

ALCOHOL EXPECTANCY-ADOLESCENT QUESTIONNAIRE (AEQ-AB): VALIDATION FOR PORTUGUESE COLLEGE STUDENTS

CUESTIONARIO ALCOHOL EXPECTANCY-ADOLESCENT (AEQ-AB): VALIDACIÓN PARA ESTUDIANTES UNIVERSITARIOS PORTUGUESES

Leandro S. Almeida¹, María del Carmen Pérez Fuentes², Joana R. Casanova¹, José Jesús Gázquez Linares⁴ y María del Mar Molero Jurado²

¹Research Centre of Education (CIEd), University of Minho, Portugal

²University of Almería, Spain

⁴Universidad Autónoma de Chile, Chile

Abstract

Excessive alcohol consumption by college students is being recognized more and more, and its negative effects justify the implementation of prevention programs. Positive expectancies of alcohol are frequently acquired in adolescence and assume an important role in young-adult consumption patterns. This paper describes validation of the brief version of the Alcohol Expectancy-Adolescent Questionnaire (AEQ-AB) carried out with a sample of 317 freshman-year college students at a public Portuguese University. Results of confirmatory factor analysis, invariance and internal consistency showed some difficulties in the internal structure of the questionnaire. The two-factor model did not fit because no factor emerged to represent the negative expectation items. A single-factor structure was assumed and its invariance by gender was confirmed, as well as good internal consistency. The validity criterion showed positive and negative correlations with several variables depending on whether they were positively or negatively related to alcohol consumption. The oldest students and students drinking alcohol from early ages had the lowest expectancy of positive effects of the use of alcohol. With regard to academic performance, freshmen with a high GPA showed strong expectancies for the positive effects of alcohol. Positive correlations have been observed between positive alcohol expectancy and consumption levels. Further studies are necessary to include a negative dimension in the measure of expectancies of alcohol consumption.

Keywords: Higher education, alcohol consumption, alcohol expectancy, substance abuse

Resumen

El consumo excesivo de alcohol por parte de los estudiantes universitarios está siendo reconocido cada vez más, y sus efectos negativos justifican la implementación de programas de prevención. Las expectativas positivas de alcohol se adquieren con frecuencia en la adolescencia y asumen un papel importante en los patrones de consumo de adultos jóvenes. Este artículo describe la validación de la versión abreviada del cuestionario sobre la expectativa de consumo de alcohol (AEQ-AB) que se llevó a cabo con una muestra de 317 estudiantes universitarios de primer año en una universidad pública portuguesa. Los resultados del análisis factorial confirmatorio, la invariancia y la consistencia interna mostraron algunas dificultades en la estructura interna del cuestionario. El modelo de dos factores no encajaba porque no surgió ningún factor que representara los elementos de expectativa negativa. Se asumió una estructura de factor único y se confirmó su invarianza por género, así como una buena consistencia interna. El criterio de validez mostró correlaciones positivas y negativas con varias variables dependiendo de si estaban relacionadas positiva o negativamente con el consumo de alcohol. Los estudiantes más antiguos y los estudiantes que beben alcohol desde edades tempranas tenían la menor expectativa de efectos positivos del uso de alcohol. Con respecto al rendimiento académico, los estudiantes de primer año con un GPA alto mostraron una gran expectativa por los efectos positivos del alcohol. Se han observado correlaciones positivas entre la expectativa positiva de alcohol y los niveles de consumo. Se necesitan más estudios para incluir una dimensión negativa en la medida de las expectativas de consumo de alcohol.

Palabras clave: Educación superior, consumo de alcohol, expectativa de alcohol, abuso de sustancias

At present, alcohol consumption among young people continues to be a phenomenon of great social concern, receiving special attention because of its widespread use, and recognized as a public health problem (WHO; World Health Organization, 2014a). The Global Status Report on Alcohol and Health 2014 reveals worldwide consumption of alcohol of more than six liters per year per person aged 15 years or over. Europe, according to this report, is the region with the highest per capita consumption of alcohol, with particularly high consumption rates in some countries (WHO, 2014b). In this same line, authors such as Davoren, Dahly, Shiely and Perry (2017) confirm the specific existence of this problem in a university population.

The freshman year at college is a time of change for young people, in which an increase in consumption of alcohol and acquisition of high-risk patterns such as binge drinking are often detected (Bewick et al., 2008; Chau & Saravia, 2016). The transition to a new context with more freedom and more interpersonal investment is especially important because it can increase the positive expectation about alcohol consumption that can lead to change in the alcohol consumption patterns. The effects of excessive alcohol consumption adversely affect different areas of physical, cognitive and emotional functioning, and therefore interfere with the student's performance in important life tasks (Carbia, Corral, García-Moreno, Cadaveira, & Caamaño-Isorna, 2016; Polak & Conner, 2012). There is also evidence of the relationship between the use of substances with widespread use and involvement of young people in other risk behaviors, such as violence (Carbia, et al., 2016; García-Fernández, Vicent, Inglés, González, & Sanmartín, 2017; Gázquez, Pérez-Fuentes, Molero, & Simón, 2016; Gázquez et al., 2015, Pérez-Fuentes, Molero, Carrión, Mercader, & Gázquez, 2016; Tondowsk et al., 2014).

