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Five-Factor Model and alcohol outcomes: Mediating and moderating role of alcohol expectancies

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ABSTRACT

The aim of the present study was to examine the relationship between the Five-Factor Model of personality and alcohol expectancies (AEs) with different alcohol outcomes. The sample was composed of 738 participants (63.7% females). Path and regression analyses were performed to test the mediation and moderation effects. The results indicated that Neuroticism was related to alcohol consumption through Positive Alcohol Expectancies, and that Negative Alcohol Expectancies, but also Positive Alcohol Expectancies, partially mediated the relationship of Neuroticism to alcohol-related problems. In addition, Positive Alcohol Expectancies partially mediated the associations of extraversion and low conscientiousness with weekend Standard Drink Units (SDUs), and they completely mediated the associations of these personality variables with alcohol-related problems. Additional direct paths were found from low agreeableness to weekly SDUs and alcohol-related problems; and from low openness to weekend SDUs. Moderation effects of alcohol expectancies on personality and both alcohol use and alcohol-related problems were also found. The present research contributes new evidence on the influence of the five factors of personality on alcohol outcomes, and the mediation/moderation role of alcohol expectancies. These findings can be useful to develop prevention/intervention programmes.

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1. Introduction

Alcohol consumption is the world's third largest risk factor for disease and disability; indeed in middle-income countries, it is the greatest risk (World Health Organization – WHO, 2011). From a biopsychosocial perspective, drinking behaviour is caused by the complex interplay of multiple variables (Ibáñez, Ruiperez, Villa, Moya, & Ortet, 2008). Regarding psychological variables, it has been hypothesized that more distal and non-specific variables, such as personality, may influence the alcohol outcomes mediated and moderated by more proximal and specific variables, such as alcohol expectancies (Ibáñez et al., 2008; McCarthy, Kroll, & Smith, 2001; Smith & Anderson, 2001).

1.1. Personality and alcohol outcomes

The most widely used, integrative model of personality is the Five-Factor Model (FFM; John, Naumann, & Soto, 2008). In

accordance with the fact that impulsivity-related traits are the most relevant for alcohol use and abuse (Ibáñez et al., 2008; Sher, Grekin, & Williams, 2005), low Conscientiousness (C) and low Agreeableness (A) have been consistently associated with alcohol consumption, alcohol-related problems (AP), and alcohol disorders (Kotov, Gamez, Schmidt, & Watson, 2010; Malouff, Thorsteinsson, Rooke, & Schutte, 2007; Ruiz, Pincus, & Dickinson, 2003). However, these two disinhibition domains may influence alcohol use through different etiological pathways (Ibáñez et al., 2008; Sher et al., 2005). Whereas low A and low C would be associated with alcohol outcomes through a *deviance proneness pathway* (i.e., alcohol use is considered a part of a more general pattern of antisocial behaviour), only low C (together with high Extraversion, E) would be relevant in a *positive affect regulation pathway* (i.e., people who drink to experience positive alcohol reinforcement effects) (Mezquita, Ibáñez, Moya, Villa, & Ortet, 2014). In addition, Neuroticism (N) has proven relevant in problematic alcohol use patterns (Kotov et al., 2010; Malouff et al., 2007; Ruiz et al., 2003), probably through a *negative affect regulation pathway* (i.e., people drink alcohol to diminish negative affect) (Mezquita et al., 2014). Finally, although Openness to Experience (O) appears to play a minor role in alcohol use (Kotov et al.,

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2010; Malouff et al., 2007), some studies have found certain negative relationships (Gotham, Sher, & Wood, 1997).

1.2. Alcohol expectancies (AEs) and alcohol outcomes

AEs are defined as beliefs about the effects of alcohol on behaviour, cognition, moods and emotions (Leigh, 1989). Consequently, initiating a drinking episode is assumed to be driven partly by at least the individual's belief that alcohol results in certain desirable consequences (e.g., become funnier or less stressed); while beliefs about the undesirable effects of alcohol (e.g., making a fool of oneself or feeling sick) may predict abstaining from drink (Leigh, 1989; Leigh & Stacy, 2004).

Accordingly during adulthood, Positive AEs have been robustly associated with alcohol use in cross-sectional (Finn, Sharkansky, Brandt, & Turcotte, 2000; Fu, Ko, Wu, Cherng, & Cheng, 2007; Harnett, Lynch, Gullo, Dawe, & Loxton, 2013) and prospective studies, even when previous alcohol use is controlled for (Corbin, Iwamoto, & Fromme, 2011; Settles, Cyders, & Smith, 2010; Wardell, Read, Colder, & Merrill, 2012). In addition, Positive AEs have been related to AP (Corbin et al., 2011; Dunne, Freedlander, Coleman, & Katz, 2013; Finn et al., 2000; Fu et al., 2007), and studies in clinical samples have also shown higher Positive AEs in alcohol dependents than in samples of undergraduate students (Li & Dingle, 2012).

