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RESEARCH ON TRANSLATIONS OF TESTS

Validation of the Spanish Version of the Young Adult Alcohol Consequences Questionnaire (S-YAACQ)

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The present work was aimed at analyzing the psychometric properties of a Spanish version of the 48-item Young Adult Alcohol Consequences Questionnaire (YAACQ) by applying the item response theory. Participants were 247 college students (75.7% female) who reported drinking alcohol within the last 3 months. The 48-item YAACQ was translated into Spanish and back to English. The psychometric properties of the Spanish YAACQ (S-YAACQ) were analyzed applying the Rasch model, as well as group difference and correlational analyses. Factor structure of the S-YAACQ was analyzed using confirmatory factor analysis. The verification of the global fit of the data showed adequate indexes for persons and items. The reliability estimates for the items and the persons were both high. Scores on the S-YAACQ were strongly correlated with scores on the Spanish versions of the AUDIT and the RAPI and with frequency of binge drinking. Five of 48 items showed different item functioning (DIF) as a function of gender. These biases were in opposite directions, resulting in DIF cancellation. The item severity continuum was largely similar to that found with the Spanish brief YAACQ and to that found in U.S. and Dutch samples. Overall, results from the present study suggest that this translated full version is better suited than the brief YAACQ for the identification of youth who are experiencing problems with alcohol. Findings suggest that the Spanish version of the full YAACQ may be used to identify a broad diversity of alcohol-related problems in Spanish-speaking college students.

Keywords: alcohol problems, college students, Rasch model, measurement

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Between 30 and 60% of U.S. college students drink heavily (Cranford, McCabe, & Boyd, 2006; Hingson, Edwards, Heeren, & Rosenbloom, 2009). The problem of heavy drinking is not limited just to those students in the United States; these patterns have been observed in students around the world, including South America (Dantzer, Wardle, Fuller, Pampalone, & Steptoe, 2006; Karam, Kypri, & Salamoun, 2007; Pilatti, Caneto, Garimaldi, Vera, & Pautassi, 2014; Pilatti, Urrizaga, Chincolla, & Cupani, 2014). Students exhibiting such drinking patterns are at greater risk for a

myriad of negative consequences (Hingson et al., 2009; Masten, Faden, Zucker, & Spear, 2009), which may vary in severity from relatively mild (e.g., headaches, sick stomach, hangovers) to quite severe (e.g., symptoms of physiological dependence, drunk driving; Devos-Comby & Lange, 2008). Accurate and efficient assessment of these consequences is important, allowing those students at greatest risk to be identified and targeted for intervention.

There are several measures that assess negative drinking consequences (Devos-Comby & Lange, 2008). Most of these instru-

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ments were developed in English-speaking countries and are mainly available only in this language. However, two measures have been translated into Spanish. A Spanish version of the Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) has been used to assess alcohol-related consequences among older adolescents from Spain (ages 16–18; Lopez-Nuñez, Fernández-Artamendi, Fernández-Hermida, Campillo Álvarez, & Secades-Villa, 2012) and Hispanic college students in United States (Orona, Blume, Morera, & Perez, 2007). This translation of the RAPI also has been tested in a sample of Argentinean high school students (ages 13–18; Cremonte, Brandariz, Biscarra, Lichtenberger, & Marconato, 2010). A Spanish version of the Alcohol Use Disorders Identification Test (AUDIT) also has been developed (Rubio Valladolid, Bermejo Vicedo, Caballero Sánchez-Serrano, & Santo-Domingo Carrasco, 1998; Villamil Salcedo, Valencia Collozos, Medina-Mora Icaza, & Juárez García, 2009). Studies support the Spanish versions of these consequence measures as reliable and valid instruments for the detection of alcohol-related problems. Although the Spanish RAPI has been used with late adolescents and emerging adults (Cremonte et al., 2010; López-Núñez et al., 2012; Orona et al., 2007), the Spanish version of the AUDIT has not been examined in young adult or college samples (Rubio et al., 1998; Villamil Salcedo et al., 2009). More importantly, some categories of alcohol-related problems, especially those of particular relevance to college students (e.g., driving under the influence, risky sexual behaviors), are not fully covered by these Spanish language measures. Thus, these instruments provide only a partial assessment of the drinking consequences that college students are most likely to experience (Devos-Comby & Lange, 2008). Given the high prevalence of heavy alcohol use among Spanish-speaking college students (Arrieta Vergara, Díaz Cárdenas, & González Martínez, 2011; Latorres & Huidobro, 2012; Lorenzo, Cajaleón, & Gutiérrez, 2012; Pilatti, Caneto et al., 2014; Pilatti, Urrizaga et al., 2014; Puig-Nolasco, Cortaza-Ramirez, & Pillon, 2011; Salcedo Monsalve, Palacios Espinosa, & Espinosa, 2011), a Spanish-language screening instrument which provides comprehensive coverage of negative alcohol consequences is greatly needed.

The Young Adult Alcohol Consequences Questionnaire (YAACQ; Kahler, Strong, & Read, 2005; Read, Kahler, Strong, & Colder, 2006) is a comprehensive measure that assesses a diverse range of adverse consequences in young adults (Devos-Comby & Lange, 2008). Both the full, 48-item YAACQ and its brief version, the B-YAACQ (Kahler et al., 2005), have been used to measure alcohol problems in U.S. college students (Kahler, Hustad, Barnett, Strong, & Borsari, 2008; Read, Merrill, Kahler, & Strong, 2007) and in the Netherlands (Verster, van Herwijnen, Olivier, & Kahler, 2009). These studies have demonstrated strong psychometric properties for both versions of the YAACQ. The B-YAACQ also was adapted in a sample of Argentinean college students (Pilatti, Read et al., 2014), offering preliminary validation for this version for use in Spanish-speaking college students. In this work, however, the importance of analyzing the psychometric properties of the full YAACQ was highlighted, as this longer version assesses a greater diversity of negative consequences than does the B-YAACQ. Further, although the Spanish B-YAACQ strongly correlated with indices of hazardous alcohol consumption, its association with other standard measures of alcohol problems (e.g., AUDIT) was not analyzed.

Accordingly, in the present article we built on the preliminary results from the Spanish adaptation of the B-YAACQ (Pilatti, Read et al., 2014) and other analyses of YAACQ items (Kahler et al., 2005) to validate a Spanish version of the full 48 item-YAACQ (S-YAACQ). Our specific aims were to: (a) determine item functioning, including gender bias, by applying the Rasch model (one particular IRT model); (b) provide evidence of the validity of the construct of alcohol consequences; (c) examine the factor structure of this Spanish version using Confirmatory Factor Analysis; and (d) provide evidence of concurrent validity by assessing the association between the YAACQ and two other measures of alcohol-related problems (i.e., the AUDIT and the RAPI).

To validate the S-YAACQ, we conducted analyses based in item response theory (IRT). IRT analyses model the response probability of an item as a function of the individual's level in the construct being measured and of the difficulty of the items. In recent years, this approach has been used with increasing frequency in alcohol research (e.g., Cohn, Hagman, Graff, & Noel, 2011; Hagman & Cohn, 2011; Kahler et al., 2005; Saha, Chou, & Grant, 2006; Verster et al., 2009), due to its advantages over classical test theory (Embretson & Reise, 2000; Rupp & Zumbo, 2006).