Merrill, Kenney, and Barnett (2017) have found that it is possible for college students to develop greater tolerance for the effects of alcohol, which leads to variation in the consumption-consequence association. Wicki, Kuntsche, and Gmel (2010), based on a review of publications on the characteristics of university alcohol consumers in Europe, identified a number of variables related to consumption patterns. Thus, gender, motivation for consumption, and other characteristics of university life, such as sharing a room or going to parties,

were some of the variables to be considered for tackling this problem in university students.

Another issue that receives a great deal of attention from research is the expectancies the young adult population has for alcohol consumption in (Lang et al., 2012; Reich, Below & Goldman, 2010). Along this line, it is hypothesized that individuals with positive attitudes and expectations towards alcohol consumption present a greater risk in the initiation and maintenance of consumption behavior (Araújo & Gomes, 1998; Gázquez et al., 2015). Many of the beliefs young people have about the consequences of consuming substances such as alcohol are erroneous (Carbonero, Martín-Antón, & Feijó, 2010), which is associated with minimization of the risks derived (Suárez, Del Moral, Martínez, John, & Musitu, 2016). A recent study on the subject (Stamates, Lau-Barraco, & Linden-Carmichael, 2016), which analyzes the relationship between early intoxication and consumption-related effects, shows that they are mediated by expectancies. Thus, an episode of previous intoxication is associated with strong expectancies of the effects of alcohol, which leads to more consumption. In university students, the impact of a positive attitude towards alcohol consumption is related to pleasure (Davoren, Cronin, Perry, & O'Connor, 2016) and the existence of a drinking culture at university social gatherings (Davoren et al., 2017).

Empirical evidence for the detection of predictor variables for the use of substances of such widespread use as alcohol is fundamental to address this social problem. In addition, correcting possible misperceptions about alcohol use among students can be of great value in promoting health in the university context (Silva & Tucci, 2015; Stock et al., 2014) and for the academic engagement of university students (Medrano, Moretti, & Ortiz, 2015). New reliable evaluation instruments must be developed and validated for this. At this point, it is interesting to note the results found by Foxcroft, Moreira, Almeida, and Smith (2015) revealing a bias in meta-analyses on the subject derived from the variability in consumption by university students and in the results, explained by the use of certain measurement scales.

The problem of alcohol consumption in university students has been evaluated using a wide range of questionnaires (Devos-Comby & Lange, 2008), which measure aspects related to the consumption pattern

(Rutgers Alcohol Problem Index; White & Labouvie, 1989), negative consequences (Alcohol Problems Scale; O'Hare, 1997; Young Adult Alcohol Consequences Questionnaire; Read et al., 2006 validated in a Portuguese population by Ferreira, Martins, Coelho, and Kahler, 2014) or both issues (Alcohol Use Disorders Identification Test; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993).

Due to the relevant role of expectancies for alcohol consumption among young people, several instruments have been specifically developed and/or adapted for this effect (Pilatti, Godoy, & Brussino, 2011). Among them, the Expectancy Questionnaire (EQ; Leigh & Stacy, 1993) and the Alcohol Expectancy Questionnaire (AEQ; Brown, Goldman, Posada, & Anderson, 1980) are adapted to university populations (Mora-Ríos, Natera, Villatoro, & Villalvazo, 2000). In the Spanish adaptation of the Expectancy Questionnaire for adolescent population (Camacho et al., 2013), the authors report acceptable adjustment indices for a model of eight factors grouped into two general factors of positive and negative expectations. However, as with the Alcohol Expectancy Questionnaire (AEQ), the impact of negative expectations on consumption is not clear, with a low percentage of variance explained. In this context of adolescent alcohol consumption, the Alcohol Expectancy Questionnaire-Adolescent (AEQ-A; Greenbaum, Brown, & Friedman, 1995) was later abbreviated by (Stein et al., 2007), to a short seven-item version (Alcohol Expectancy Questionnaire Adolescent, Brief; AEQ-AB). This abbreviated version includes positive and negative aspects related to expectations about alcohol consumption (unlike the adult version, which only includes positive aspects), and has been adapted to Spanish adolescents (Gázquez et al., 2015). From this adaptation, adequate psychometric properties are extracted, with an adequate adjustment of the original seven-item model, which offers an alternative solution to the measurement of expectations towards alcohol consumption that, due to its brevity, is advantageous at the application level.