It has been hypothesized that Negative AEs relate negatively to alcohol use (Leigh & Stacy, 2004). However, there is evidence of reverse (Corbin et al., 2011; Leigh & Stacy, 2004), but also direct, or non-significant associations with alcohol consumption (Pabst, Kraus, Piontek, Mueller, & Demmel, 2014). Such discrepancies seem to be explained by differences in age. While the role of Negative AEs may be irrelevant in younger adults, the magnitude of the reverse association between Negative AEs and alcohol consumption seem to increase in middle-age participants (Leigh & Stacy, 2004; Nicolai, Moshagen, & Demmel, 2012). Furthermore, higher Negative AEs have been positively related to AP in young adult samples (Dunne et al., 2013; Pabst et al., 2014; Read & O'Connor, 2006), and also seem to be higher in clinical than in student samples (Li & Dingle, 2012).

1.3. Interrelationships among drinking predictors

Most of the studies on personality and AEs have been conducted within the Acquired Preparedness Model (APM) theoretical framework. The APM is an attempt to integrate social-cognitive learning and biodispositional personality risk factors to provide a more comprehensive account of risky alcohol use. Specifically, this model proposes that those reward-seeking and disinhibited individuals would be more prepared to acquire certain social-cognitive constructs, such as positive expectations regarding alcohol effects which, in turn, may result in increased drinking (McCarthy et al., 2001; Smith & Anderson, 2001). Accordingly, cross-sectional (Dunne et al., 2013; Finn et al., 2000; Gullo, Dawe, Kambouropoulos, Staiger, & Jackson, 2010; Harnett et al., 2013) and prospective (Corbin et al., 2011; Fu et al., 2007; Settles et al., 2010; Wardell et al., 2012) studies have shown that Positive AEs mediate, either totally or partially, associations of disinhibition (e.g., sensation-seeking, sensitivity to reward, fun seeking or impulsivity) with alcohol consumption and AP.

The APM has focused mainly on impulsivity and Positive AEs, so less attention has been paid to other personality characteristics or to Negative AEs. However, there is certain evidence that Positive AEs also mediate the relationship of N and E dimensions to alcohol outcomes (McCarthy et al., 2001; Read & O'Connor, 2006). Furthermore, Read and O'Connor (2006) found that Negative AEs partially mediate the association of N with AP. Corbin et al. (2011) and Fu

et al. (2007) failed to find any association between impulsivity-related scales and Negative AEs, while Spillane, Cyders, and Maurelli (2012) found that negative urgency predicts AP which, in turn, predict Negative AEs in males. Thus, the mediation role of Negative AEs is less clear and deserves further research.

Finally, and as an extension of the APM, moderation effects have also been hypothesized; i.e., disinhibited individuals with high Positive AEs would drink more than other equally disinhibited individuals without these expectancies (McCarthy et al., 2001). In line with this, Carlson and Johnson (2012) and Cyders et al. (2007) found that impulsivity-related scales interact with high Positive AEs in predicting alcohol-related outcomes, while Fischer, Smith, Anderson, and Flory (2003) found that E interacts with social facilitation AEs in relation to drinking behaviour. Another study found that high neurotic extraversion interacts with Positive AEs in predicting AP, but only in one of the two samples studied (McCarthy et al., 2001). Finally, Cyders et al. (2007) found that positive urgency (which is related mainly to low C, low A and N; see Cyders & Smith, 2008) interacts with Negative AEs to predict AP.

1.4. The present study

Previous studies have explored the association of different personality variables and AEs as predictors of alcohol use and misuse. However, only a few used the FFM, even after some studies have found that each personality dimension is related to different alcohol use patterns. Very few studies have focused on the study of both types of AEs (Positive and Negative) and effects (moderation/mediation). Thus, the aim of the present research was to study the mediation/moderation roles of AEs in the relationship of the FFM to drinking during the week, at the weekend and AP. Based on previous studies, we hypothesized that personality is related to alcohol outcomes through AEs, with the exception of low A and low O (see Fig. 1); and that AEs, mainly the positive ones, interact with disinhibition (low C and low A), E and N to predict alcohol outcomes.

2. Method

2.1. Participants and procedure

The sample was composed of 738 participants aged 18–53 years (63.7% females, mean age = 23.27, $SD = 3.75$), 69.50% were students, 19.4% were active workers, 7.3% were unemployed and the remaining 3.8% presented other situations. All the participants provided informed consent to participate in the study and received a mean amount of 30 euros for their collaboration. See the additional information in Supplementary material 1.

