

# Alcohol-related expectancies in adults and adolescents: Similarities and disparities

## *Expectativas relacionadas con el alcohol en adultos y adolescentes: Semejanzas y diferencias*

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### Abstract

This study aimed to contrast student and not student outcome expectancies, and explore the diversity of alcohol-related cognitions within a wider student sample. Participants (n=549) were college students (higher education-typically aged 15-18 years), university students (further education-typically aged 18-22 years) and business people (white collar professionals <50 years) who completed questionnaires in their place of work or education. Overall positive expectancies were higher in the college students than in the business or university samples. However, not all expectancy subcategories followed this pattern. Participant groups of similar age were therefore alike in some aspects of their alcohol-related cognitions but different in others. Similarly, participant groups whom are divergent in age appeared to be alike in some of their alcohol-related cognitions, such as tension reduction expectancies. Research often homogenises students as a specific sub-set of the population, this paper hi-lights that this may be an over-simplification. Furthermore, the largely exclusive focus on student groups within research in this area may also be an oversight, given the diversity of the findings demonstrated between these groups.

*Palabras clave:* Alcohol, Expectativas sobre los efectos, Edad, Experiencia vital.

### Resumen

El propósito de este estudio es contrastar las expectativas sobre los efectos del alcohol entre estudiantes y no-estudiantes, y explorar las diversas cogniciones relacionadas con el alcohol en una muestra estudiantil más amplia. Los participantes (n = 549) son estudiantes de bachillerato (estudios superiores, habitualmente cursados entre los 15-18 años), estudiantes universitarios (estudios habitualmente cursados entre los 18-22 años) y empleados profesionales (oficinistas menores de 50 años) que completaron los cuestionarios un su lugar de trabajo o estudio. En general, los estudiantes de bachillerato tuvieron expectativas positivas más altas que los estudiantes universitarios u oficinistas. No obstante, no todas las subcategorías de expectativas cumplieron este patrón. Respecto de sus cogniciones relacionadas con el alcohol, los grupos de participantes de edades similares mostraron similitudes en algunos aspectos y diferencias en otros. Igualmente, los grupos de participantes de edades dispares tenían algunas cogniciones similares relacionadas con el alcohol, por ejemplo, en las expectativas sobre la reducción de estrés. Con frecuencia, las investigaciones homogeneizan a los estudiantes como un subgrupo específico de esta población; este estudio subraya que esto puede ser demasiada simplificación. Además, el enfoque casi exclusivo sobre grupos estudiantiles en este campo de investigación también puede ser una equivocación, dada la diversidad en los resultados hallados entre estos grupos.

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In the UK, the legal age at which alcohol may be consumed is 18. As such, younger persons may have less direct experience of alcohol consumption to inform their alcohol-related beliefs. The over-reliance on student samples in alcohol research may therefore result in findings which are not necessarily reflective of those older samples with more experience of consumption. Further, variations in experiences within the student cohort may also result in differences in cognitions. Any alcohol use which college students do experience is likely to be substantially different from those University student respondents who can legally drink. Drinking in parks and at home is much more common in those under 18 (Honest, Seymour, & Webster, 2000). On the other hand, drinking in licensed premises is more common from those of 18 and over, but less likely those of UK college age (c.f. Roe & Ashe, 2008). Research based solely student samples, or focussing on individual student groups (college or university students as opposed to both), may therefore incorrectly homogenise alcohol-related cognitions.

Outcome expectancies— the anticipated consequences of alcohol consumption (Reich, Below, & Goldman, 2010) – have a well established role in the decision to drink or exercise restraint (Brown, Goldman, Inn & Anderson, 1980; Goldman, 1994). However, in a systematic review of the literature on this area, Monk and Heim (2013c) found that 79% of the studies identified were based upon student samples. There is limited existing research which appears to suggest age-related variations in alcohol-related cognitions (c.f. for example, Leigh & Stacy, 2004). The over-reliance on student based research may however largely obscure these variations and limit the success of interventions which should be sensitive to the varying social and personal contexts which shape substance use (Davies, 1997). Accordingly, the presented research aimed to assess alcohol expectancies utilising a wider population, in order to assess (dis) similarities which may further elucidate our understanding of alcohol-related cognitions. Specifically, college students, university students and business professionals were examined. It was predicted that positive expectancies (Leigh & Stacy, 2004) would be greater among student than the older, non student, participants.