Recognizing the relevance of evaluation instruments for research on alcohol consumption for planning and evaluating intervention, just as it happens, for example, when seeking psychological well-being (Freire, Ferradás, Núñez, & Valle, 2017). Despite being considered a population at risk of alcohol consumption, university students continue to be in a secondary position with

respect to the development and / or adaptation of assessment instruments (when compared with other populations such as adolescents or adults), being few studies that analyze the psychometric properties of instruments frequently used with other populations (Conde, Giménez, & Cremonte, 2018).

This paper describes the adaptation and validation of the Alcohol Expectancy-Adolescent Questionnaire (Stein et al., 2007) to Portuguese college students. This short scale is of interest for screening, because it is possible to include such items in a protocol including other factors also relevant in designing alcohol abuse reduction programs. There are also some authors that defend the use of short-scale forms in order to reduce the response bias, response omission, subject's fatigue (Fioravanti-Bastos, Cheniaux, & Landeira-Fernandez, 2011; Schmitt & Stults, 1985; Whitman, Kachali, Roger, Vargo, & Seville, 2013).

METHOD

Participants

A sample of 317 Portuguese freshman-year college students (from 17 to 54 years of age; $Mdn = 18$) selected from a public university in the north of Portugal using convenience sampling, took part in this study. Important to refer that this region of the country is mainly rural with a population with low sociocultural level. As it was mentioned in the introduction this sample was deliberately selected with the inclusion criteria of being first-year university students. The students commonly took courses in three main scientific areas: 27.6% were from economics, 34.6% were from courses of sciences and technology and 37.6% from social sciences and humanities. Except engineering courses with 5 years (300 ECTS), all the other courses had 3-4 years (180 or 240 ECTS). The majority of the students were women (71.7%). Their parents' education was: 46.7% of mothers had a primary education, 28.9% secondary and 13.7% higher education, while 63.8% of fathers had a primary education, 23.5% secondary and 12.7% had a higher education. Only 8.7% of students were employed part or full-time. In this sample, 87.3% of the students said they currently drank, and had started drinking when they were 10 to 20 years old ($M=15.84$, $SD=1.29$).

Instruments

A sociodemographic questionnaire was used to collect general personal information (age, gender, and parent education), previous student academic background (GPA – grade point average, retention in primary or high school) and alcohol consumption (age of first use of alcohol, type of drink and frequency). GPA is calculated combining the weighted average of three years of secondary school and the achievement at one or more specific examinations in function of the courses. The admission at Portuguese universities is based on a system of *numerus clausus*, which means that every year the Ministry of Education published the number of study places available, and the students are ranked on their grade point average (GPA) to access to limited places.

The *Alcohol Expectancy Questionnaire Adolescent, Brief* (AEQ-AB; (Stein et al., 2007) was used. The adaptation to Portuguese students followed the international recommendations of the International Test Commission (2005). This version includes seven items, each of which represents one of the seven scales in the original questionnaire: (1) global positive changes, (2) changes in social behavior, (3) improved cognitive and motor abilities, (4) sexual enhancement, (5) cognitive and motor impairment, (6) increased arousal, and (7) relaxation and tension reduction. The students rated the items on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Four items (Items 1, 3, 4, 7; Cronbach α = 0.49) reflect positive alcohol expectancies (alcohol has powerful positive effects, makes a person think better, improves sex, and helps a person relax), and 3 items (Items 2, 5, 6; Cronbach α = 0.51) reflect negative effects on cognition and physical status, as well as potential negative effects on relationships (Stein et al., 2007). The Portuguese version was translated from the original considering the Spanish version (Gázquez et al., 2015). In Spain, confirmatory factor analysis also found two factors, but the Cronbach's α was still low for both, .66 and .48 for first and second factors, respectively.

Data collection

Permission had been requested from the University and the corresponding Research Ethics Committee. The data were collected from the students 6-8 weeks after they started their freshman term. The instruments were administered in a classroom context with the professor's consent. The contents of the questionnaire and study

objectives were explained to the students, as well as the confidentiality of the data and filled in the required informed participation consent form. Only freshmen at the university for the first time were invited to participate in this study.

Data analysis

All statistical analysis were performed with R (R Core Team, 2017) and Rstudio (RStudio Team, 2017). The descriptive statistics were obtained with *skimr* package (Rubia, Zhu, Ellis, Waring, & Quinn, 2017). The CFA analysis was conducted with the *lavaan* package (Rosseel, 2012) using the Weight Least Squares Means and Variances (WLSMV) estimation method, which is indicated for nonlinear response scales. The reliability estimates, and measurement invariance were calculated with the *semTools* package (semTools Contributors, 2016), the Pearson's correlations were calculated with the *psych* package (Revelle, 2017).