2.2. Materials

2.2.1. Personality

We used the Spanish version of the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1999), which comprises 240 items that are answered on a 5-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. It assesses 30 specific traits, or facets, that define the five personality factors or domains: N, E, O, A, and C.

2.2.2. Alcohol expectancies

The Expectancy Questionnaire (EQ; Camacho et al., 2013) consists of 34 items on a 6-point Likert-type scale ranging from *no chance to certain to happen*. It measures Positive AEs and Negative AEs about alcohol effects. Respondents indicate the likelihood of

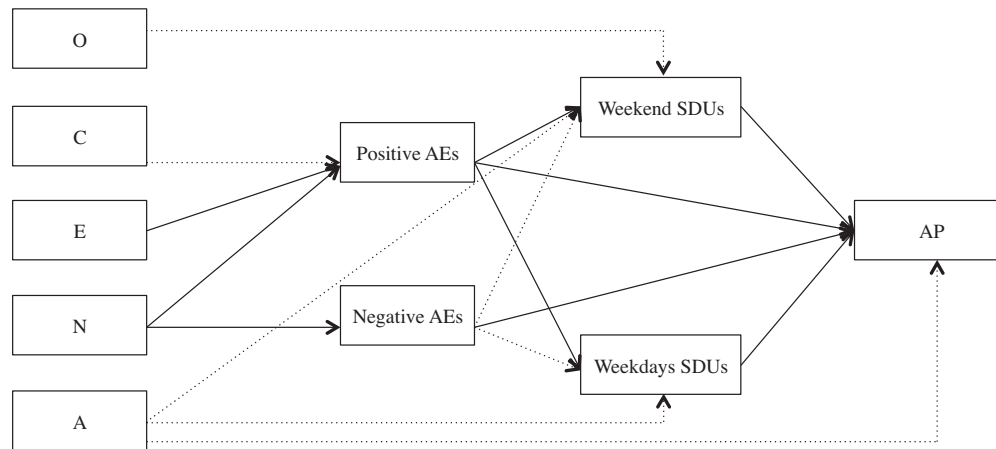


Fig. 1. Hypothesized model. Continuous lines are the positive hypothesized associations; discontinuous lines are the inverse hypothesized associations.

the indicated effects having an effect on them when they drink. Abstainers were told to answer according to what they thought would happen if they drank alcohol.

2.2.3. Alcohol use

The *Alcohol Intake Scale-UJI* (AIS-UJI; Grau & Ortet, 1999) is a self-report questionnaire of alcohol use, which allows the calculation of participants' Standard Drink Units (SDUs; Rodríguez-Martos, Gual, & Llopis, 1999) consumed during the week (Monday–Thursday) and at weekends (Friday–Sunday). In Spain, one SDU is equivalent to 10 g of alcohol (Rodríguez-Martos et al., 1999).

2.2.4. Alcohol-related problems

The Rutgers Alcohol Problem Index (RAPI; López, Fernández, Fernández, Álvarez, & Secades, 2012) is a 23-item (from 0 “never” to 4 “more than 10 times”) scale designed to assess AP during a specified time frame (3 years).

2.3. Data analyses

We conducted descriptive analyses, Cronbach's alphas and partial correlations using the SPSS statistic package, version 21. The same software was used to carry out regression analyses to explore interactions between personality and AEs as predictors of alcohol outcomes. In the regression we entered the standardized scores of the following variables: gender, age, personality broad domains, Positive AEs and Negative AEs and the interactions of personality \times Positive AEs, or personality \times Negative AEs. To ensure that the regression results were not influenced by the fact that some participants (3.12%) were non-independently recruited (see Supplementary material 1), the Durbin–Watson (DW) statistic was calculated (Savin & White, 1977). In order to interpret significant interactions, simple slope analyses were performed (see Dawson, 2014).

To explore the mediation effects of AEs between personality and alcohol outcomes, we performed a path analysis using the EQS software, version 6.1. EQS allows direct effects, indirect effects (based on an adaptation of Sobel's test) and total effects (sum of the direct and indirect effects) to be obtained as single output (see Bentler, 2006). Robust methods were used given the non-normality in the data. For a model to show a good fit, Comparative Fit Index (CFI), Bollen's Fit Index (IFI), and McDonald's Fit Index (MFI) must be .95 or higher, and Root Mean-Square Error of Approximation (RMSEA) must be .05 or lower (Byrne, 2006).

3. Results

3.1. Sample means, Cronbach's alphas and partial correlations

The descriptive analyses showed that the greatest concentration of alcohol consumptions occurred at the weekend (see Supplementary material 2). Moreover, men scored significantly higher for SDUs and AP than women, and lower for N and A. No differences in AEs were found between genders. The Cronbach's alphas of all the scales were satisfactory ($>.70$). Partial correlations can be consulted in Supplementary material 3.