## Method

### Participants

Responses from 549 participants who drink alcohol (63% Female, 87% White British) were assessed from UK businesses ( $n = 146$ ,  $M = 35.63$ ,  $S.D = 9.24$ ), colleges ( $n = 264$ ,  $M = 17.61$ ,  $S.D = 3.20$ ) and universities ( $n = 146$ ,  $M = 20.22$ ,  $S.D = 3.68$ )<sup>1</sup>.

1 In the UK, college is the higher education system which follows mandatory schooling. Here, students are typically aged 15-18 years. University education is classified as further education and may be entered after college. UK university students are typically aged 18-22 years.

### Procedure and measures

Following ethical approval, paper and electronic questionnaires were distributed at a number of UK colleges, universities and businesses which had agreed to allow their students/employees to participate. This dual approach was used to increase ease of participation (Evans & Mathur, 2005; Schleyer & Forrest, 2000) and flexibility (Sheehan & McMillan, 1999) and this methodology has proved successful in previous research (e.g. Kypri, Saunders, & Gallagher, 2003). It has also been found that responses do not differ whether paper or electronic alcohol questionnaires are used (Kypri, Saunders, Williams, Mcgee, Langley, Cashell-Smith & Gallagher, 2004; Miller, Neal, Roberts, Baer, Cressler, Metrik, & Marlatt, 2002). Each questionnaire consisted the counterbalanced Alcohol Outcomes Expectancy questionnaire (Leigh & Stacy, 1993) was utilised to assess both positive and negative expectancies on a 6 point likert scale (where 1 = no chance of happening, and 6 = certain to happen). For the purposes of this research, these outcome expectancies were assessed in terms of both cumulative positive expectancies (Cronbach's alpha = .90) and negative outcome expectancies (Cronbach's Alpha = .82). Standardised sub categories were also assessed, as per Leigh and Stacy's (1993) factor analysis.<sup>2</sup> Demographic and alcohol consumption questions were also included within the questionnaire. In line with recommendations (McAllister & Davies, 1992), this remained the final component in the questionnaire. These were distributed and completed on campus, within university/college lectures or seminars, or at participants' place of work. Participants were asked to privately complete their questionnaires at the time of distribution before returning their responses.

## Results

### Preliminary analyses

Demographic comparisons (see Table 1) revealed that the significant majority of participants were White British and there were more females than would be expected by chance. Whilst there was no gender split within the business sample ( $p > .05$ ), there were significantly more females than males in both the university ( $p < .001$ ) and college samples ( $p < .001$ ), perhaps owing to the greater numbers of females continuing in education in England (Usher & Medow, 2010). There were also differences revealed between alcohol consumption quantity and frequency, frequency of drunkenness and attitudes towards drinking and

2 These sub categories were as follows and all showed good consistency: Positive Social (Cronbach's alpha = .88), Fun (Cronbach's alpha = .89), Tension reduction (Cronbach's alpha = .69), sex (Cronbach's alpha = .78), Negative Social (Cronbach's alpha = .84), Emotional Relief (Cronbach's alpha = .71), Physical (Cronbach's alpha = .71), Cognitive/Performance (Cronbach's alpha = .76).

Table 1. Demographic and alcohol consumption comparisons between participant groups.

	Participant Group			Statistic x <sup>2</sup> / f
	Business	University	College	
<b>Demographics</b>				
Gender (% Female)	52	69	63	35.85***
Ethnicity (% White British)	85	88	87	642.63***
Age (Average)	35.63 (9.24)	20.22 (3.68)	17.61 (3.20)	496.78***
<b>Consumo de alcohol</b>				
Attitudes towards drinking	3.43 (0.75)	3.61 (0.66)	3.70 (0.83)	25.98***
Attitudes towards drunkenness	2.70 (0.94)	3.30 (0.89)	3.41 (0.98)	68.26***
Frequency of drinking	4.28 (1.52)	4.47 (1.43)	3.74 (1.37)	13.40***
Frequency of intoxication	2.32 (1.23)	3.85 (2.88)	3.22 (1.54)	22.44***
Quantity of drinking	2.19 (1.42)	4.68 (1.75)	3.83 (2.05)	68.25***

Note. \*\*\*  $p < .001$

Table 2. Means (standard deviations) of participants' standardized outcome expectancy scores across participant groups.