For construct validity, confirmatory factor analysis (CFA) was conducted to verify whether the two-factor structure proposed showed adequate fit to the sample. We used the GFI (goodness-of-fit index), χ^2/df (ratio of chi-square and degrees of freedom), CFI (comparative fit index), TLI (Tucker Lewis index), and the RMSEA (root mean square error of approximation). Model fit was considered good if the CFI and GFI were above .9 and RMSEA was below .08 (Byrne, 2016; Hoyle, 2012; Marôco, 2014; McDonald & Ho, 2002).

Convergent validity was analyzed by composite reliability (CR) and average variance extracted (AVE), estimated as described in Fornell and Larcker (1981). $AVE \geq .5$ and $CR \geq .7$ were considered indicative of the constructs' convergent validity and internal consistency (Hair, Black, Babin, & Anderson, 2009). Discriminant validity, checking whether the items representing one dimension are not strongly correlated with another (Marôco, 2014), can be calculated as (Fornell & Larcker, 1981; Marôco, 2014): for two factors x and y , if AVE_x and $AVE_y \geq \rho^2_{xy}$ (squared correlation between factors x and y) there is evidence of discriminant validity. Internal consistency was calculated with the Cronbach's alpha coefficient (α) and with the omega (ω) coefficient for each factor.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

RESULTS

Starting with the factor analysis of the items, the two-factor model's fit to the data was unacceptable, since two items (Items 5 and 6) of the *negative* factor did not have acceptable loadings (Table 1), and loading on Item 5 was negative. Taking a factor formed by Items 5 and 6, this is highly correlated ($Cov_{(Pos, Neg)} = .99$) with a positive factor, showing multicollinearity. To solve this problem, we proposed a reduced version with one *positive* factor which had excellent fit ($\chi^2(6) = 10.262$, $p = .114$, $N = .317$, $CFI = .998$, $GFI = .997$, $RMSEA = .047$, $TLI = .994$). The CFI, TLI and GFI were over .95 with RMSEA below .05 (Marôco, 2014). With this solution, the factor weight of all items was above .63, except for Item 2 (.27), as shown in Table 1.

Table 1. Loadings of AEQ-AB items in a single factor

Items	Loading
Alcohol generally has powerful positive effects on people (makes a person feel good or happy; future seems brighter).	.803
Alcohol can help or hurt how well a person gets along with others (makes people want to have fun together; makes people mean to other).	.265
Alcohol helps people think better and helps coordination (people understand things better; can do things better).	.633
Alcohol improves sex (more enjoyable; feel more romantic or sexual; makes it easier to have sex).	.714
Alcohol hurts how people think and it hurts their coordination (run into things, act silly, have a hangover).	-.238
Alcohol makes a person feel stronger and more powerful (easier to fight, speak in front of others, stand up to others).	.648
Alcohol helps a person relax, feel less tense, and can keep a person's mind off of mistakes at school or work.	.776

Convergent validity may be observed in a CR of .82, which was good for the positive dimension and a nearly acceptable AVE (.45). These results suggest evidence of acceptable convergent validity for the AEQ-AB, demonstrating that the items contained within the factor are related to each other. Regarding internal consistency, Cronbach's α was .79, suggesting very good reliability, with a McDonald's ω of .79.

To detect whether the same one-factor model holds true for each gender (Table 2), a group of nested models with equivalence indicators is needed (Marôco, 2014). Full-scale invariance was supported by the $\Delta\chi^2$ criterion (Satorra & Bentler, 2001), and results supported structural invariance between genders.

Table 2. Model comparison between gender

Model	χ^2	df	χ^2/df	$\Delta\chi^2$	p
Configural	55.568	14	3.97	-	-
Loadings	74.607	19	3.93	10.92	.05
Intercepts	56.277	35	1.61	-20.61	.99
Means	66.505	36	1.85	1.28	.26

For criterion validity, several variables were selected. Table 3 shows the descriptive statistics as well as the correlation coefficients with the score on the six items retained (total positive alcohol expectancy).

Table 3. Correlation coefficients with positive alcohol expectancy score

Variables	N	Min-Max	M	SD	r
Total Positive Alcohol Expectancy	318	6 - 25	16.08	4.06	-
Age	317	17 - 54	19.64	5.20	-.25***
Age first consumption	213	10 - 12	15.83	1.29	-.22**
GPA	254	11 - 18	14.81	1.40	.15*
Wine	315	1 - 4	1.99	.91	.28*** a)
Beer	320	1 - 5	1.54	1.09	.34*** a)
Liquor	322	1 - 4	2.07	.90	.45*** a)

Note: a) Spearman's r; * $p < .05$; ** $p < .01$; *** $p < .001$

Results show that the oldest students and students drinking alcohol from early ages had the lowest

expectancy of positive effects of the use of alcohol. With regard to academic performance, freshmen with a high GPA showed strong expectancies for the positive effects of alcohol. These younger students may have been having their first encounter with alcohol consumption at this stage. Positive correlations have been observed between positive alcohol expectancy and consumption levels (wine, beer and liquor).

