical variables: (1) gender and religion, (2) religion and religiosity, and (3) religion, religiosity and alcohol consumption. When this test showed significant differences, adjusted residuals were analyzed to determine which categories revealed significantly higher or lower frequencies than expected. Finally, *Student's t test* was used with independent measurements to evaluate differences in religiosity among those who consumed or abused alcohol. In the descriptive analysis, categorical variables were informed by percentages and quantitative variables were informed by mean and standard deviations. In all the analyses, the confidence interval was 95% and  $p < .05$  values were considered significant.

## Results

### Gender

No statistically significant association was found between gender and alcohol use at least once in a lifetime [ $\chi^2(1.2799) = 0.35$ ;  $p = .851$ ], in the last year, [ $\chi^2(1.2682) = 0.624$ ;  $p = .430$ ] and in the last 30 days [ $\chi^2(1.2685) = 0.282$ ;  $p = .596$ ]. For this reason, all analyses in this study were conducted on the entire sample, without a breakdown by gender.

### Religiosity

Of the sample, 48.6% of the participants said that religion was very important to them, 39.4% claimed to be strong believers, 31.9% said that their religious beliefs influenced their actions, 36.4% reported that they followed their religion's mandates, 29.4% said they prayed every day, and 40.1% reported enjoying being with other people as religious as they are. Statistically significant associations were found between the different dimensions of religiosity and the specific religious affiliations identified in the analysis: Muslims were those who identified the most with all the dimensions of religiosity; Catholics identified with five of them except for I pray every day; in the case of other Christians, the only statistically significant item was I consider myself a very strong believer (Table 1).

### Relationship Between Religion, Religiosity and Alcohol Consumption (Use and Abuse)

Results show a relationship between religious affiliation and alcohol consumption at least once in a lifetime [ $\chi^2(3.2623) = 49.03$ ;  $p < .001$ ]. It has been found a lower frequency of consumers between Muslims (57.9%,  $Z = -5.6$ ;  $p < .001$ ) and Catholics (25.4%,  $Z = -2.7$ ;  $p < .003$ ) compared to non-believers (66.7%,  $Z = 4.7$ ;  $p < .001$ ). Results show no differences in the case of other Christians (59.5%,  $Z = -0.1$ ;  $p = .460$ ). Among the believers (Muslims, Catholics and other Christians), those who have never consumed any alcohol show higher levels of religiosity ( $M = 15.7$ ,  $SD = 4.8$ ) compared to those who

**Table 1** Religiosity and religion

	Catholics	Muslims	Other Christians
<i>My religion is very important to me</i> $\chi^2(2.1852) = 11.2; p = .004$	70.2% Z = - 2.0 $p < .023$	82.9% Z = 3.3 $p < .001$	68.4% Z = - .5 $p = 3.09$
<i>I consider myself a very strong believer</i> $\chi^2(2.1853) = 11.2; p < .001$	56.3% Z = - 3.2 $p = .001$	81.5% Z = 4 $p < .001$	60.5% Z = - 2.0 $p = .023$
<i>My religious beliefs influence my actions</i> $\chi^2(2, 1844) = 21.63; p < .001$	45.5% Z = - 3.2 $p = .001$	75% Z = 4.0 $p < .001$	48.7% Z = .40 $p = .345$
<i>I fulfill the mandates of my religion</i> $\chi^2(2.1846) = 28.94; p < .001$	52.5% Z = - 2.9 $p = .002$	85.9% Z = 5.3 $p < .001$	47.3% Z = - 1.1 $p = .136$
<i>I pray every day</i> $\chi^2(2.1829) = 7.57; p = .023$	43% Z = - .60 $p = .274$	58.1% Z = 2.4 $p = .008$	35% Z = - 1.4 $p = .081$
<i>I enjoy being with other people as religious as I am</i> $\chi^2(2.836) = 13.42; p = .001$	55.7% Z = - 2.8 $p = .003$	79% Z = 3.6 $p < .001$	58.7% Z = .40 $p = .345$

Percentages in each religious group

have consumed at least once in their lifetime [ $M = 14.9$ ,  $SD = 4.5$ ,  $t(1546.3) = 3.35$ ;  $p = .001$ ].

