Drinking Motives, Perceived Norms, and Adolescents' Drinking

(Article begins on next page)

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Bergagna Elisa

Tartaglia Stefano

ABSTRACT

Various cognitive and social factors influence the consumption of alcohol during adolescence. Accurate assessment of the relative importance of these variables is crucial for planning interventions against alcohol-related problems. This study compared the effects of drinking motives, perceived parent, and peer alcohol consumption on alcohol use in Italian adolescents. We collected the data by means of a self-report questionnaire on a sample of 229 secondary school students who were 15-20 years old. To test the influence of different groups of predictors, we performed three hierarchical regression and one binary logistic regression analyses. We found that perceived norms about drinking influenced adolescents' alcohol consumption: perception of friends' alcohol use was of particular significance, whereas perceived parental norms had an influence only concerning alcoholic beverages with low alcohol content, such as beer. Regarding drinking motives, internal motivations were related to risky drinking, whereas external motivations were not associated with problematic alcohol consumption.

KEYWORDS: Alcohol consumption; Adolescence; Drinking motives; Perceived parental norms; Perceived peer norms

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Introduction

Drinking alcohol is a common behaviour among adolescents in Europe and North America. The non-frequent consumption of small quantities of alcohol is not dangerous, whereas high levels of consumption may have negative health, social, and psychological consequences. For instance, numerous consequences such as unplanned pregnancies, sexually transmitted diseases, accidents, suicide attempts, violence, and academic failures have been associated with heavy drinking (Gmel & Rehm, 2003; Perkins, 2002). Different variables combine to influence the consumption of alcohol among adolescents, and cognitive factors seem to be the proximal predictors of involvement with alcohol (Kuther & Timoshin, 2003). In particular, some cognitive and evaluative constructs, such as drinking motives or expectations and perceived norms about drinking, have emerged as strong predictors of adolescent alcohol use (Kuntsche, Knibbe, Gmel & Engels, 2005; Kuther & Higgins-D'Alessandro, 2003). The Motivational Model (Cox & Klinger, 1988) is one of the main theoretical frameworks for the investigation of alcohol consumption. This model postulates four motivations for drinking alcohol based on the valence (positive or negative) and the source (internal or external) of the desired outcomes of drinking: individuals drink to obtain positive outcomes or to avoid negative consequences, and they are motivated by internal or external rewards. Across the dimensions of valence and source, we obtain four categories of motivations. The first one is enhancement (internally generated with positive valence): drinking to enhance positive mood. The second is social motive (externally generated with positive valence): drinking to obtain social rewards. The third one is coping (internally generated with negative valence): drinking to cope with negative emotions. The last one is conformity (externally generated with negative valence): drinking to avoid social rejection. Previous research has found that drinking motives are strong predictors of alcohol consumption and are the most proximal antecedents of alcohol use (Tartaglia, 2014). Different motives are related to different styles of consumption and alcohol-related problems. Enhancement motives are typically linked to heavy drinking, even if not always problematic (Kairouz, Glicksman, Demers & Adlaf, 2002; Kuntsche et al., 2005). Social motives are associated with a moderate and infrequent drinking (Kuntsche et al., 2005; Windle, 1996). Coping motives are mainly linked to alcohol abuse and alcohol-related problems (Labouvie & Bates, 2002; McNally, Palfai,

Levine & Moore, 2003). Conformity motives are associated with moderate drinking in specific social contexts (Cooper, 1994; Graziano, Bina, Giannotta, & Ciairano, 2012). People who drink for enhancement and coping motives were found to frequently drink spirits because their consumption raises alcohol consumption in the blood faster than other beverages: consequently, the drinker experiences the effects of alcohol more rapidly (Kuntsche, Knibbe, Gmel & Engels, 2006). However, beer has also been found to be a beverage sought after by teenagers to get drunk (Clapp & Shillington, 2001; Lintonen & Konu, 2003). Because beer is cheaper and more readily available than spirits, it becomes the beverage of choice for adolescents who like to get drunk but are minors and have a restricted budget (Smart & Walsh, 1995). In contrast, people who drink for social and conformity motives seem to drink more moderately and consume alcoholic beverages with low alcohol content (Kuntsche et al., 2006; Tartaglia, Gattino, & Fedi, 2017). In particular, the endorsement of conformity motives is less related to specific expectations about alcohol effects but rather the individual's characteristic manner of social interactions, so people who drink for conformity motives tend to drink very little (Simons, Correya, & Carey, 2000).