DISCUSSION

The impact of alcohol consumption on adolescents and college students is recognized and needs to be addressed by higher education institutions (Araújo & Gomes, 1998; Chau & Saravia, 2016; Ferreira et al., 2014; Gázquez et al., 2015). The literature suggests the effect of positive expectancies of alcohol in alcohol abuse, so preventive programs reducing positive alcohol expectancy need to be implemented (Silva & Tucci, 2015). To support those initiatives, screening and assessment of alcohol consumption and abuse are important, this recommends taking alcohol consumption with other personal and contextual variables, which require short-form scales in order to reduce the bias response, missing values, and the less time-consuming.

Validation of an adaptation of the Alcohol Expectancy-Adolescent Questionnaire (Brown, Christiansen, & Goldman, 1987) brief version (Stein et al., 2007) for Portuguese college students was partially achieved. In line with the Spanish study (Gázquez et al., 2015), several difficulties were observed in Factor 2 concerning the negative expectancies of alcohol. The two-factor structure did not fit and the strong correlation between positive and negative factors suggested a single general factor. In this case, Item 5 (*Alcohol hurts how people think and hurts their coordination (run into things, act silly, have a hangover)*) was eliminated during CFA to improve the model's fit. Similar to the results for the Spanish version, this was the most problematic item. The other two items on the negative factor (Item 2 and Item 6) were added to the general *positive* factor, even Item 2 with low loading. These data suggest that positive expectancies are more consolidated and normalized in interpersonal relationships in adolescents and young students, and screening can be done without the items representing the negative feelings and expectancy for

alcohol consumption. In line with the data obtained by other authors in the adaptation of other instruments such as the Expectancy Questionnaire (Camacho et al., 2013), and in order to clarify the weight of negative expectations, it would be necessary to tackle this limitation by carrying out cutting longitudinal studies, to check if these are directly related to the effects of alcohol after consumption.

Our data confirmed the invariance of measurement of a single-factor AEQ by gender, and high levels of internal consistency. These results point to a general factor structure, even though one item had to be excluded. Concerning the validity criterion, positive and negative correlations were found depending on the nature of the variables considered. For example, a negative correlation was found between subject age and age of first consumption (older students or long-time consumers were not influenced by positive alcohol expectancies), and positive correlations were found between positive expectancies and amount of alcohol consumed (wine, beer and liquor).

In conclusion, further studies are necessary to find out whether this screening instrument should combine positive and negative alcohol expectancies in adolescents and young adults. Such complementary studies may be justified to overcome some limitations of the present study. First, sampling based on students who are in the same class does not assure good representation of all college students. We do not know if students who fail their subjects have different patterns of alcohol consumption or if their alcohol expectancies are more or less positive. Secondly, if a short version of the instrument is required in a survey protocol with more variables to be evaluated, this one does not assess the negative expectancies. If such expectancies are relevant for defining young-adult health education programs, for example to increase coping strategies and self-regulation in drinking situations, some improvements are still necessary. Two strong findings obtained in our study can be highlighted considering a well known international scale (Stein et al., 2007). The first one was the single-factor solution that seems enough to measure the general alcohol-related expectations, namely when in Portuguese culture the positive expectations are more integrated in the social behavior and when a positive and a negative factors (presented in the original version of this scale) can be understand as necessarily negative correlated. A

second strength was the measurement invariance assured, that wasn't tested in other studies of the same construct in the Portuguese higher education students, which permits to compare genders and consider other student's subgroups, as for example age, leaving home, or scientific area.

Conflict of Interest

The authors declares that he/she has no conflict of interest.

Funding

This work is funded by CIEd – Research Centre on Education, projects UID/CED/1661/2013 and UID/CED/1661/2016, Institute of Education, University of Minho, through national funds of FCT/MCTES-PT. Joana R. Casanova received funding from the Portuguese Foundation for Science and Technology (FCT) as a Doctoral Grant, under grant agreement number SFRH/BD/117902/2016.

Acknowledgments

Financing of the Ministry of Education, Culture and Sport for mobility stays (Reference: PRX17 / 00365 and Reference: CAS17 / 00197) to M^a del Carmen Pérez Fuentes and M^a del Mar Molero Jurado, respectively.