We conducted this validation in a sample of Argentinean college students, a Spanish-speaking country in which 37% of the costs associated with substance abuse (\$4,477 million) are linked to alcohol consumption (Argentinean Health Department, 2011), and hazardous drinking in college has been identified as a problem (e.g., Pilatti, Read et al., 2014).

Method

Participants

The sample was composed of college students ages 18–24 ($n = 251$; 76.1% female), who reported drinking at least one alcoholic beverage in the last 3 months. Four cases were eliminated because of inconsistencies in their data, thus yielding a final sample of 247 participants (75.7% female) with a mean age of 21.12 ± 1.83 . Of the total sample, 21.3% were between 18 and 19 years old, 33.6% between 20 and 21 years old, and the rest were between 22 and 24 years old. The majority of the students were enrolled in psychology (42%) and foreign language (12%) courses. The other 46% were enrolled in a broad diversity of careers (e.g., engineering, law, biology, economics, human resources).

Measurement Translation

YAACQ. Three expert psychologists who were proficient in English and Spanish, and knowledgeable of the scale's rationale and development, translated the original English version to Spanish. Versions were compared with and subjected to discussion until consensus was reached. A Spanish–English bilingual person, blind to the study's aim, back-translated this version (Spanish to English). All of these experts belonged to the same Argentinian geographic and ethnic community as the present sample. Then, one of the original YAACQ authors (Read) evaluated this English version. Additional changes were performed based on her comments.

Other indicators of alcohol problems. To validate the S-YAACQ against other alcohol consequence measures, we eval-

uated the Spanish versions of two widely used assessments, the RAPI (López-Núñez et al., 2012) and the AUDIT (Rubio et al., 1998). This was to corroborate cultural and conceptual equivalence of these measures (Brislin, 1970). To accomplish this, two members of the research team examined the Spanish versions of the RAPI and the AUDIT. Rare, infrequent words (e.g., words not commonly used in everyday language), and colloquialisms were replaced (e.g., in the RAPI, *tener mal rollo* was replaced by *disgustarte*; *bebas menos* was replaced by *tomes menos*; in the AUDIT, the word *copa* was replaced by *vaso*). Additionally, qualitative interviews (Conrad, 2003) were performed with six college students who were not included in the final sample.

Measures

Hazardous drinking. Two domains of hazardous drinking were assessed. The first of these was the occurrence of drunkenness during the last month, which was assessed with a single, dichotomously scored item (*During the last month: Did you drink alcohol until you felt drunk or intoxicated?*). The second indicator of hazardous drinking was a question about the frequency of heavy episodic (*binge*) drinking in the past 6 months (Courtney & Polich, 2009; Hingson, Heeren, Winter, & Wechsler, 2005). One standard drink was defined as containing 14 g of alcohol (National Institute on Alcohol Abuse & Alcoholism, 2004). Participants were asked to indicate how often in the past 6 months they had consumed the equivalent of 4+/5+ standard drinks (for women/men) in a 2-hr drinking session (Fillmore & Jude, 2011; National Institute on Alcohol Abuse & Alcoholism, 2004). Response options ranged from *never* to *every day or almost every day*. Answers to this question were calculated to represent the number of binge drinking episodes per month.

Spanish Young Adult Alcohol Consequences Questionnaire (S-YAACQ). Negative consequences of drinking alcohol were assessed with the Spanish version of the YAACQ (Read et al., 2006). Using the YAACQ's dichotomous (*yes/no*) response format, participants indicated whether they had experienced any of the 48 drinking consequences in the past year. As noted, the full YAACQ measure consists of eight subscales that load on a single, higher-order factor. Thus, drinking consequences were assessed across the following domains: social/interpersonal (e.g., *While drinking, I have said or done embarrassing things*); academic/occupational (e.g., *The quality of my work or schoolwork has suffered because of my drinking*); risky behavior (e.g., *I have driven a car when I knew I had too much to drink to drive safely*); impaired control (e.g., *I often drank more than I originally had planned*); poor self-care (e.g., *Because of my drinking, I have not eaten properly*); diminished self-perception (e.g., *I have felt badly about myself because of my drinking*); blackout drinking (e.g., *I have had a hangover the morning after I had been drinking*); and physiological dependence (e.g., *I have felt like I needed a drink after I'd gotten up*). Because of the dichotomous scoring structure, the total score reflects the total number of consequences that the individual has experienced in that period. Each of the YAACQ dimensions has shown good reliability ($\alpha = .70$ to $.95$) in previous studies (Read et al., 2006; Read et al., 2007).

Spanish Alcohol Use Disorders Identification Test (S-AUDIT; Rubio et al., 1998). The Spanish version of the AUDIT was used to detect problems related to alcohol consumption. The AUDIT

(Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) is one of the most used measures to assess alcohol problems in adults (Reinert & Allen, 2007) and college students (Devos-Comby & Lange, 2008). It consists of 10 items with an ordinal response scale where seven items are rated on a 5-point scale (where each item can be scored from 0 to 4), and three items are rated on a 3-point scale (scored 0, 2, or 4). A cutoff score of eight is used to identify at-risk drinkers (Cremonte & Cherpitel, 2008; Reinert & Allen, 2007), although different cutoff scores have been proposed to identify at-risk college students with a shorter version of the AUDIT (DeMartini & Carey, 2012). The S-AUDIT has shown adequate reliability of test scores (between $\alpha = .81$ and $\alpha = .86$) in previous studies (Rubio et al., 1998; Villamil Salcedo et al., 2009) and in the present study ($\alpha = .77$).

Spanish version of the Rutgers Alcohol Problem Index (S-RAPI; Lopez-Nuñez et al., 2012). This is a 23-item measure developed to assess alcohol-related problems among adolescents (White & Labouvie, 1989) and college students (Cohn et al., 2011; Devos-Comby & Lange, 2008; Schaus et al., 2009). Similar to the YAACQ, different time periods can be used to frame the occurrence of alcohol problems (e.g., lifetime, last 6 months). Participants were asked to indicate, on a 4-point scale ranging from 0 (*never*) to 3 (*more than five times*), how often they experienced each alcohol related-problem during the last year. The original (Schaus et al., 2009; White & Labouvie, 1989) and the Spanish (Lopez-Nuñez et al., 2012) version of the RAPI showed adequate reliability (between $\alpha = .87$ and $\alpha = .92$). In the present study, reliability values for this instrument were also adequate ($\alpha = .84$).

Procedure

Data were collected via a computerized questionnaire, developed with the LimeSurvey software (license of the National University of Cordoba). Students were recruited through advertisements on social network sites (i.e., Facebook and Twitter) and e-mail lists. The advertisement contained a link to the online survey that included an online consent form. No personally identifying information was collected, however, students were invited to leave their e-mail address in order to be contacted to take part in other, unrelated studies. The online survey was programmed to minimize the likelihood of missing data; participants received electronic prompts for any missed items. Participants did not receive any monetary compensation for their participation.