In addition to personal motivations, perceived social norms influencing alcohol consumption have a great effect on adolescent alcohol use (Borsari & Carey, 2001; Kuther & Timoshin, 2003). Observing the behaviour of others is one way to obtain information about the normal way to behave, and the perceptions of others' behaviour may be particularly influential in motivating the adolescents' behaviour. In adolescence, the most important socialization contexts are family and peers, which serve as significant indicators of social norms and model the behavioural habits of drinking (Kuther & Timoshin, 2003). Perceived parental norms about drinking, derived from the perception of parental drinking, have been sometimes associated with adolescent alcohol use (Kuther & Timoshin, 2003; Reifman, Barnes, Dintcheff, Farrell & Uhteg, 1998), whereas other research found that perceptions of parental alcohol use did not predict adolescent alcohol consumption (Keefe, 1994; Kuther & Higgins-D'Alessandro, 2003). The family remains an important place of social influence, however the development of new social networks characterizes the adolescence period, and peer groups become more important when individuals begin to build their identity and gain autonomy from parents. In fact, scholars found that the perception of peer alcohol use was one of the strongest predictors of adolescent drinking behaviour (Borsari & Carey, 2001), and much more predictive than the perception of parental use (Kuther & Higgins-D'Alessandro, 2003). Adolescence is a developmental period

of heightened responsiveness to social rewards, and this implies an increasing desire to fit in among peers (Spear, 2000). Some authors (Steinberg, 2010) have suggested that social reinforcement is especially influential during this developmental period because social reinforcement is sensitive to the interaction between changes in two different neurobiological systems: a socioemotional system and a cognitive control system. According to Steinberg's dual systems model, adolescent behaviour is hypothesized to be stimulated by an increase in dopaminergic activity within the socioemotional system that might lead to a heightened social reward seeking. However, this increase in reward-seeking precedes the maturation of the cognitive control system that allows self-regulation and impulse control. This temporal gap between the arousal of the socioemotional system and the total maturation of the cognitive control system seems to create a period of increased vulnerability to risky behaviours, such as alcohol consumption, due to a higher inclination to seek rewards (Steinberg, 2008).

Drinking motives and perceived peer and parental norms are strong predictors of alcohol consumption, and there have been numerous studies focused on these features. Nevertheless, we need to acquire a better understanding of cognitive and social factors correlated to adolescent alcohol consumption in specific national contexts because different countries have different attitudes and patterns of alcohol use (Room et al., 2012). In Italy, as in other Mediterranean countries, drinking is part of daily life, and alcohol is often moderately consumed at mealtimes. The drinking patterns related to intake of alcoholic beverages in these countries (e.g., Italy) are different compared with countries (e.g., Northern Europe countries) where drinking is episodic and often excessive (Allamani, Anav, Cipriani, Rossi & Voller, 2007). Furthermore, in countries in which alcohol is not well integrated into family life, adolescents have relatively fewer opportunities to observe parental drinking behaviours and be influenced by parental norms about drinking. This can explain the results of studies carried out in certain countries where perceived parental norms about drinking did not predict adolescent alcohol consumption (Kuther & Higgins-D'Alessandro, 2003). In spite of the traditional drinking habits, consumption of alcohol in Italy has been decreasing during the last forty years, and the amount of alcohol consumed is now lower than in most of the European countries (ESPAD Group, 2016). Moreover, Italian adolescents' style of alcohol consumption is changing: according to the annual report published by the European School Survey Project on Alcohol and Other Drugs (ESPAD Group, 2016), the main alcoholic beverage is beer, and spirits were preferred over wine, which is the traditional Italian