REFERENCES

- Araújo, L. B., & Gomes, W. B. (1998). Adolescência e as expectativas em relação aos efeitos do álcool. *Psicologia: Reflexão e Crítica*, 11(1), 05-33. doi:10.1590/S0102-79721998000100002
- Bewick, B. M., Mulhern, B., Barkham, M., Trusler, K., Hill, A. J., & Stiles, W. B. (2008). Changes in undergraduate student alcohol consumption as they progress through university. *BMC Public Health*, 8, 163.
- Brown, S. A., Christiansen, B. A., & Goldman, M. S. (1987). The Alcohol Expectancy Questionnaire: An instrument for the assessment of adolescent and adult alcohol expectancies. *Journal of Studies on Alcohol*, 48(5), 483-491. doi:10.15288/jsa.1987.48.483
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). New York, NY, United States of America: Routledge. doi:10.4324/9781315757421
- Camacho, L., Mezquita, L., Ibáñez, M. I., Moya, J., Villa, H., Viruela, A. M., & Ortet, G. (2013). Spanish adaptation of the Expectancy Questionnaire (EQ) about alcohol effects in adolescents. *Psicothema*, 25(4), 529-535. doi:10.7334/psicothema2012.354
- Carbia, C., Corral, M., García-Moreno, L. M., Cadaveira, F. & Caamaño-Isorna, F. (2016). Early alcohol use and psychopathological symptoms in university students. *Psicothema*, 28(3), 247-252. doi:10.7334/psicothema2015.251.
- Carbonero, M. A., Martín-Antón, L. J., & Feijó, M. (2010). Las creencias irracionales, en relación con ciertas conductas de consumo en adolescentes [Irrational beliefs in relation to certain behaviors in adolescent]. *European Journal of Education and Psychology*, 3(2), 287-298.
- Chau, C., & Saravia, J. C. (2016). Conductas de salud en estudiantes universitarios Limeños: Validación del CEVJU [Health Behaviors in University Students from Lima: Validation of CEVJU]. *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*, 41(1), 90-103.
- Conde, K., Giménez, P. V., & Cremona, M. (2018). Características de los Instrumentos de Tamizaje del Trastorno por Uso de Alcohol en Jóvenes Universitarios de Argentina. *Clínica y Salud*, 29(1), 27-33. https://doi.org/10.5093/clysa2018a5
- Davoren, M. P., Cronin, M., Perry, I. J., & O'Connor, K. (2016). Alcohol consumption among university students: A typology of consumption to aid the tailoring of effective public health policy. *BMJ Open*, 6(11), e011815. doi:10.1136/bmjopen-2016-011815
- Davoren, M. P., Dahly, D., Shiley, F., & Perry, I. J. (2017). Alcohol consumption among university students: A latent class analysis. *Drugs: Education, Prevention and Policy*, 1-9. doi:10.1080/09687637.2017.1290787
- Devos-Comby, L. & Lange, J.E. (2008). Standardized measures of alcohol-related problems: A review of their use among college students. *Psychology of Addictive Behaviors*, 22(3), 349-61. doi:10.1037/0893-164X.22.3.349
- Ferreira, J. A., Martins, J. S., Coelho, M. S., & Kahler, C. W. (2014). Validation of Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ): Portuguese version. *Spanish Journal of Psychology*, 17, 1-8. doi:10.1017/sjp.2014.74
- Fioravanti-Bastos, A. C. M., Cheniaux, E., & Landeira-Fernandez, J. (2011). Development and validation of a short-form version of the Brazilian state-trait anxiety inventory. *Psicologia: Reflexão E Crítica*, 24(3), 485-494. doi:10.1590/S0102-79722011000300009
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18, 39-50. doi:10.2307/3151312
- Foxcroft, D. R., Moreira, M. T., Almeida, N. M., & Smith, L.A. (2015). Social norms information for alcohol misuse in university and college students. *Cochrane Database of Systematic Reviews*, 12, CD006748. doi:10.1002/14651858.CD006748.pub2
- Freire, C., Ferradás, M.M., Núñez, J.C., & Valle, A. (2017). Estructura factorial de las Escalas de Bienestar Psicológico de Ryff en estudiantes universitarios [The factorial structure of Ryff's Psychological Well-Being Scales in university students]. *European Journal of Education and Psychology*, 10(1), 1-8. doi:10.1016/j.ejeps.2016.10.001
- García-Fernández, J. M., Vicent, M., Inglés, C. J., González, C., & Sanmartín, R. (2017). Relación entre el perfeccionismo socialmente prescrito y