3.2. Path analysis

The hypothesized model showed fit indices lower than .95 and RMSEA higher than .05. After adding the specifications suggested by the Lagrange Multiplier test (C, E \rightarrow weekend SDUs; N \rightarrow AP) and removing the paths suggested by the Wald tests (A \rightarrow weekend SDUs; Negative AEs \rightarrow SDUs), the fit indices were good (S-B $\chi^2 = 42.82$, d.f. = 18, $p = .001$; CFI = .98; IFI = .98, MFI = .98; RMSEA = .04). The final path model is presented in Fig. 2. The indirect and total effects of the distal variables on alcohol outcomes are presented in Table 1.

3.3. Regression analyses

Regression analyses showed significant interaction effects between C \times Positive AEs ($\beta = -.08$, $p < .05$) on weekend SDUs, while N \times Positive AEs ($\beta = .07$, $p < .05$), A \times Positive AEs ($\beta = -.09$, $p < .05$) and A \times Negative AEs ($\beta = -.11$, $p < .01$) predicted AP. The DW statistic showed that there were no correlations between errors in the first (DW = 1.92), second (DW = 2.02) and third (DW = 2.01) regression analyses at the 1% level of significance, and that the regression assumption of independence was not violated.

Figure 3 shows the plots of these effects. The simple slope analyses revealed that the effect of C on weekend SDUs was significant for high Positive AEs (1 SD above the mean) ($\beta = -.24$, $p < .001$), but not for low Positive AEs (1 SD below the mean) ($\beta = -.10$, $p > .05$). Similar results were found between N on AP (high Positive AEs: $\beta = .18$, $p < .001$; low Positive AEs: $\beta = .04$, $p > .05$), and A on AP (high Positive AEs: $\beta = -.23$, $p < .001$; low Positive AEs: $\beta = -.06$, $p > .05$). A also had a stronger effect on AP at high levels of Negative AEs ($\beta = -.24$, $p < .001$) than at low levels of Negative AEs ($\beta = -.03$, $p > .05$). However, we have to point out that the use of a more conservative criterion, such as the Bonferroni-adjusted approach,

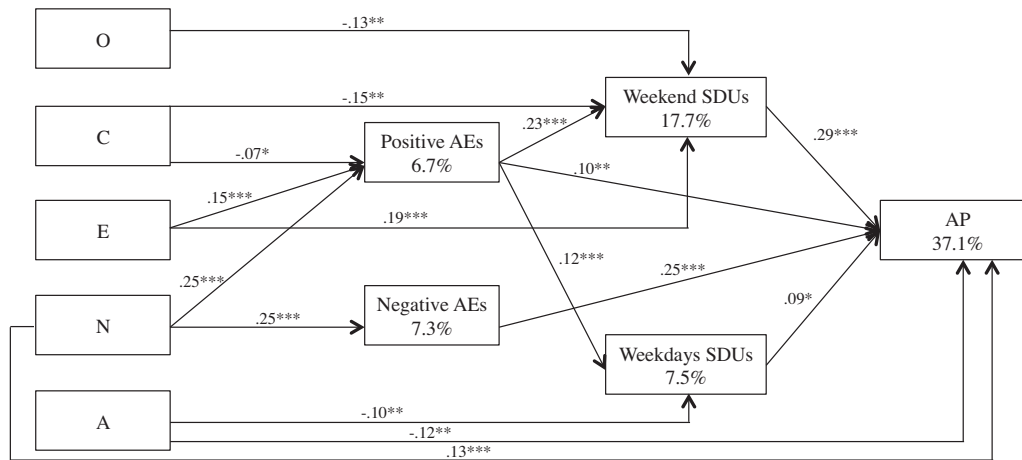


Fig. 2. Final path model. On the lines, we find the standardized solutions. In the boxes, total variance is explained. The intercorrelations among personality domains, AEs and SDUs were introduced into the model, but they were not included in the figure to facilitate its interpretation. Gender and age were also covaried with all the variables in the model in order to control their effects. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1
Indirect and total effects of the final path analysis.

Path	St. beta	Path	St. beta
<i>Indirect effects</i>			
N → weekdays SDUs	.03**	N → AP	.10***
E → weekdays SDUs	.02**	E → AP	.08***
C → weekdays SDUs	-.01	O → AP	-.04**
N → weekend SDUs	.06***	A → AP	-.01
E → weekend SDUs	.04***	O → AP	-.05***
C → weekend SDUs	-.02*	Positive AEs → AP	.08***
<i>Total effects</i>			
N → Positive AEs	.25***	C → weekend SDUs	-.16***
E → Positive AEs	.15***	Positive AEs → weekend SDUs	.23***
C → Positive AEs	-.07*	N → AP	.23***
N → Negative AEs	.25***	E → AP	.08***
N → weekdays SDUs	.03**	O → AP	-.04**
E → weekdays SDUs	.02**	A → AP	-.13***
A → weekdays SDUs	-.10**	C → AP	-.05***
C → weekdays SDUs	-.01	Positive AEs → AP	.17***
Positive AEs → weekdays SDUs	.12***	Negative AEs → AP	.25***
N → weekend SDUs	.06***	Weekdays SDU → AP	.09*
E → weekend SDUs	.22***	Weekend SDU → AP	.29***
O → weekend SDUs	-.13***		

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

could lead to the consideration that the interactions we found were not significant as they all had a level of significance higher than .004 (0.05/14).