alcoholic beverage. The problem of binge drinking is also increasing: in the last report of ESPAD (2016), every third student in Italy (34%) reported heavy episodic drinking during the last 30 days. There is more than one definition of binge drinking, and here we refer to the one of Wechsler and Nelson (2001) that is drinking five or more drinks in a row. This alcohol consumption pattern, which is emerging among younger people, coexists with the traditional one, typically Mediterranean, that is sustained by a group of adults still bound to the socializing or nutritional implications of drinking (Cipriani & Prina, 2007). Southern Europeans tend to equate alcohol with spirits, which are rarely consumed in the family context, while they may identify beer with soft drinks (Allamani et al., 2007), which are not considered a health risk, unlike wine and spirits, and sometimes replaces the wine in Italian homes (Simpura, 1998).

The investigation of cognitive and social factors related to alcohol use may help understanding these changes in alcohol consumption among Italian adolescents. In particular, even if there is much literature on drinking motives, most studies have been conducted in the American context, which is a different drinking culture (Kuntsche et al., 2005). Moreover, in the Italian context, the emerging problem of binge drinking has been mainly investigated among young adults (D'Alessio, Baiocco & Laghi, 2006; Tartaglia, 2014; Tartaglia, Fedi & Miglietta, 2017), whereas research on adolescents is scarcer. We choose to focus on this specific age group because previous research has suggested that it is during this time that an early intervention can reduce alcohol-related problems later in life (Cable & Sacker, 2008).

The present study aims to compare the effects of drinking motives and perceived social norms about drinking on alcohol consumption in Italian adolescents. We want to account for the effects of gender and age, because alcohol consumption has been found to differ in the population depending on both sex and age (Kuntsche, Rehm & Gmel, 2004). Regarding gender, in almost all studies where gender differences were reported, a higher consumption of alcohol was more common among males than females (Ariza Cardenal & Nebot Adell, 2000). Regarding age differences, the higher prevalence of alcohol consumption and binge drinking was found in late adolescence or early adulthood compared with early adolescence; that is, older teenagers seem to drink more than younger adolescents (Kuntsche et al., 2004).

On the basis of previous literature, we expected that (a) males and older people would drink more than females and younger people (Kuntsche et al., 2004); (b) adolescent consumption would increase with perceiving peer and parent behaviour as supportive of drinking (Borsari & Carey, 2001; Kuther & Timoshin,

2003); and (c) drinking motives would differentially impact alcohol use, in particular, individual motivations (e.g., enhancement and coping) would increase binge drinking frequency (Kuntsche et al., 2005).

We focused the study on the consumption of the alcoholic beverages preferred by Italian adolescents (i.e., beer and spirits), the general alcohol consumption which takes place with peers, and the frequency of binge drinking. Our study considers problem drinking based on rates and levels of consumption, such as binge drinking measures, whereas we do not measure solitary drinking, a major predictor of alcohol-related problems, because this pattern is much less common in adolescence compared with adulthood.

Method

Participants

We selected the participants via a purposive sampling method choosing four classes from three different secondary schools: one lyceum, one technical school, and one vocational school. We contacted the students in the classrooms. The participation was voluntary and the participants did not receive any incentive to respond. All the contacted students accepted to participate. Anonymity was guaranteed. The sample included 229 adolescents (57.2% male, 42.8% female; age range 15-20 years, mean 16.69, SD 1.14), of whom, 30.1% attended the lyceum, 36.2% the technical school, and 33.6% the vocational school.