Statistical Analysis

Descriptive analyses. Student's *t* tests were conducted to examine differences between men and women in the number of alcohol consequences (for the total scale and for each S-YAACQ dimension). Similar analyses were performed to compare participants who engaged in drunkenness episodes within the last month with those students who did not engage in such drinking behavior. Student's *t* tests and Chi-Square tests were conducted to explore differences between binge and nonbinge drinkers. Specifically, participants who endorsed binge drinking in the past 6 months were compared with those who did not report this pattern on the number of alcohol consequences (for the S-YAACQ total scale and subscales) and in the endorsement of each individual item.

Concurrent validity. Correlation analyses were conducted to evaluate the association between the number of alcohol conse-

quences as measured by the S-YAACQ (total scale and subscales) and scores in two other standardized measures of alcohol problems (S-AUDIT and S-RAPI). Additionally, correlations between each of the S-YAACQ scores and the frequency of binge drinking were also examined. Frequency of binge drinking has been linked to deleterious outcomes (Courtney & Polich, 2009; Hingson et al., 2005) and thus, we expected it to correlate strongly with the S-YAACQ. The alpha value was set at $p < .05$ for all analyses.

IRT analyses. The Rasch Model (Rasch, 1960) was applied to the 48 items of the S-YAACQ. The first step was to examine the extent to which the empirically obtained data matched the prediction of the model in order to verify the fit of the data to the model. To pursue this goal, the mean square residual (Mnsq) was computed. Fit of the items to a Rasch model was examined using infit and outfit statistics. INFIT is an internal fit index assessing the fit with regard to proximal parameters while OUTFIT is an external fit index assessing the fit with regard to distal parameters. Values of Mnsq between 0.6 and 1.4 indicate acceptable fit (Wright & Linacre, 1994).

Values provided by the Rasch Model are expressed in logit scale, which is a logistic transformation of the observed scores, with a mean of 0 and standard deviation of 1. These values are called locations instead of scores. A person's location is their natural log odds for endorsing a particular set of items, and an item's location is interpreted as the relative difficulty (i.e., severity) of that item. Because persons and items are measured using a common unit of measurement (logit), it is possible to compare them along the continuum of severity of alcohol-related problems and to determine the probability of each person endorsing each item. The map of persons and items illustrates how person and item locations are plotted on the same continuum: The bottom of the map (negative values) corresponds to the lower estimates (i.e., lower level of severity) of the persons and items, while moving up in the map (positive values) corresponds to higher estimates (i.e., greater level of severity). Items with greater difficulty (i.e., more severe) are likely to be endorsed only by individuals whose alcohol involvement is more severe (i.e., those who have higher total scores), while less severe items are more commonly endorsed by more people, including those with low total scores.

Reliability of persons and items and separation indices for persons and items were also estimated: high reliability of persons and items indicate that the location of persons and items on the continuum could be reproduced foreseeably (Andrich, 1982). Separation indicates how well the measure is differentiating the person severity and item difficulty: values of two or greater are considered adequate indices of separation (Linacre, 2008).

The Rasch model also provides information regarding differential item functioning (DIF) as a function of individual difference characteristics. In the present study, DIF analysis was conducted to explore possible differences in the severity estimates independently obtained for women and men. Items function similarly across women and men if each of the severity estimates fall within a 95% confidence interval. Significant differences between the independently estimated severity parameters for a given item indicate that a particular item is functioning differently by gender.

Confirmatory and reliability analyses. A confirmatory factor analysis (CFA) was conducted with Mplus to examine the factor structure of this S-YAACQ. Specifically, the model pro-

posed eight intercorrelated factors in which items from the S-YAACQ load on their individual subscale factor. Different indices of goodness of fit were examined: Chi square (χ^2), the root mean square error of approximation (RMSEA), the Tucker-Lewis index (TLI), and the Comparative Fit Index (CFI). Chi-square with a nonsignificant value indicates an acceptable fit; however, this index is very sensitive to sample size, and therefore other indices of fit were also considered. An RMSEA between 0 and 0.05 indicates a good fit and values between 0.05 and 0.08 as acceptable fit. CFI and TLI values of greater than 0.95 generally are interpreted as indicating strong fit and values greater than 0.90 are interpreted as an acceptable fit (Hu & Bentler, 1995).

Results

Descriptive Statistics

Hazardous drinking. The majority of the students (66.8%; $n = 165$) had engaged in at least one binge drinking episode in the last 6 months. Specifically, 17.4% ($n = 43$) reported having engaged in binge drinking less than once a month, 15.8% ($n = 39$) once a month, 17.8% ($n = 44$) between two and three times a month, and 15.8% ($n = 39$) between one and four times a week. Twenty-two percent ($n = 55$) of participants reported they had experienced at least one episode of drunkenness during the last month.

Alcohol consequences. The five most commonly endorsed drinking consequences on the S-YAACQ were: *I have had a hang-over (headache, sick stomach) the morning after I had been drinking* (84.6%); *I often drank more than I originally had planned* (67.6%); *While drinking, I have said or done embarrassing things* (66.8%); *I have felt very sick to my stomach or thrown up after drinking* (63.2%); and *I have awakened the day after drinking and found that I could not remember a part of the evening before* (50.2%).

S-YAACQ scores can range between 0 and 48. In the present study, scores ranged between 0 (3.2%, $n = 8$) and 34 (0.4%, $n = 1$). Notably, close to 10% of the sample (8.8%) indicated they experienced between 23 and 34 negative consequences. Scores on the S-AUDIT ranged between 0 (.8%, $n = 2$) and 27 (.4%, $n = 1$), with an average of 6.10 ± 4.20 alcohol problems. The mean number of drinking consequences measured by the S-RAPI was 5.20 ± 5.79 , with scores ranging between 0 (20.6%, $n = 51$) and 35 (.4%, $n = 1$).

IRT analyses: Rasch Model

Fit analyses. The verification of the global fit of the data showed adequate indices for persons and items (see Table 1). Detailed inspec-

Table 1
Fit Indexes of the Model

	Measure	Error	INFIT	OUTFIT	Separation	Reliability
Persons						
Mean	-2.02	.52	.99	1.03	2.44	.86
SD	1.45	0.19	.25	1.15		
Items						
Mean	0.0	0.24	1.01	1.19	6.28	.98
SD	1.64	0.11	.10	1.35		

Note. INFIT = an internal fit index assessing the fit with regard to proximal parameters; OUTFIT = an external fit index assessing the fit with regard to distal parameters.

tion of the items revealed that all items showed adequate infit values (ranging from 0.82 to 1.28) and 41 items showed adequate outfit values (ranging from 0.61 to 1.35). Seven of the 48 items (*I have felt anxious after cutting down on drinking, I have spent too much time drinking, the quality of my schoolwork has suffered, I have driven a car when I knew I had too much to drink to drive safely, I have passed out from drinking, I have felt like I needed a drink after I'd gotten up, I have received a lower grade*) had inadequate outfit indices (two values were lower than 0.6 and five were greater than 1.3). These results are presented in Table 2.