	Participant Group		
	Business	University	College
<b>Positive Expectancy Ratings</b>			
Social	3.86 (0.74)	4.20 (0.78)	4.35 (0.88)
Fun	4.07 (0.69)	4.49 (0.76)	4.51 (0.88)
Sex	3.56 (0.93)	3.73 (1.07)	3.85 (1.33)
Tension	1.90 (0.41)	2.00 (0.48)	2.12 (0.65)
<b>Negative Expectancy Ratings</b>			
Social	2.03 (0.99)	2.30 (1.05)	2.43 (1.14)
Emotional	2.58 (0.85)	2.60 (0.85)	2.47 (1.34)
Physical	3.38 (0.91)	3.35 (0.90)	3.17 (1.12)
Cognitive	3.81 (0.85)	3.99 (0.87)	3.66 (0.99)

drunkenness (see Table 1). Both the college and university samples reported drinking greater quantities ( $p < .001$ ), being drunk more frequently ( $p < .001$ ) and having more positive attitudes towards drinking ( $p < .001$ ) and drunkenness ( $p < .001$ ) than did the business sample. The business ( $p < .001$ ) and the university sample ( $p < .001$ ) also reported drinking more frequently than did the college sample, whilst university and business sample's drinking did not differ in its frequency ( $p > .05$ ). Attitudes towards drinking ( $p > .05$ ) and drunkenness ( $p > .05$ ) did not differ between the university and college samples.

### Main Analyses

Participants' expectancy scores were standardised by the calculation of an average score in order to ensure a consistent minimum and maximum score on each sub-category.

Table 2 displays these averaged means and standard deviations of participants' overall alcohol-related expectancies, as well as their sub-category scores. Further analyses of these cognitions were conducted by a series of Factorial ANOVAs and post hoc analyses, in the form of independent samples  $t$ -tests with adjusted  $p = .01^3$ .

A 3 (Participant group: college students, university students and business persons) x 2 (Expectancy: positive or negative) Factorial ANOVA of mixed design was conducted (sphericity not assumed, Greenhouse-Geisser correction implemented). This revealed a significant main effect of expectancy ( $F(1, 542) = 126.23, p < .001, \eta^2 = .19$ ) which showed that positive outcomes were judged to be significantly more likely than negative outcomes. A significant main effect of participant group ( $F(2, 542) = 6.85, p < .01, \eta^2 = .03$ ) and a significant 2 way interaction between participant group and expectancy ( $F(2, 542) = 126.23, p < .001, \eta^2 = .08$ ) was also revealed. Post hoc analyses indicated that negative expectancies did not differ between any of the participant groups ( $p > .05$ ). On the other hand, positive expectancies were higher in the college sample than in the business ( $t(354.33) = 3.55, p < .001$ ) and university samples ( $t(399) = 6.37, p < .001$ ). Positive expectancies did not, however, differ significantly between the business sample and the university sample.

3 Whilst error adjustments are required to control for the possibility of a type 1 error, traditional Bonferroni adjustments for multiple testing could prove too stringent (Nakagawa, 2004; Tabachnik, B.G., Fidell, 2001) thus increasing the possibility of type 2 error. Furthermore, the inter-correlation between independent and dependent variables meant that Bonferroni adjustments were deemed particularly unsuitable (Sankoh, Huque, Dubey, 1997). A standard .01 adjustment was thus adopted. Similar methods of error correction have been utilised in previous research, in preference to overly conservative Bonferroni adjustments (e.g. Adams, 2007; Montgomery, Fisk, Newcombe & Murphy, 2005).

In light of these preliminary findings, further analyses were conducted to examine positive expectancies in terms of their sub categories (social, fun, sex & tension). A 4 (Positive expectancy: social, fun, sex, tension reduction) x 3 (Participant group: college student, university student or business person) Factorial ANOVA of mixed design was conducted (sphericity not assumed, Greenhouse-Geisser correction implemented). This revealed significant main effects of positive expectancy ( $F(3, 1464) = 1017.98, p < .001, \text{Eta}^2 = .68$ ) and participant group ( $F(2, 488) = 15.18, p < .001, \text{Eta}^2 = .06$ ), with these results being qualified by a significant 2 way interaction between positive expectancy and participant group ( $F(6, 1464) = 21.91, p < .05, \text{Eta}^2 = .02$ ). A series of post hoc analyses demonstrated that positive social expectancies were significantly more endorsed in the college ( $t(337.13) = 6.04, p < .001$ ) and university samples ( $t(230) = -3.39, p < .01$ ) than in the business sample. Yet, positive social expectancies did not differ significantly between the college and university students ( $t(349) = 1.36, p = .18$ ). Positive fun ( $t(359.79) = 5.47, p < .001$ ) and tension reduction ( $t(398.65) = 3.66, p < .001$ ) outcome expectancies were also significantly higher in the college than in the business sample. Furthermore, university students endorsed positive fun expectancies ( $t(276.41) = 4.93, p < .001$ ) significantly more than the business sample, whilst neither fun nor tension reduction expectancies differed between college and university students. University students' tension reduction expectancies did not, however, differ from those of the business sample. Finally, positive sexual expectancies were found to be comparable across the three participant groups ( $p > .05$ ).