4. Discussion

The aim of the present research was to examine the relationship of personality and AEs to alcohol outcomes. As hypothesized, Positive AEs were directly related to increased alcohol consumption and AP (Finn et al., 2000; Fu et al., 2007; Pabst et al., 2014; Read & O'Connor, 2006). Moreover, Negative AEs were not related to alcohol consumption, but were associated with higher AP, which is in line with previous studies with young adults (Dunne et al., 2013; Pabst et al., 2014; Read & O'Connor, 2006). This result may be interpreted as Positive AEs possibly facilitating increased alcohol consumption which, in turn, may facilitate more AP. Once the

experience with alcohol is stronger and more AP have been experienced, individuals will increase their Negative AEs. In other words, it seems that Negative AEs are the result of bad experiences with alcohol consumption and AP rather than their cause (Spillane et al., 2012). This idea is reinforced by the fact that clinical samples showed higher Positive and Negative AEs than young adults, but the difference is much larger for Negative AEs (Li & Dingle, 2012).

According to the APM, we found that Positive AEs partially mediated the association of E and low C with drinking at the weekend which, in turn, predicted more AP. These associations indicated that E and C are involved in a more recreational alcohol use associated with the *positive affect regulation pathway*, in which motivational and cognitive (e.g., AEs) variables play an important role (Mezquita et al., 2014).

As found in previous studies (Gotham et al., 1997), low O was also associated with alcohol consumption. Specifically, it was related to weekend SDUs, so it is possible that low O participants spend most of their leisure time participating in activities that are highly normative in Spain, such as drinking (National Plan of Drugs, 2013), whereas high O individuals are more prone to carry out less conventional activities (e.g., theatre or other cultural activities). However, further research is needed to test this hypothesis.

In addition, our results showed different association patterns between A and N personality dimensions, and AEs and alcohol outcomes, which were also relevant. Thus, low A was directly related to a less normative alcohol use; i.e., weekdays SDUs and AP. These results are in line with previous research works and suggest that low A may be more involved in a *deviance proneness pathway* (Finn et al., 2000; Mezquita et al., 2014). N showed a stronger effect on AP than on alcohol consumption, as previous studies have found with young adults (Mezquita et al., 2014; Ruiz et al., 2003). This reinforces the idea that N is related mainly to problematic alcohol patterns and alcohol abuse/dependence symptoms and disorders (Kotov et al., 2010; Malouff et al., 2007). Furthermore, its associations with alcohol outcomes were partially mediated by both Positive and Negative AEs, as found in other studies (Read & O'Connor, 2006). N is closely associated with sensitivity to punishment (Mezquita et al., 2014), so high N individuals would pay more attention to the negative outcomes of alcohol effects. In addition, N was also associated with Positive AEs, probably because they contain elements of drinking for negative reinforcement reasons (e.g., drinking to reduce tension or anxiety) (Wardell et al., 2012). Thus, these results suggest a broader role of personality in social learning and alcohol outcomes beyond those proposed in the APM.