Item map. The map of persons and items shows their distribution on the continuum of alcohol negative consequences (see Figure 1). Persons ($M = -2.02$ logit) were located in a lower level of severity than the items ($M = 0.0$ logit) indicating these 48 items are measuring a higher level of severity than the typical level of alcohol-related problems usually found in college students with these drinking patterns. Drinking consequences least frequently reported by these college students were those related to intuitively more serious and longer-term consequences. These items mostly belonged to the psychological dependence and academic/occupational impairment subscales. All of these items were located at the higher level of severity on the continuum. In contrast, items assessing short-term mild consequences (e.g., *While drinking, I have said or done embarrassing things; I have had a hangover the morning after I had been drinking; I have felt very sick to my stomach or thrown up after drinking*) were located at the lower end of the continuum which corresponds to the lower level of severity.

Information function. The reliability estimate of the items (0.98) and the reliability estimate for the persons (0.86) were both high, and separation indices for items and persons were 6.28 and 2.44, respectively. The lack of uniformity on the estimated error for the different items suggests that these 48 items are not measuring adverse drinking consequences with similar precision. Specifically, items at the lower end of the severity continuum were estimated with more precision than items located at the higher end of the continuum. Estimates for each of the 48 items and their associated standard errors are presented in Table 2. Table 3 shows the estimated level of severity (expressed in logits) that is expected to be associated with different ranges of raw scores on the S-YAACQ. These results show the precision with which these college students were measured. Specifically, 3.2% of the sample fell within the range of scores between $-\infty$ and -6.58 logits, which corresponded to a raw score of zero, with an estimated error of 1.89, and 28.2% fell within the range of values between -5.23 and -3.03 logits, which corresponded to raw scores between 1 and 5, with a mean estimated error of .76. Twenty-four percent of the sample fell within the range of values between -2.74 and -1.88 , which corresponded to raw scores between 6 and 10, with a mean estimated error of .47. Nineteen percent of the sample fell within the range of values between -1.71 and -1.11 , which corresponded to raw scores between 11 and 15, with a mean estimated error of .39. Close to 12% fell within the range of values between -0.98 and -0.47 , which corresponded to raw scores between 16 and 20, with a mean estimated error of .35. Thirteen percent fell within the range of values between -0.35 and -0.74 , which corresponded to raw scores between 21 and 30, with a mean estimated error of .35. The rest of the sample was located between the values of -0.35 and 1.29 logits, which corresponded to raw

scores between 21 and 34, with a mean estimated error of .36. No one in the sample was located between values of 1.44 and 6.26 logits (which corresponded to raw scores between 35 and 48). These results show that participants with raw scores at the tails of the severity spectrum (i.e., raw scores of 0 and 1, and 47 and 48) were measured with less precision than participants with raw scores between 2 and 46. This can also be seen in both the relative distances between contiguous raw scores and the SEs of estimated severity levels that were uniform along the continuum but not at its extremes.

Differential Item Functioning (DIF). Severity estimates obtained for women and men were compared to determine significant variations in severity estimates (i.e., ability) as a function of gender. This analysis offers information about the relative severity of that item for persons within each gender. Items are viewed as gender biased if, at a given level of severity, the proportion of women who endorsed an item was significantly different to the proportion of men who endorsed that particular item. A significant gender bias was found in five of the 48 items. Specifically, men were more likely to endorse the items *I have damaged property, or done something disruptive (. . .) after I had been drinking, I have gotten into physical fights because of drinking, and I have driven a car when I knew I had too much to drink to drive safely* at low levels of severity. Women were more likely to endorse the items *I often drank more than I originally had planned, and while drinking, I have said or done embarrassing things* at low levels of severity. Severity estimates obtained for women and men are presented in Table 2.

Internal Structure (Confirmatory Factor Analysis) and Internal Consistency (Reliability Analysis)

Results from the CFA showed the proposed model with eight intercorrelated factors has excellent fit to the data ($\chi^2 = 1199.321$, $p < .001$; CFI = .960, TLI = .957, RMSEA = 90% CI [0.016, 0.030]). All items loaded significantly on their corresponding factors ($p < .05$). Specifically, standardized factor loadings for social-interpersonal were between .59 and .82; for academic-occupational between .51 and .86; for diminished self-perception between .73 and .99; for risky behavior between .19 and .84; for blackout drinking between .45 and .93; for impaired control between .62 and .86; for physiological dependence between .62 and .97; and for poor self-care between .66 and .78. All subscales showed acceptable internal consistency based on tetrachoric correlations. These results are presented in Table 4.

Correlation Analyses: Concurrent Validity

S-YAACQ total scores, and scores of each S-YAACQ subscale, were positively and significantly correlated with scores on the S-AUDIT and S-RAPI. Specifically, greater number of adverse alcohol consequences measured by the S-YAACQ was related to greater S-AUDIT ($r = .70$, $p < .001$) and S-RAPI ($r = .75$, $p < .001$) scores. Additionally, higher scores in social/interpersonal ($r = .43$, $p < .001$ and $r = .46$, $p < .001$); academic/occupational ($r = .37$, $p < .001$ and $r = .42$, $p < .001$); risky behavior ($r = .51$, $p < .001$ and $r = .55$, $p < .001$); impaired control ($r = .65$, $p < .001$ and $r = .71$, $p < .001$); poor self-care ($r = .49$, $p < .001$ and $r = .53$, $p < .001$); diminished self-perception ($r = .44$, $p < .001$)

Table 2

YAACQ Items and Their Measurement Parameters: Prevalence of Each Item for the Total Sample and by Binge Drinking Status