## Discussion

As anticipated, it was found that positive expectancies were higher in the college students than in the university or business samples. Such findings may suggest that the culmination of early social observations/development (Critchlow, 1986) and experiences of consumption throughout adolescence (Leigh & Stacy, 2004), may result in a shift in expectancies in late adolescence/early adulthood (Bekman et al., 2011; Leigh & Stacy, 2004; Johnson & Johnson, 1995; Shope, Copeland, Maharg, Dielman, & Butchart, 1993). However, the examination of positive expectancies sub categories further elucidates these results.

Here, alcohol-related cognitions were not consistently divergent between participant groups. For instance, positive fun and social outcome expectancies were higher in the college and university samples than in the business sample. The college and university sample did not, however, differ in their social and fun outcome expectancies. However, tension reduction expectancies were only higher in the college than the business sample, whilst the university and business samples did not differ in these tension

reduction expectancies. There was therefore a variation in outcome expectancies which could not seemingly be explained by age alone.

It is reported that the fun and socialisation components of alcohol consumption are particularly important to UK student alcohol consumption (Plant & Plant, 2006). In mature alcohol consumption, however, such constructs seem less important (Labouvie, 1996). The shared student experience of alcohol consumption may therefore be the cause of the observed homogeneity between college and university students' fun and socialisation expectancies. Furthermore, the social/communal focus on alcohol may make social outcomes seem particularly pertinent for student samples (c.f. 'Focus Theory of Normative Conduct' Kallgren, Reno, & Cialdini, 2000). Conversely, the experience of using alcohol as a method of emotion regulation has predominately been evident in younger adolescents (Pohorecky, 1991) and this may therefore account for the higher tension reduction expectancies observed in college students relative to the other groups in this study.

Experience of alcohol consumption, and not solely age, may therefore offer a better explanation of variations on alcohol-related expectancies. This may account for the cognitive similarities observed between groups of participants whom are vastly different in age, whilst, on the other hand, different cognitions were exhibited within the UK student population (i.e. between the college and university students) despite their similar ages. In other words, there appear to be sub-categories within the UK student population in terms of their shared expectancies. In a similar vein, expectancy based sub-categories have been identified within the university student population (Leeman, Kulesza, Stewart, & Copeland, 2012). Homogenising student populations may therefore be unwise, just as it is unwise to focus on exclusively student samples.

It must be noted that this study administered questionnaires in only one setting (lecture/work place), meaning that future research may be improved by examining responses in other environmental contexts, where beliefs may be different (c.f. Labrie, Grant, & Hummer, 2011; Monk & Heim, 2013a; 2013b; 2013c; 2014; Wall, Mckee, & Hinson, 2000; Wall, Hinson, McKee, & Goldstein, 2001). It may also be advisable that future research examines the effect of the alcohol consumption measure used (c.f. Zamboanga, Horton, Leitkowski, & Wang, 2006), in light of previously observed variations depending on the quantity/frequency measure administered (e.g. Baldwin, Oei, & Young, 1993). It must also be noted that there was a gender imbalance in the current university and college student samples – with more females being present, perhaps owing to the greater numbers of females continuing in education in England (Usher & Medow, 2010). The current results may not therefore generalise to male students in these groups and future research may be advised to purposefully sample this

group in order to test this assertion. Lastly, it should be noted that age and alcohol consumption may be confounding variables in the present research. Indeed, the younger age group (college sample) may have contained a number of people who consumed very little, whilst the older groups may contain people who have reduced drinking for various reasons, which may have altered expectancies and beliefs (Leigh & Stacy, 2004). Nonetheless, the present study offers further insight into the dynamic nature of alcohol-related cognitions in both adolescent and adult samples.

### Conflict of interest statement

The authors declare no conflicts of interest.

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