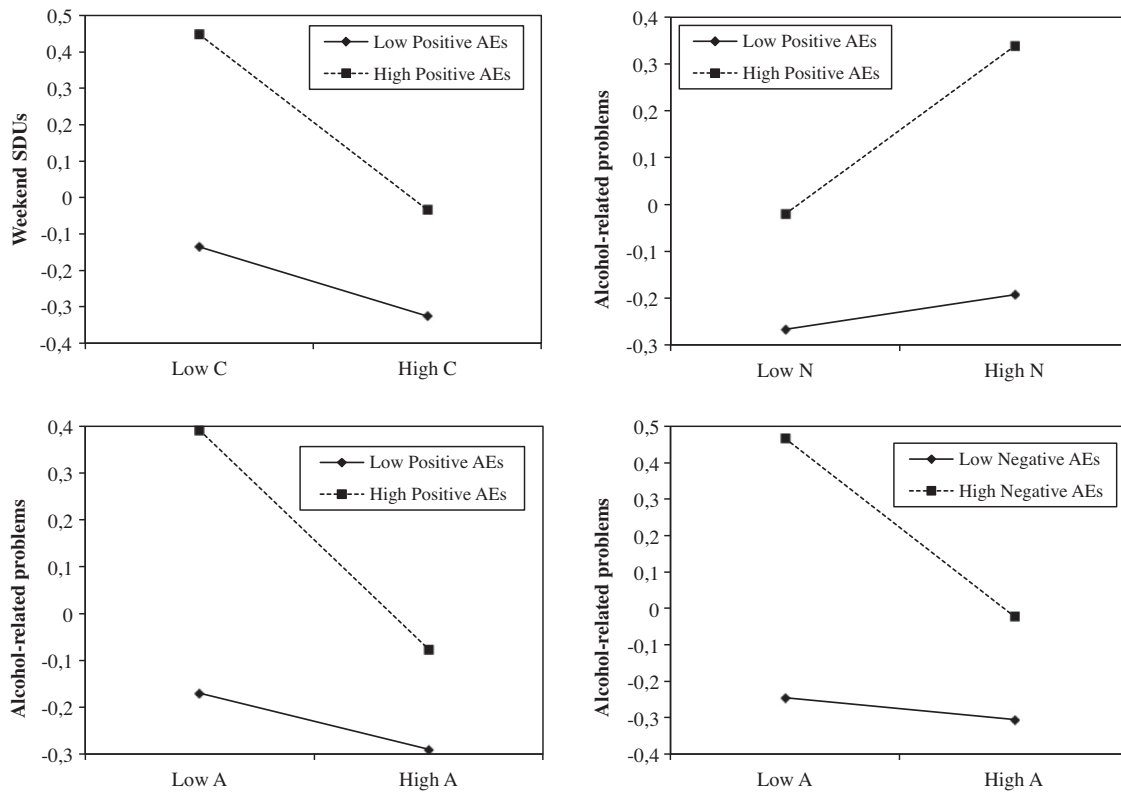


Fig. 3. Moderating effect of expectancies on the personality–alcohol outcomes relationship. Labels “Low” and “High” refer to 1 SD below and above the mean, respectively.

Finally, and in line with our hypothesis, Positive AEs interacted with low C to predict weekend SDUs, and with high N and low A to predict AP. Negative AEs moderated the association between low A and AP. Unlike Fischer, Smith, Anderson, and Flory (2003), E did not interact with AEs, although they found that E interacted with the social facilitation facet of Positive AEs rather than the general dimension. Despite these moderation effects becoming non-significant when Bonferroni’s correction was applied, they were similar to those reported in previous studies (Carlson & Johnson, 2012; Cyders et al., 2007; McCarthy et al., 2001). Thus, our findings indicate that the moderation effects of AEs were not only restricted to disinhibition characteristics, as originally proposed (McCarthy et al., 2001). Our results show that the effect of risky personality traits (low C, low A and N) on alcohol use increased when risky cognitive variables (alcohol expectancies) are also present.

The present study has several limitations. Firstly, because our research is cross-sectional, we cannot determine whether AEs are the cause or consequence of alcohol consumption. Thus prospective longitudinal studies may clarify the nature of the relationships between AE and alcohol outcomes, especially as far as Negative AEs are concerned. Secondly, although personality and AEs were significantly related to alcohol outcomes, they only explain from 7.5% to 37.1% of variance. Thirdly, some relationships between personality and alcohol outcomes have been found in the *post hoc* analyses. In addition, the reported interactions did not remain significant when Bonferroni’s correction was applied. Consequently, these associations clearly deserve replication in future studies.

5. Conclusions

This study examines the relationship of personality with AEs and alcohol outcomes within the FFM framework. While E, low C and low O relate mainly to a more recreational and normative alcohol use (weekend SDUs), N is associated chiefly with AP, and low A

is related to a less normative alcohol pattern (weekdays SDUs and AP). Some of these associations are partially or totally mediated by Positive AEs (E → SDUs, AP; low C → weekend SDUs, AP; N → AP, SDUs) and Negative AEs (N → AP). Additional moderation effects have also been found (low C × Positive AEs → weekend SDUs; N × Positive AE, low A × Positive AEs, low A × Negative AEs → AP). These findings may be useful for improving prevention and intervention programmes for alcohol misuse; for example, developing programmes that are designed to target different personality traits (Conrod, Castellanos-Ryan, & MacKie, 2011) and AEs (Scott-Sheldon & Terry, 2012).

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.paid.2014.10.002>.

References

Bentler, P. M. (2006). *EQS 6 structural equations program manual*. Encino, CA: Multivariate Software Inc.
 Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming* (2nd ed.). Mahwah, NJ: Erlbaum.
 Camacho, L., Mezquita, L., Ibáñez, M. I., Moya, J., Villa, H., Viruela, A. M., et al. (2013). Spanish adaptation of the Expectancy Questionnaire (EQ) about alcohol effects in adolescents. *Psicothema*, 25, 529–535.
 Carlson, S. R., & Johnson, S. C. (2012). Impulsivity is not always associated with student drinking: A moderation study of impulsivity and drinking by positive alcohol expectancies. *Addictive Behaviors*, 37, 556–560.