Item content (from least to most severe)	Measurement parameters			% Endorsed binge			χ^2	¹ Gender bias			
	Sev.E	SE	INFIT	OUTFIT	total	Yes		No	Men	Women	Dif.
I have had a hangover the morning after I had been drinking	-4.65	0.22	1.09	1.04	84.6	90.3	73.2	12.35***	-5.03	-4.55	-0.48
I often drank more than I originally had planned	-3.18	0.17	1.06	1.02	67.6	71.5	59.8	ns	-2.65	-3.38	0.73*
While drinking, I have said or done embarrassing things	-3.13	0.17	1.09	1.1	66.8	71.5	57.3	4.48*	-1.91	-3.62	1.71***
I have felt very sick to my stomach or thrown up after drinking	-2.89	0.16	1.2	1.25	63.2	67.3	54.9	ns	-2.65	-2.97	0.32
I could not remember a part of the evening before	-2.1	0.15	0.84	0.73	50.2	59.4	31.7	16.80***	-2.09	-2.1	0.01
I've not been able to remember large stretches of time	-1.43	0.16	0.92	0.82	38.9	44.8	26.8	7.49**	-1.45	-1.42	-0.03
I have said things while drinking that I later regretted	-1.38	0.16	1.07	1.17	38.1	44.8	24.4	9.73**	-1.36	-1.39	0.03
When drinking, I have done impulsive things	-1.36	0.16	0.92	0.79	37.7	45.5	22	12.89***	-1.17	-1.42	0.25
Because of my drinking, I have not slept properly	-1.18	0.16	1.11	0.99	34.8	40	24.4	5.88*	-1.45	-1.09	-0.36
Because of my drinking, I have not eaten properly	-1.08	0.16	1.01	0.84	33.2	38.8	22	7.0**	-1.26	-1.02	-0.24
I have been less physically active because of drinking	-0.98	0.16	0.99	0.91	31.6	37	20.7	6.69**	-0.87	-1.02	0.15
I have had a blackout after drinking heavily	-0.98	0.16	0.95	0.83	31.6	35.2	24.4	ns	-0.87	-1.02	0.15
I have felt badly about myself because of my drinking	-0.95	0.16	0.99	0.95	31.2	31.5	30.5	ns	-0.97	-0.95	-0.02
I have taken foolish risks when I have been drinking	-0.93	0.16	0.93	0.81	30.8	35.8	20.7	5.81*	-0.97	-0.91	-0.06
Drinking has made me feel depressed or sad	-0.63	0.17	1	0.93	26.3	27.9	23.2	ns	-0.44	-0.69	0.25
I have had less energy or felt tired because of my drinking	-0.6	0.17	1.01	0.87	26.3	28.5	20.7	ns	-0.44	-0.66	0.22
I have felt guilty about my drinking	-0.55	0.17	0.89	0.75	25.1	27.3	20.7	ns	-0.55	-0.54	-0.01
I often have ended up drinking when I had planned not to drink	-0.52	0.17	1.06	1.03	24.7	29.7	14.6	6.68***	-0.44	-0.54	0.1
I have been unhappy because of my drinking	-0.4	0.17	0.83	0.75	23.1	23.6	22	ns	-0.66	-0.3	-0.36
I have found that I needed larger amounts of alcohol to feel any effect	-0.4	0.17	1.12	1.35	23.1	27.9	13.4	6.46*	0.07	-0.54	0.61
While drinking, I have said harsh or cruel things to someone	-0.4	0.17	1.15	1.34	23.1	25.5	18.3	ns	-0.87	-0.22	-0.65
I have often found it difficult to limit how much I drink	-0.31	0.18	0.82	0.62	21.9	27.3	11	8.52**	-0.32	-0.3	-0.02
I have tried to quit drinking because I thought I was drinking too much	-0.08	0.18	0.83	0.74	19	22.4	12.2	ns	-0.2	-0.04	-0.16
My drinking has gotten me into sexual situations I later regretted	-0.01	0.19	0.99	0.79	18.2	20	14.6	ns	-0.07	0	-0.07
I often have thought about needing to cut down or stop drinking	0.02	0.19	0.87	0.65	17.8	20	13.4	ns	0.22	-0.04	0.26
I haven't been as sharp mentally because of my drinking	0.09	0.19	0.99	0.88	17	20.6	9.8	4.57*	0.22	0.05	0.17
I have been overweight because of drinking	0.13	0.19	1.02	1.34	16.6	19.4	11	ns	-0.07	0.2	-0.27
I neglected to protect myself or my partner from a STD	0.28	0.2	1.08	0.93	15	17.6	9.8	ns	0.98	0.1	0.88
I have spent too much time drinking	0.32	0.2	0.88	0.58	14.6	20	3.7	11.75***	-0.2	0.52	-0.72
I have not gone to work or classes at school because of drinking	0.36	0.2	1.07	1.06	14.2	17	8.5	ns	0.76	0.25	0.51
I have become very rude, obnoxious or insulting	0.45	0.21	1.09	0.98	13.4	17	6.1	5.59*	-0.07	0.64	-0.71
My boyfriend/girlfriend/spouse/parents have complained to me about my drinking	0.45	0.21	0.96	1.05	13.4	17.6	4.9	7.63**	0.07	0.58	-0.51
I have woken up in an unexpected place after heavy drinking	0.45	0.21	1	0.72	13.4	17	6.1	5.59*	0.22	0.52	-0.3
My physical appearance has been harmed by my drinking	0.45	0.21	0.94	0.99	13.4	15.8	8.5	ns	0.56	0.41	0.15
I have neglected my obligations to family, work, or school	0.58	0.21	1.04	0.84	12.1	13.9	8.5	ns	0.56	0.58	-0.02
I have driven a car when I knew I had too much to drink to drive safely	0.67	0.22	1.28	2.02	11.3	14.5	4.9	5.09*	-0.44	1.23	-1.67***
My drinking has created problems between myself and my boyfriend/girlfriend/spouse, parents	0.99	0.24	0.97	0.79	11.3	9.1	8.5	ns	0.76	1.07	-0.31
I have damaged property, or done something disruptive	0.99	0.24	1.15	0.74	8.9	11.5	3.7	4.12*	-0.2	1.64	-1.84***
I have passed out from drinking	1.38	0.27	1.06	1.71	6.5	7.9	3.7	ns	1.25	1.42	-0.17
The quality of my work or schoolwork has suffered	1.72	0.31	1.07	3.42	4.9	5.5	3.7	ns	1.58	1.76	-0.18
I have injured someone else while drinking or intoxicated	1.93	0.34	1.01	0.83	4	4.2	3.7	ns	3.98	1.64	2.34
I have received a lower grade on an exam or paper	2.05	0.35	1.01	1.85	3.6	5.5	0	4.64*	3.98	1.76	2.22
I have not had as much time to pursue activities or recreation	2.33	0.4	0.97	0.65	2.8	4.2	0	ns	2.03	2.42	-0.39
I have had "the shakes" after stopping or cutting down on drinking	2.49	0.42	1.02	1.15	2.4	3	1.2	ns	2.77	2.42	0.35
I have gotten into trouble at work or school	2.93	0.51	1.04	0.61	1.6	2.4	0	ns	3.98	2.66	1.32
I have gotten into physical fights	2.93	0.51	1.05	0.89	1.6	1.8	1.2	ns	1.58	4.11	-2.53***
I have felt like I needed a drink after I'd gotten up	2.93	0.51	1	9.9	1.6	1.8	1.2	ns	3.98	2.66	1.32
I have felt anxious, agitated, or restless after stopping drinking	3.23	0.59	0.96	0.25	1.2	1.2	1.2	ns	2.77	3.4	-0.63

Note. Sev. E. = severity estimate; SE = standard error; INFIT = an internal fit index assessing the fit with regard to proximal parameters; OUTFIT = an external fit index assessing the fit with regard to distal parameters. ¹gender bias = differential item functioning as a function of gender (shows the item severity estimates for men and women); Dif. = reflects the difference in item severity estimates obtained in men compared to women (positive values indicate that particular item is more severe for men, and negative values indicate that particular item is less severe for men).

* $p < .05$. ** $p < .01$. *** $p < .001$.

and $r = .49, p < .001$); blackout drinking ($r = .56, p < .001$ and $r = .57, p < .001$); and physiological dependence ($r = .40, p < .001$ and $r = .36, p < .001$) were related to higher scores on the S-AUDIT and the S-RAPI. Additionally, the full 48-item

S-YAACQ and five subscales (social/interpersonal, risky behavior, impaired control, blackout drinking, and physiological dependence) were positively correlated to frequency of binge drinking (from $r = .13, p < .05$ to $r = .27, p < .001$).