- la conducta agresiva durante la infancia tardía [Relationship between socially prescribed perfectionism and aggressive behaviour during late childhood]. *European Journal of Education and Psychology*, 10(1), 15-22.
- Gázquez, J. J., Pérez-Fuentes, M. C., Molero, M. M., & Simón, M. M. (2016). Búsqueda de sensaciones e impulsividad como predictores de la agresión en adolescentes [Sensation seeking and impulsivity as predictors of aggression in adolescents]. *Psychology, Society, & Education*, 8(3), 243-255.
- Gázquez, J. J., Pérez-Fuentes, M. C., Molero, M. M., Barragán, A. B., Martos, A., & Sánchez-Marchán, C. (2016). Drug use in adolescents in relation to social support and reactive and proactive aggressive behavior. *Psicothema*, 28(3), 318-322. doi:10.7334/psicothema2015.327
- Gázquez, J. J., Pérez-fuentes, M. del C., Molero, M. del M., Martos, Á., Cardila, F., Barragán, A. B., ... Garzón, A. (2015). Adaptación Española del Cuestionario de Expectativas del Alcohol en Adolescentes, versión breve. *European Journal of Investigation in Health, Psychology and Education*, 5(3), 357-369. doi:10.1989/ejihpe.v5i3.138
- Gázquez, J. J., Pérez-fuentes, M. del C., Molero, M. del M., Martos, Á., Cardila, F., Barragán, A. B., ... Garzón, A. (2015). Adaptación Española del Cuestionario de Expectativas del Alcohol en Adolescentes, versión breve [Spanish adaptation of the Alcohol Expectancy-Adolescent Questionnaire, Brief]. *European Journal of Investigation in Health, Psychology and Education*, 5(3), 357-369. doi:10.1989/ejihpe.v5i3.138
- Gázquez, J. J., Pérez-fuentes, M. del C., Molero, M. del M., Martos, Á., Cardila, F., Barragán, A. B., ... Garzón, A. (2015). Adaptación Española del Cuestionario de Expectativas del Alcohol en Adolescentes, versión breve. *European Journal of Investigation in Health, Psychology and Education*, 5(3), 357-369. doi:10.1989/ejihpe.v5i3.138
- Greenbaum, P., Brown, E., & Friedman, R. (1995). Alcohol expectancies among adolescents with conduct disorder: Prediction and mediation of drinking. *Addictive Behaviors*, 20(3), 321-333.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ, United States of America: Prentice Hall.
- Hoyle, R. H. (Ed.). (2012). *Handbook of structural equation modeling*. New York, NY, United States of America: The Guildford Press.
- International Test Commission. (2005). *ITC guidelines for translating and adapting tests*. Retrieved from <http://www.intestcom.org/upload/sitefiles/40.pdf>
- Lang, K., Murphy, J. G., Monahan, C. J., Dennhardt, A. A., Skidmore, J. R., & McDevitt-Murphy, M. E. (2012). The role of positive consequences of alcohol in the relation between sensation seeking and drinking. *Addiction Research & Theory*, 20(6), 504-510. doi:10.3109/16066359.2012.667854
- Leigh, B. C., & Stacy, A. W. (1993). Alcohol outcome expectancies: Scale construction and predictive utility in higher order confirmatory models. *Psychological Assessment*, 5(2), 216-229. doi:10.1037/1040-3590.5.2.216
- Marôco, J. (2014). *Análise de equações estruturais: Fundamentos teóricos, software & aplicações* (2nd ed.). Pêro Pinheiro, Portugal: ReportNumber.
- McDonald, R. P., & Ho, M.-H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64-82. doi:10.1037/1082-989X.7.1.64
- Medrano, L. A., Moretti, L., & Ortiz, A. (2015). Measure of Academic Engagement in University Students. *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*, 40(2), 114-123.
- Merrill, J. E., Kenney, S. R., & Barnett, N. P. (2017). A time-varying effect model of the dynamic association between alcohol use and consequences over the first two years of college. *Addictive Behaviors*, 73, 57-62. doi:10.1016/j.addbeh.2017.04.022
- Mora-Ríos, J., Natera, G., & Juárez, F. (2005). Expectativas relacionadas con el alcohol en la predicción del abuso en el consumo de jóvenes [Alcohol-Related Expectations in Predicting Abuse in Youth Consumption]. *Salud Mental*, 28(2), 82-90.
- O'Hare, T. (1997). Measuring problems drinking in first time offenders: Development and validation of the college alcohol problem scale (CAPS). *Journal of Substance Abuse and Treatment*, 14(4), 383-387.
- Pérez-Fuentes, M. C., Molero, M. M., Carrión, J. J., Mercader, I., & Gázquez, J. J. (2016). Sensation-seeking and impulsivity as predictors of reactive and proactive aggression in adolescents. *Frontiers in Psychology*, 7, 1447. doi:10.3389/fpsyg.2016.01447
- Pilatti, A., Godoy, J., & Brussino, S. (2011). Expectativas hacia el alcohol y consumo de alcohol en niños y adolescentes de Argentina [Alcohol expectancies and alcohol use among children and adolescents from Argentina]. *International Journal of Psychology and Psychological Therapy*, 11(1), 13-22.
- Polak, M. A., & Conner, T. S. (2012). Impairments in daily functioning after heavy and extreme episodic drinking in university students. *Drug and Alcohol Review*, 31(6), 763-769. doi:10.1111/j.1465-3362.2012.00429.x
- R Core Team. (2017). R: A language and environment for statistical computing (version 3.4.1) [Computer software]. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <https://www.r-project.org/>
- Read, J. P., Kahler, C. W., Strong, D. R., & Colder, C. R. (2006). Development and preliminary validation of the young adult alcohol consequences questionnaire. *Journal of Studies on Alcohol*, 67(1), 169-77.
- Reich, R. R., Below, M. C., & Goldman, M. S. (2010). Explicit and implicit measures of expectancy and related alcohol cognitions: A meta-analytic comparison. *Psychology of Addictive Behaviors*, 24(1), 13-25. doi:10.1037/a0016556
- Revelle, W. (2017). psych: Procedures for psychological, psychometric, and personality research (R package version 1.7.8) [Computer software]. Evanston, IL: Northwestern University.

- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1-21.
- RStudio Team. (2017). RStudio: Integrated development for R (version 1.1.345) [Computer software]. Boston, MA, USA: RStudio, Inc.
- Rubia, E. A. de la, Zhu, H., Ellis, S., Waring, E., & Quinn, M. (2017). skimr: skimr (R package version 0.9000) [Computer software].
- Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, 66(4), 507-514. doi:10.1007/BF02296192
- Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative Project on early detection of persons with harmful alcohol consumption - II. *Addiction*, 88(6), 791-804.
- Schmitt, N., & Stults, D. M. (1985). Factors defined by negatively keyed items: The result of careless respondents? *Applied Psychological Measurement*, 9(4), 367-373. doi:10.1177/014662168500900405
- semTools Contributors. (2016). semTools: Useful tools for structural equation modeling (R package version 0.4-14) [Computer software].
- Silva, É. C., & Tucci, A. M. (2015). Intervenção breve para redução do consumo de álcool e suas consequências em estudantes universitários brasileiros. *Psicologia: Reflexão e Crítica*, 28(4), 728-736. doi:10.1590/1678-7153.201528410
- Stamates, A. L., Lau-Barraco, C., & Linden-Carmichael, A. N. (2016). Alcohol expectancies mediate the relationship between age of first intoxication and drinking outcomes in college binge drinkers. *Substance Use & Misuse*, 51(5), 598-607. doi:10.3109/10826084.2015.1126745
- Stein, L. A. R., Katz, B., Colby, S. M., Barnett, N. P., Golembeske, C., Lebeau-Craven, R., & Monti, P. M. (2007). Validity and Reliability of the Alcohol Expectancy Questionnaire-Adolescent, Brief. *Journal of Child & Adolescent Substance Abuse*, 16(2), 115-127. doi:10.1300/J029v16n02_06
- Stock, C., Mcalaney, J., Pischke, C., Vriesacker, B., Van Hal, G., Akvardar, Y., Orosova, O., Kalina, O., Guillen-Grima, F., & Bewick, B.M. (2014). Student estimations of peer alcohol consumption: Links between the Social Norms Approach and the Health Promoting University concept. *Scandinavian Journal of Social Medicine*, 42(5), 52-59. doi:10.1177/1403494814545107
- Suárez, C., Del Moral, G., Martínez, B., John, B., & Musitu, G. (2016). El patrón de consumo de alcohol en adultos desde la perspectiva de los adolescentes [Adult pattern of alcohol use as perceived by adolescents]. *Gaceta Sanitaria*, 30(1), 11-17. doi:10.1016/j.gaceta.2015.06.004
- Tondowski, C. S., Feijó, M. R., Silva, E. A., Gebara, C. F. P., Sanchez, Z. M., & Noto, A. R. (2014). Padrões intergeracionais de violência familiar associada ao abuso de bebidas alcoólicas: Um estudo baseado em genogramas. *Psicologia: Reflexão e Crítica*, 27(4), 806-814. doi:10.1590/1678-7153.201427421.
- White, H. R., & Labouvie, E. W. (1989). Towards the assessment of adolescent problem drinking. *Journal of Studies on Alcohol*, 50(1), 30-37.
- Whitman, Z. R., Kachali, H., Roger, D., Vargo, J., & Seville, E. (2013). Short-form version of the Benchmark Resilience Tool (BRT-53). *Measuring Business Excellence*, 17(3), 3-14. doi:10.1108/MBE-05-2012-0030
- Wicki, M., Kuntsche, E., & Gmel, G. (2010). Drinking at European universities? A review of students' alcohol use. *Addictive behaviors*, 35(11), 913-924. doi:10.1016/j.addbeh.2010.06.015
- World Health Organization (2014a). *Health for the World's Adolescents. A second chance in the second decade*. Ginebra: World Health Organization.
- World Health Organization (2014b). *Global Status Report on Alcohol and Health*. Geneva: World Health Organization.