- 403 Conrod, P. J., Castellanos-Ryan, N., & MacKie, C. (2011). Long-term effects of a
404 personality-targeted intervention to reduce alcohol use in adolescents. *Journal*
405 *of Consulting and Clinical Psychology*, 79, 296–306.
- 406 Corbin, W. R., Iwamoto, D. K., & Fromme, K. (2011). A comprehensive longitudinal
407 test of the acquired preparedness model for alcohol use and related problems.
408 *Journal of Studies on Alcohol and Drugs*, 72, 602–610.
- 409 Costa, P. T., & McCrae, R. R. (1999). *Revised NEO Personality Inventory (NEO-PI-R) and*
410 *NEO Five-Factor Inventory (NEO-FFI). Professional manual*. Madrid: TEA.
- 411 Cyders, M. A., & Smith, G. T. (2008). Emotion-based dispositions to rash action:
412 Positive and negative urgency. *Psychological Bulletin*, 134, 807–828.
- 413 Cyders, M. A., Smith, G. T., Spillane, N. S., Fischer, S., Annus, A. M., & Peterson, C.
414 (2007). Integration of impulsivity and positive mood to predict risky behavior:
415 Development and validation of a measure of positive urgency. *Psychological*
416 *Assessment*, 19, 107–118.
- 417 Dawson, J. F. (2014). Moderation in management research: What, why, when, and
418 how. *Journal of Business and Psychology*, 29, 1–19.
- 419 Dunne, E. M., Freedlander, J., Coleman, K., & Katz, E. C. (2013). Impulsivity,
420 expectancies, and evaluations of expected outcomes as predictors of alcohol use
421 and related problems. *The American Journal of Drug and Alcohol Abuse*, 39,
422 204–210.
- 423 Finn, P. R., Sharkansky, E. J., Brandt, K. M., & Turcotte, N. (2000). The effects of
424 familial risk, personality, and expectancies on alcohol use and abuse. *Journal of*
425 *Abnormal Psychology*, 109, 122–133.
- 426 Fischer, S., Smith, G. T., Anderson, K. G., & Flory, K. (2003). Expectancy influences the
427 operation of personality on behavior. *Psychology of Addictive Behaviors*, 17,
428 108–114.
- 429 Fu, A.-T., Ko, H.-C., Wu, J. Y.-W., Cherng, B.-L., & Cheng, C.-P. (2007). Impulsivity and
430 expectancy in risk for alcohol use: Comparing male and female college students
431 in Taiwan. *Addictive Behaviors*, 32, 1887–1896.
- 432 Gotham, H. J., Sher, K. J., & Wood, P. K. (1997). Predicting stability and change in
433 frequency of intoxication from the college years to beyond: Individual-
434 difference and role transition variables. *Journal of Abnormal Psychology*, 106,
435 619–629.
- 436 Grau, E., & Ortet, G. (1999). Personality traits and alcohol consumption in a sample
437 of non-alcoholic women. *Personality and Individual Differences*, 27, 1057–1066.
- 438 Gullo, M. J., Dawe, S., Kambouropoulos, N., Staiger, P. K., & Jackson, C. J. (2010).
439 Alcohol expectancies and drinking refusal self-efficacy mediate the association
440 of impulsivity with alcohol misuse. *Alcoholism: Clinical and Experimental*
441 *Research*, 34, 1386–1399.
- 442 Harnett, P. H., Lynch, S. J., Gullo, M. J., Dawe, S., & Loxton, N. (2013). Personality,
443 cognition and hazardous drinking: Support for the 2-component approach to
444 reinforcing substances model. *Addictive Behaviors*, 38, 2945–2948.
- 445 Ibáñez, M. I., RUIPEREZ, M. A., Villa, H., Moya, J., & Ortet, G. (2008). Personality and
446 alcohol use. In G. Boyle, G. Matthews, & D. Saklofske (Eds.), *The SAGE handbook*
447 *of personality theory and assessment. Personality theories and models* (Vol. 1,
448 pp. 677–697). Thousand Oaks, USA: Sage Publications Inc.
- 449 John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big-
450 five trait taxonomy: History, measurement, and conceptual issues. In O. P. John,
451 R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research*
452 (3rd ed., pp. 114–153). New York: Guilford Press.
- 453 Kotov, R., Gamez, W., Schmidt, F., & Watson, D. (2010). Linking “Big” personality
454 traits to anxiety, depressive, and substance use disorders: A meta-analysis.
455 *Psychological Bulletin*, 136, 768–821.
- 456 Leigh, B. C. (1989). In search of the seven dwarves: Issues of measurement and