A statistically significant association was found between religious affiliation and consumption of alcohol in the last year [ $\chi^2(3.2520) = 57.262$ ;  $p < .001$ ]. It has been found a lower frequency of consumers between Muslims (16.1%,  $Z = - 4.6$ ;  $p < .001$ ) and Catholics (41.5%,  $Z = - 4.7$ ;  $p < .001$ ) compared to non-believers (54.6%,  $Z = 6.4$ ;  $p < .001$ ). Results show no differences in the case of other Christians (47.2%,  $Z = 0.4$ ;  $p = .345$ ). Among the believers from the three analyzed religions, those who had not consumed in the last year had higher scores regarding religiosity ( $M = 15.51$ ,  $SD = 4.8$ ) than those who had consumed within this period [ $M = 14.72$ ,  $SD = 4.4$ ],  $t(1538.8) = 3.5$ ;  $p < .001$ ].

Finally, results show a relationship between religious affiliation and alcohol consumption in the last 30 days [ $\chi^2(3.2523) = 31.820$ ;  $p < .001$ ]. It has been found a lower frequency of consumers between Muslims (13.1%,  $Z = - 2.3$ ;  $p < .011$ ) and Catholics (23.2%,  $Z = - 4.4$ ;  $p < .001$ ) compared to non-believers (33.1%,  $Z = 5.3$ ;  $p < .001$ ). Results show no differences in the case of other Christians (27.4%,  $Z = 0.3$ ;  $p = .382$ ). Among the believers from the three analyzed religions, those who had not consumed in the last 30 days had higher scores regarding religiosity ( $M = 14.62$ ,  $SD = 4.6$ ) than those who had consumed within this period [ $M = 15.35$ ,  $SD = 4.7$ ],  $t(638) = 2.7$ ;  $p = .007$ ].

When analyzing alcohol abuse among consumers, significant differences were found in the frequency at least once in a lifetime regarding the religion [ $\chi^2(3.756) = 19.555$ ;  $p < .001$ ], except for the “other Christians” (82.6%,  $Z = 1.6$ ;  $p < .055$ ). It has been found that fewer Catholics claimed having gotten drunk in this frequency (60.2%,  $Z = - 3.8$ ;  $p < .001$ ), compared to non-believers (71.6%,  $Z = 2.6$ ;  $p < .005$ ), and specially Muslims (100%,  $Z = 2.5$ ;  $p < .006$ ). There were no meaningful differences regarding religiosity

between those who had abused alcohol “at least once in a lifetime” ( $M = 10.92$ ,  $SD = 5.2$ ) and those who had not [ $M = 10.92$ ,  $SD = 5$ ,  $t(513) = 1.857$ ;  $p = .064$ ].

The study found a relationship between religious affiliation and alcohol abuse in the last year [ $\chi^2(3.733) = 13.713$ ;  $p = .003$ ]. There were fewer Catholics who had gotten drunk during the last year (50.7%,  $Z = -3.1$ ;  $p = .001$ ), compared to non-believers (62.1%,  $Z = 2.8$ ;  $p = .003$ ), and specially Muslims (90%,  $Z = 2.2$ ;  $p = .014$ ). No significant relationship was found in the case of other Christians (52.6%,  $Z = -0.3$ ;  $p = .382$ ). There were no meaningful differences regarding religiosity between those who had abused alcohol in the last year ( $M = 10.83$ ,  $SD = 5.2$ ) and those who had not [ $M = 11.58$ ,  $SD = 5.1$ ,  $t(705.5) = 2.004$ ;  $p = .045$ ].