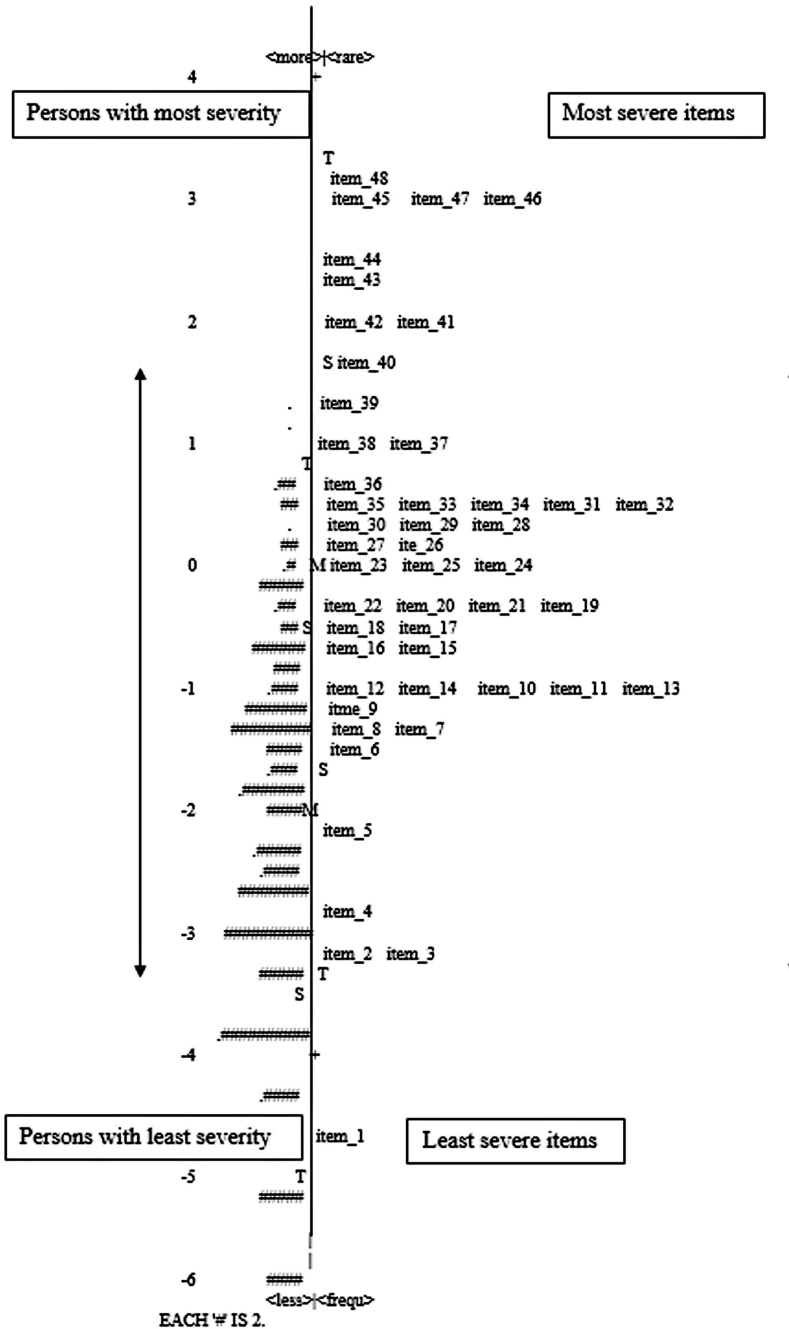


Figure 1. Map of persons and items: persons (left side) and items (right side) are ordered on their level of severity of alcohol problems.

Group Differences

Group differences as a function of gender. The average number of alcohol consequences was 10.91 ± 7.79 , and this did not differ by gender, $t = .01, p = .99$. Mean number of drinking consequences in each of the S-YAACQ subscales (social/interpersonal = 1.64 ± 1.44 , academic/occupational = $.36 \pm .76$, risky behavior = 1.28 ± 1.44 , impaired control = 1.66 ± 1.61 , poor self-care = 1.75 ± 1.91 , diminished self-perception = $1.06 \pm$

1.38 , blackout drinking = 2.88 ± 1.81 , and physiological dependence = $.28 \pm .51$) also were similarly distributed between men and women (all p values greater than $.15$). Mean number of drinking consequences by gender is presented in Table 5.

Group differences as a function of drinking behaviors. The total number of alcohol consequences was higher for students who reported past month drunkenness than for those who did not, $t = 4.89, p < .001$ as were six S-YAACQ subscales (social/interper-

Table 3

Raw Total Scores on the Sum of the 48 YAACQ Items, Estimated Severity of the Scores in Logit Units, and Frequencies and Cumulative Frequencies of Scores in the Sample

Raw score	Severity estimate	SE	Frequency	% of the sample	Cumulative Frequency	Cumulative % of the sample
0	-6.58	1.89	8	3.2	8	3.2
1	-5.23	1.1	10	4	18	7.3
2	-4.35	0.82	9	3.6	27	10.9
3	-3.79	0.69	21	8.5	48	19.4
4	-3.37	0.61	10	4	58	23.5
5	-3.03	0.56	20	8.1	78	31.6
6	-2.74	0.52	16	6.5	94	38.1
7	-2.49	0.49	9	3.6	103	41.7
8	-2.27	0.46	11	4.5	114	46.2
9	-2.07	0.44	8	3.2	122	49.4
10	-1.88	0.42	15	6.1	137	55.5
11	-1.71	0.41	7	2.8	144	58.3
12	-1.55	0.4	8	3.2	152	61.5
13	-1.4	0.39	11	4.5	163	66
14	-1.25	0.38	7	2.8	170	68.8
15	-1.11	0.37	14	5.7	184	74.5
16	-0.98	0.36	7	2.8	191	77.3
17	-0.85	0.36	6	2.4	197	79.8
18	-0.72	0.35	8	3.2	205	83
19	-0.6	0.35	4	1.6	209	84.6
20	-0.47	0.35	4	1.6	213	86.2
21	-0.35	0.35	5	2	218	88.3
22	-0.23	0.35	7	2.8	225	91.1
23	-0.11	0.35	3	1.2	228	92.3
24	0.01	0.35	3	1.2	231	93.5
25	0.12	0.35	2	0.8	233	94.3
26	0.24	0.35	2	0.8	235	95.1
27	0.37	0.35	1	0.4	236	95.5
28	0.49	0.35	4	1.6	240	97.2
29	0.61	0.36	2	0.8	242	98
30	0.74	0.36	3	1.2	245	99.2
31	0.87	0.36	0	0	245	99.2
32	1.01	0.37	0	0	245	99.2
33	1.15	0.38	1	0.4	246	99.6
34	1.29	0.38	1	0.4	247	100
35	1.44	0.39	0	0	247	100
36	1.6	0.4	0	0	247	100
37	1.76	0.41	0	0	247	100
38	1.94	0.42	0	0	247	100
39	2.12	0.44	0	0	247	100
40	2.32	0.46	0	0	247	100
41	2.54	0.48	0	0	247	100
42	2.78	0.5	0	0	247	100
43	3.05	0.53	0	0	247	100
44	3.35	0.58	0	0	247	100
45	3.73	0.65	0	0	247	100
46	4.22	0.76	0	0	247	100
47	4.99	1.04	0	0	247	100
48	6.26	1.85	0	0	247	100

sonal, $t = 3.95$, $p < .001$; risky behavior, $t = 5.73$, $p < .001$; impaired control, $t = 4.32$, $p < .001$; poor self-care, $t = 2.88$, $p < .01$; diminished self-perception, $t = 2.56$, $p < .05$; and blackout drinking, $t = 3.77$, $p < .001$). Similarly, participants who reported episodes of heavy episodic (*binge*) drinking, compared with those who did not report this drinking pattern, endorsed significantly more total number of alcohol problems ($t = 4.91$, $p < .001$) and more number of consequences on seven S-YAACQ subscales (social/interpersonal, $t = 3.48$, $p < .001$; academic/occupational, $t = 2.30$, $p < .05$; risky behavior, $t = 3.71$, $p < .001$; impaired control, $t = 3.59$, $p < .001$; poor self-care, $t = 3.44$, $p < .001$;

psychological dependence, $t = 2.47$, $p < .05$; and blackout drinking, $t = 4.28$, $p < .001$). Table 5 shows mean scores on each S-YAACQ subscale as a function of binge drinking and drunkenness.