457 meaning in alcohol expectancy research. *Psychological Bulletin*, 105, 361–373.
- Leigh, B. C., & Stacy, A. W. (2004). Alcohol expectancies and drinking in different age
458 groups. *Addiction*, 99, 215–227.
- Li, H. K., & Dingle, G. A. (2012). Using the Drinking Expectancy Questionnaire
459 (revised scoring method) in clinical practice. *Addictive Behaviors*, 37, 198–204.
- López, C., Fernández, S., Fernández, J. R., Álvarez, Á. C., & Secades, R. (2012). Spanish
460 adaptation and validation of the Rutgers Alcohol Problem Index (RAPI).
461 *International Journal of Clinical and Health Psychology*, 12, 251–264.
- Malouff, J., Thorsteinsson, E., Rooke, S., & Schutte, N. (2007). Alcohol involvement
462 and the Five-Factor Model of personality: A meta-analysis. *Journal of Drug*
463 *Education*, 37, 277–294.
- McCarthy, D. M., Kroll, L. S., & Smith, G. T. (2001). Integrating disinhibition and
464 learning risk for alcohol use. *Experimental and Clinical Psychopharmacology*, 9,
465 389–398.
- Mezquita, L., Ibáñez, M. I., Moya, J., Villa, H., & Ortet, G. (2014). A longitudinal
466 examination of different etiological pathways to alcohol use and misuse.
467 *Alcoholism: Clinical and Experimental Research*, 38, 1770–1779.
- National Plan of Drugs. (2013). *Encuentos sobre alcohol y drogas en población general*
468 *en España (EDADES 2011–2012)*. Retrieved from <<http://www.pnsd.msc.es/Categoria2/observa/pdf/EDADES2011.pdf>>.
- Nicolai, J., Moshagen, M., & Demmel, R. (2012). Patterns of alcohol expectancies and
469 alcohol use across age and gender. *Drug and Alcohol Dependence*, 126, 347–353.
- Pabst, A., Kraus, L., Piontek, D., Mueller, S., & Demmel, R. (2014). Direct and indirect
470 effects of alcohol expectancies on alcohol-related problems. *Psychology of*
471 *Addictive Behaviors*, 28, 20–30.
- Read, J. P., & O'Connor, R. M. (2006). High- and low-dose expectancies as mediators
472 of personality dimensions and alcohol involvement. *Journal of Studies on Alcohol*,
473 67, 204–214.
- Rodríguez-Martos, A., Gual, A., & Llopis, J. J. (1999). The “standard drink unit” as a
474 simplified recording system of alcohol consumption and its measurement in
475 Spain. *Medicina Clínica*, 112, 446–450.
- Ruiz, M. A., Pincus, A. L., & Dickinson, K. A. (2003). NEO PI-R predictors of alcohol use
476 and alcohol-related problems. *Journal of Personality Assessment*, 81, 226–236.
- Savin, N., & White, K. (1977). The Durbin-Watson test for serial correlation with
477 extreme sample sizes or many regressors. *Econometrica*, 45, 1989–1996.
- Scott-Sheldon, L. A. J., & Terry, D. L. (2012). Efficacy of expectancy challenge
478 interventions to reduce college student drinking: A meta-analytic review.
479 *Psychology of Addictive Behaviors*, 26, 393–405.
- Settles, R. F., Cyders, M., & Smith, G. T. (2010). Longitudinal validation of the
480 acquired preparedness model of drinking risk. *Psychology of Addictive Behaviors*,
481 24, 198–208.
- Sher, K. J., Grekin, E. R., & Williams, N. A. (2005). The development of alcohol use
482 disorders. *Annual Review of Clinical Psychology*, 1, 493–523.
- Smith, G. J., & Anderson, K. G. (2001). Adolescent risk for alcohol problems as
483 acquired preparedness: A model and suggestions for intervention. In P. M.
484 Monti, S. M. Colby, & T. A. O’Leary (Eds.), *Adolescents, alcohol, and substance*
485 *abuse: Reaching teens brief interventions* (pp. 109–144). New York: Guilford
486 Press.
- Spillane, N. S., Cyders, M. A., & Maurelli, K. (2012). Negative urgency, problem
487 drinking and negative alcohol expectancies among members from one First
488 Nation: A moderated-mediation model. *Addictive Behaviors*, 37, 1285–1288.
- Wardell, J. D., Read, J. P., Colder, C. R., & Merrill, J. E. (2012). Positive alcohol
489 expectancies mediate the influence of the behavioral activation system on
490 alcohol use: A prospective path analysis. *Addictive Behaviors*, 37, 435–443.
- World Health Organization (WHO) (2011). *Global status report on alcohol and health*.
491 Geneva: WHO.