No relationship was found between religious affiliation and alcohol abuse in the last 30 days [ $\chi^2(3.723) = 7.786$ ;  $p = .051$ ]. Neither were found in religiosity according to whether the participants had abused alcohol in the last 30 days [ $t(455.64) = 0.843$ ;  $p = .399$ ].

## Discussion

The aim of this study was to explore the relationship between alcohol consumption, religion and religiosity in adolescents in Madrid, Spain, to analyze its association with alcohol use and abuse in such a vulnerable population.

Different frequencies have been analyzed in the Spanish epidemiological studies (OEDA 2018): consumption at least once in a lifetime, in the last year and in the last 30 days. It has been found in the present study that the percentage of adolescents consuming alcohol is lower than the reflected in the Spanish epidemiological data (54.8% vs. 76.9% at least once in a lifetime; 42.2% vs. 75.6% in the last year; 24.9% vs. 67% in the last 30 days). These differences are likely to be due to the age of the participants, as 54.3% of them belonged to the first and second year of the ESO (12 and 13 years old), when fewer adolescents consume alcohol. Nevertheless, the OEDA (2018) collects data from adolescents of 14 years old and above.

It has been analyzed the relationship between religious affiliation and religiosity among believer adolescents, and it has been found that for most of them their religion is very meaningful (first assessed item of religiosity): 70.2% of Catholics, 82.9% of Muslims and 68.4% of the other Christians have given an affirmative answer to the item my religion is very important to me. Muslims from the study was the group most identified with the rest of the religiosity dimensions, followed by Catholics. These results were unexpected because, according to data from Instituto de la Juventud [Spanish Youth Institute] (2014), the religion element ranks last in the scale of Spanish youth values. In the same vein, some studies highlight this loss of religion relevance for the Spanish adolescents even when they are compared to the youth population from other geographically and culturally neighboring countries, such as Portugal (Serrano et al. 2004). It could be thought that some participants may have given socially desirable answers or that due to their young age they keep their religious beliefs transferred by their family and elders.

These results suggest that there is a connection between religious affiliation (Catholic and Muslim), religiosity and use of alcohol in all the frequencies of consumption (at least once in a lifetime, in the last year and in the last 30 days). Compared to the non-believers, fewer Muslim and Catholic adolescents consumed alcohol, and those who had never consumed were the ones with higher scores in religiosity.

Firstly, regarding religious affiliation, one of the obvious reasons why fewer Muslims consume alcohol is its prohibition according to the Islam rules. Therefore, it makes sense that Muslim adolescents do not usually drink alcohol, as indicated in several researches (Carvajal et al. 2002; Dotinga et al. 2002; Forcada et al. 2008; Kim-Spoon et al. 2014; Luengo et al. 2009; Navarro-Prado et al. 2017; Pedersen and Kolstad 2000), except for some multiethnic countries, such as Bosnia–Herzegovina. In this country, it has been found that Muslim adolescents drink as much alcohol as Catholics (Zenic et al. 2015). However, results also show that there are fewer Catholic adolescents who consume alcohol compared to non-believers. This fact was not expected because Catholic religion does not forbid alcohol use. As Kathol and Sgoutas-Emch (2017) point out, this might be due to the fact that young Catholics who are very religious think that alcohol consumption is discouraged by their religious education. Therefore, they might present a proscriptive attitude that increases the likelihood of not consuming alcohol, even if it is not forbidden. This could be the explanation of the obtained results, as Catholics from the study also had high scores regarding religiosity.

Secondly, regarding the relationship between religiosity and alcohol consumption, data obtained from this study match those from other American and European studies. These data point out that religiosity (or any of the dimensions considered in this paper) reduces the risk of consuming alcohol (Ameri et al. 2016; Bezerra et al. 2009; Carmack and Lewis 2016; Desmond et al. 2013; Marsiglia et al. 2005; Parenteau 2017; Piko and Fitzpatrick 2004; Queiroz et al. 2015; Sinha et al. 2007). Nevertheless, some studies have detected that religiosity is only related to a delay in the onset of alcohol consumption by adolescents (Dohn et al. 2014). Therefore, according to the suggestions provided by Porche et al. (2015), it would be interesting to carry out a long-term follow-up to see in what extent religious beliefs and practices during childhood have a continuous influence in the Spanish adolescents.