Binge drinkers and nonbinge-drinkers also showed significant differences at the item level in 21 of the 48 negative consequences. Specifically, compared with nonbingers, binge drinkers were more likely to report negative consequences measuring blackouts, diminished self-care, lack of control in drinking intake, tolerance to the effects of alcohol, driving a car after drinking, and lower performance in college assignments and tests. Table 2 shows

Table 4
Standardized Factor Loadings and Internal consistency

Item	Loading	α
While drinking, I have said or done embarrassing things	.82	
My drinking has created problems between myself and my boyfriend/girlfriend/spouse, or parents.	.78	
I have become very rude, obnoxious or insulting after drinking.	.61	
My boyfriend/girlfriend/spouse/parents have complained to me about my drinking	.79	
While drinking, I have said harsh or cruel things to someone	.59	
I have said things while drinking that I later regretted	.77	.84
The quality of my work or schoolwork has suffered because of my drinking	.51	
I have gotten into trouble at work or school because of drinking	.79	
I have not gone to work or missed classes at school because of drinking	.86	
I have neglected my obligations to family, work, or school because of drinking	.83	
I have received a lower grade on an exam or paper than I ordinarily could have because of my drinking	.83	.91
I have felt badly about myself because of my drinking	.85	
I have been unhappy because of my drinking	.99	
I have felt guilty about my drinking	.92	
Drinking has made me feel depressed or sad	.73	.86
I have driven a car when I knew I had too much to drink to drive safely	.19	
I have taken foolish risks when I have been drinking	.79	
I have gotten into physical fights because of drinking	.49	
I have damaged property or other things like that after I had been drinking	.47	
As a result of drinking, I neglected to protect myself or my partner from a STD or an unwanted pregnancy	.59	
When drinking, I have done impulsive things that I regretted later	.84	
My drinking has gotten me into sexual situations I later regretted	.73	
I have injured someone else while drinking or intoxicated	.57	.89
I have had a hangover (headache, sick stomach) the morning after I had been drinking	.79	
I have passed out from drinking	.45	
I have felt very sick to my stomach or thrown up after drinking	.59	
I have woken up in an unexpected place after heavy drinking	.70	
I've not been able to remember large stretches of time while drinking heavily	.82	
I have awakened the day after drinking and found that I could not remember a part of the evening before	.93	
I have had a blackout after drinking heavily (i.e., could not remember hours at a time)	.78	.91
I often drank more than I originally had planned	.70	
I have spent too much time drinking	.79	
I often have ended up drinking on nights when I had planned not to drink	.62	
I have tried to quit drinking because I thought I was drinking too much	.86	
I often have thought about needing to cut down or stop drinking	.85	
I have often found it difficult to limit how much I drink	.83	.90
I have felt like I needed a drink after I'd gotten up (that is, before breakfast)	.65	
I have had "the shakes" after stopping or cutting down on drinking	.62	
I have found that I needed larger amounts of alcohol to feel any effect or to get high or drunk	.71	
I have felt anxious, agitated, or restless after stopping or cutting down on drinking	.97	.70
Because of my drinking, I have not eaten properly	.75	
I have been less physically active because of drinking	.77	
Because of my drinking I have not slept properly	.66	
My physical appearance has been harmed by my drinking	.78	
I have been overweight because of drinking	.66	
I haven't been as sharp mentally because of my drinking	.71	
I have not had as much time to pursue activities or recreation because of drinking	.67	
I have had less energy or felt tired because of my drinking	.73	.90

percentage of endorsement of each of the alcohol-related consequences for the total sample and as a function of binge drinking status.

Discussion

The objective of this study was to establish the psychometric properties of a Spanish version of the 48-item Young Adult Alcohol Consequences Questionnaire. In previous work (Pilatti, Read et al., 2014), we established the psychometric properties of a Spanish version of the Brief YAACQ (Kahler et al., 2005). Yet at that time, we noted the need to follow that preliminary work with an examination of the full YAACQ to better capture a broader

range of common drinking consequences experienced by Spanish-speaking students, particularly those consequences that fall toward the lower end of the severity continuum. Further, a limitation of the prior work with the Spanish B-YAACQ was that it was validated only against measures of alcohol consumption, and not against other measures of alcohol-related problems. In the present study, we addressed these issues by evaluating the S-YAACQ measure and its associations with the Spanish versions of two widely used alcohol consequence measures, the AUDIT and the RAPI.

Overall, results supported the use of the S-YAACQ to measure alcohol-related problems in Spanish-speaking college students.

Table 5
Mean Scores on Each S-YAACQ Subscale by Gender and as a Function of Binge and Drunkenness Drinking Patterns

	Sex		Drunkenness		Binge	
	Male (n = 60)	Female (n = 187)	Yes (n = 55)	No (n = 192)	Yes (n = 165)	No (n = 82)
Self-perception	1.07 (1.38)	1.05 (1.39)	1.47 (1.54)	0.94 (1.32)	1.10 (1.41)	0.96 (1.33)
Social/Interpersonal	1.62 (1.52)	1.64 (1.41)	2.29 (1.37)	1.45 (1.40)	1.85 (1.43)	1.20 (1.35)
Academic/Occupational	0.27 (0.63)	0.40 (0.80)	0.40 (0.68)	0.35 (0.79)	0.44 (0.83)	0.21 (0.58)
Risky behaviors	1.42 (1.59)	1.22 (1.39)	2.20 (1.53)	1.01 (1.30)	1.51 (1.44)	0.80 (1.34)
Blackout drinking	2.95 (1.81)	2.86 (1.81)	3.67 (1.36)	2.66 (1.86)	3.22 (1.80)	2.21 (1.65)
Impaired control	1.62 (1.56)	1.67 (1.63)	2.45 (1.86)	1.43 (1.46)	1.91 (1.69)	1.15 (1.32)
Physiological dependence	0.20 (0.44)	0.31 (0.53)	0.35 (0.62)	0.27 (0.48)	0.34 (0.55)	0.17 (0.41)
Self-care	1.78 (1.69)	1.74 (1.99)	2.40 (1.94)	1.57 (1.87)	2.04 (1.98)	1.17 (1.65)
S-YAACQ TOTAL	10.92 (6.95)	10.90 (8.06)	15.24 (7.60)	9.67 (7.41)	12.42 (7.87)	7.87 (6.70)
	7.28 (4.26)	5.72 (4.12)	8.56 (4.91)	5.40 (3.69)	7.13 (4.30)	4.04 (3.10)

Note. S-YAACQ = Spanish version of the Young Adult Alcohol Consequences Questionnaire.