It has been sought to compare also these results with the data from other Spanish studies which specifically analyze the relationship between religiosity and alcohol consumption, although there are not many published. Gómez (2003) has found that religiosity is twice as relevant as ideology for predicting abstinence from alcohol among adolescents. Some Spanish papers on risk and protection factors from risk behaviors by adolescents include variables related to religiosity. In this sense, it has been found that religiosity is negatively correlated to deviant behaviors, such as alcohol use and abuse (Larrosa and Rodríguez-Arias 2010; Martínez and Robles 2001; Meneses et al. 2008; García et al. 2005).

Regarding alcohol abuse, religiosity has found to have no statistically meaningful relationship at any frequency (in the last year and in the last 30 days). This fact contradicts the results from previous studies, where religiosity was related to lower abuse behaviors (Dohn et al. 2014; Escobar and Vaughan 2014). By contrast, religious affiliation was associated with alcohol abuse in the frequencies at least once in a lifetime and in the last year, but not in the last 30 days. In this study, results show that fewer Catholics claimed having gotten drunk, while the percentage of non-believers and Muslims that abuse are higher (the relationship with the other Christians was not statistically significant). It is of note that Muslims, who were the group with fewer affirmative answers when asked if they consumed alcohol, were those with the highest percentages regarding alcohol abuse. One of the reasons could be biological, that is to say, if they are not used to consuming alcohol, when it happens they can get easily drunk. Nevertheless, further evidence found in Muslim undergraduate students shows that it is due to their belief that alcohol only has an effect when is consumed at a high level (Sznitman et al. 2015). Another reason could be that, due the prohibition by the Islam rules, Muslims have no guidelines on alcohol consumption

(Razvodovsky 2004). Special mention should be made to the honest Muslim participants from this study have showed when admitting drunkenness. In other studies, it has been indicated that, according to the relevance of the religious rules and consequences derived otherwise, respondents' answers regarding alcohol consumption usually indicate low levels of consumption (Forcada et al. 2008).

Results have shown that non-believer adolescents ( $n = 809$ ; 28% of the sample) were those with more affirmative answers regarding alcohol consumption “at least once in a lifetime,” “in the last year” and “in the last 30 days.” In this group, there also more affirmative answers compared to Catholics regarding alcohol abuse at least one in a lifetime, in the last year and in the last 30 days. Therefore, the lack of religious affiliation in Spain appears to be related to a higher alcohol use and abuse.

Spain is one country that is predominantly Catholic in its religious orientation. That is why adolescents from other religious affiliations are poorly represented and conclusions on Muslims and other Christians must be considered carefully.

Furthermore, this study presents other limitations: a questionnaire to which adolescents have answered at school and they may have given socially desired answers on religiosity that may have not been compared with further external information. It is also possible that these students have answered according to their schoolmates' answers. On the other hand, it should have been considered other sociocultural factors as in Spain adolescents from different religious affiliations other than Catholicism usually are from immigrant families. Lastly, in future studies, it would be interesting taking also into account the adolescents' beliefs, and not only their religious affiliation and religiosity, as this element could be a relevant factor that influences alcohol consumption by this population.

It is true that these limitations may have a great impact on the generalizability, validity and usefulness of the data; according to the reviewed literature, this study constitutes one of the few studies focused on analyzing the relationship between religiosity, religion and alcohol consumption among adolescents in Spain. This contribution may help to clarify the risk and protection factors for the alcohol consumption by adolescents and contribute to strengthening the preventive actions.

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