Importantly, the present study expanded and improved on our previous work by shedding light on how the item severity of the 48 S-YAACQ consequence items is organized along a continuum. Notably, the item severity continuum that we identified here is largely similar to that found for the Spanish B-YAACQ (Pilatti, Read, et al., 2014) and to that found by both Kahler, Strong, and Read (2005) and Verster, van Herwijnen, Olivier, and Kahler (2009).

The reliability that we observed in this study implies that college students who were predicted to have more severe alcohol-related problems were indeed located higher in the map. Conversely, those students predicted to have lower severity were located at the bottom of the map (Andrich, 1982). Moreover, the high reliability for the YAACQ items suggests that this S-YAACQ likely is reproducible across similar samples (Shea, Tennant, & Pallant, 2009). These results represent an improvement on the Spanish B-YAACQ, where the modest person reliability suggested the 24 items may be too severe to adequately capture alcohol consequences in another, similar sample of college students (Pilatti, Read et al., 2014). The items on the full YAACQ were developed with the specific objective of fully capturing the lower as well as the upper levels of the problem severity continuum, and to assess ranges on this continuum where the great majority of college students are located (Kahler et al., 2005; Read et al., 2006). Thus, it is perhaps not surprising that this translated full version appears to be better suited than the B-YAACQ to the identification of youth experiencing alcohol problems that otherwise might be missed.

Consistent with the work of Kahler et al. (2005) and Verster et al. (2009), the most frequently endorsed consequences were mild consequences such as having a hangover, saying or doing embarrassing things, and feeling sick. The next most commonly endorsed items encompass consequences of increasing severity (Devos-Comby & Lange, 2008; Kahler et al., 2005). Specifically, these items reflect blackouts (*I couldn't remember a part of the evening because of my drinking, I have had a blackout after drinking heavily*), risky and impulsive behaviors (e.g., *I drank more than I originally planned*), as well as diminished self-care and self-perception (e.g., *I have not slept properly*). The next most commonly endorsed items represent loss of control over drinking and other significant drinking problems, including the develop-

ment of tolerance to the acute effects of alcohol, interpersonal consequences, and unsafe sexual behaviors. Finally, the items in the lower section of the map consisted of consequences that reflect severe impairment, such as neglecting obligations, impaired academic functioning, physical fights, drunk driving, and alcohol dependence symptoms (Cohn et al., 2011; Kahler et al., 2005). This pattern closely follows that observed by Kahler et al. (2005).

The person separation index indicates that the full S-YAACQ successfully distinguishes persons according to their locations on the severity continuum (Hendriks, Fyfe, Styles, Skinner, & Merriam, 2012) and the separation index for the items indicates that the items can effectively discriminate between different levels of severity (Andrich, 1982). According to infit and outfit statistics, the patterns of responses observed in this sample of college students showed good fit to a Rasch model, suggesting not only strong model fit, but also that the unidimensionality assumption was fulfilled. These results provide evidence that: (a) the full S-YAACQ comprises a scale representing a spectrum of severity of alcohol-related problems; and (b) certain drinking consequences are more likely to precede others (Kahler et al., 2005; Shea et al., 2009; van der Wal et al., 2012).

The clinical implications of this are numerous. First, this severity information could be used to facilitate the early identification of students who might be at risk of progressing to more severe stages of alcohol-related problems (Dick, Aliev, Viken, Kaprio, & Rose, 2011; Read et al., 2007). Further, instead of implementing uniform intervention programs across students, the YAACQ and its Spanish-language version could be used to inform the application of more personalized interventions based on the level (mild to more severe) and type of alcohol consequences. Finally, the information provided by the YAACQ and the S-YAACQ can be used to generate discussions regarding alcohol-related consequences as part of motivational interventions aimed at reducing alcohol drinking (Borsari et al., 2012; Merrill, Read, & Barnett, 2013).

Only five out of the 48 items showed evidence of functioning differently for women and men. At low levels of severity, men were more likely to endorse behaviors such as damaging property, physical fights, and drunk driving. In contrast, at low levels of severity women were more likely to endorse saying or doing embarrassing things and drinking more than planned. The observed DIF in these items may be a reflection of differences in

culturally normative expectations for behavior in men and women. The items more frequently endorsed by men at lower severity levels might be construed as externalizing types of behaviors. In contrast, those items endorsed at low levels of severity for women are oriented around self-control. DIF could also relate to gender differences in interpretation of the items (Borsboom, 2006), and obviously, to idiosyncratic cultural patterns of this sample of Argentinean college students (Pilatti, Read et al., 2014). It is also possible that men and women experience different negative consequences during or after drinking (Reed et al., 2012; Scott-Sheldon et al., 2010). It should be noted, however, that in this study we observed a similar number of items to show bias for men and for women. In such cases, the bias against one group is canceled by the bias against the other (Borsboom, 2006; Wyse, 2013). This is known as DIF cancellation and paves the way for comparison of group means at the test level (Borsboom, 2006; Wyse, 2013).

Results from Classical Test Theory statistics (CFA, internal consistency, and concurrent validity) further support the psychometric structure of this Spanish version of the YAACQ. The CFA supported the eight-factor structure of the S-YAACQ, all loading on a single, higher-order factor. The subscale structure of the YAACQ is among the major advantages of this measure (Devos-Comby & Lange, 2008) as this information can be used to identify students who are experiencing specific types of problems that may be targeted in intervention. The internal consistency of each domain was high, and each one was positive and significantly associated with other measures of alcohol-related problems.

The present results should be interpreted with consideration of some of this study's limitations. First among these is that the majority of the students in this sample were psychology students. Additionally, the sample was composed of a greater percentage of women than men. Different response patterns might be found in more heterogeneous student samples. Although the verification of the global fit of the data showed adequate indices for persons and items, seven items had inadequate outfit indices at the individual level. Lack of adequate outfit is considered to be less serious than lack of adequate infit (Javitz, Brigham, Lessov-Schlaggar, Krasnow, & Swan, 2009), but could mean that these consequences represent poor indicators of alcohol-related problems within this population of college students (Cohn et al., 2011). However, it is important to consider that in this study these indices appear to be related to the low prevalence of endorsement of some items. As low item endorsement can affect the precision of item estimates (Shea et al., 2009), this could account for the outfit that we observed here. In the future, replication in samples with higher levels of alcohol-related problems will help to shed light on the performance of these seven items in Spanish speaking students. Lastly, participants in the present study represent only one type of Spanish-speaking college student. Replication with students in other Spanish speaking countries, and in samples of Spanish speakers within the U.S. is needed.

Despite these limitations, findings reported here offer encouraging evidence of the psychometric properties of the Spanish version of the full YAACQ, and suggest that this measure can be used to identify a broad diversity of alcohol-related problems in Spanish-speaking college students.

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