Measures

Participants completed a self-report questionnaire that included different sets of indicators. The ones used in the analyses were as follows:

- The Italian version of the Drinking Motive Questionnaire Revised Short Form (DMQ-R SF; Kuntsche & Kuntsche, 2009; Mazzardis, Vieno, Kuntsche, & Santinello, 2010) that included 12 items. The instructions for the participants were 'In the last 12 months, how often did you drink…'. Items belong to four subscales measuring different motives, Enhancement (e.g., 'to get high?') (Cronbach's α = .78), Social (e.g., 'because it helps you enjoy a party?') (α = .83), Conformity (e.g., 'to fit in with a group you like?') (α = .82), and Coping (e.g., 'to forget about your problems?') (α = .81). Items were rated on a 5-point Likert-type scale ranging from 1 (almost never) to 5 (almost always).

- A set of alcohol consumption indicators. Two items investigated the frequency of consumption of beer and spirits on a 5-point Likert-type scale ranging from 1 (never) to 5 (every day). One item measured the average number of drinks consumed when going out with friends. One item asked how many times during the last month the participants drank five or more drinks in a row (i.e., binge drinking).

- A set of items investigating the perceived alcohol consumption of parents and peers. Four items investigated the perceived frequency of consumption of beer and spirits of parents and peers on a 5-point Likert-type scale ranging from 1 (never) to 5 (every day). One item measured the perceived average number of drinks consumed by friends when going out. One item asking the perceived frequency of friends' binge drinking on a 5-point Likert-type scale ranging from 1 (never) to 5 (more than once a week).

- A brief list of sociodemographic items (e.g., gender, age).

In addition to descriptive statistics, we tested the influence of different groups of predictors on the alcohol consumption indicators via hierarchical regression and binary logistic regression analyses.

Results

Descriptive statistics

Table 1 reports the means and standard deviation of the variables concerning alcohol consumption. On a 5-point scale, participants reported drinking beer more frequently than spirits (paired t-test = 5.29, p< .01). They estimated drinking on average 1.99 (SD = 2.05) drinks when going out with friends. Concerning binge drinking, 68.9% of the participants never drank five or more drinks in a row during the last month, 11.3% did it once, and the others did it more than one time. The estimated frequency of parents' consumption compared with participants' consumption is slightly higher for beer (paired t-test = -7.07, p < .01) and slightly lower for spirits (paired t test = 3.29, p < .01). Participants perceived that friends drink more than they do. The perception is that friends drink beer (paired t-test = -13.36, p < .01) and spirits (paired t-test = -15.18, p < .01) more frequently than they do. Moreover, participants estimated that when going out, their friends drink more beverages (paired t-test = -7.13, p <. 01). The average frequency of friends' binge drinking on a 5-point scale was 2.41 (SD = 1.01). Table 2 presents the descriptive statistics of the DMQ-R SF subscales

and correlations between drinking motives. We tested the differences between the means scores of the

drinking motives with paired t-tests. All the means are significantly different from each other. The motives

with positive valence (Enhancement and Social) had higher scores compared with the motives with negative

valence. All the drinking motives correlated with the other subscales of DMQ-R SF except for Conformity

and Coping that did not correlate the one with the other.

The regression analyses on alcohol consumption

To test the influences hypothesized above, we performed three multiple regression analyses in which the

frequency of consumption of beer, the frequency of consumption of spirits, and the average number of drinks

consumed when going out were regressed onto sociodemographic features (e.g., gender and age), perceived

parental and peer norms about drinking (i.e., perceived parents' and peers' alcohol consumption), and

drinking motives. In all the models, we entered the predictors in the analysis in three steps; first the socio-

demographics were entered; then, the norms about drinking; and lastly, the drinking motives. Concerning the

frequency of beer consumption (Table 3), the model explained a good proportion of the variance (R^2 = .38).

Being male had a positive effect (β = .27). The perceived parental frequency of beer consumption had a

positive effect (β = .20) similar to the positive effect of perceived peers' frequency of beer consumption (β =

.18). Enhancement (β = .19) and coping (β = .13) motives also had positive effects. The explained variance

of the frequency of spirits consumption was R^2 = .21 (Table 4). The only independent variable having a

significant effect was the enhancement drinking motive (β = .23) that increased the consumption. The

regression model of the number of drinks consumed when going out (Table 5) explained a great proportion

of variance (R^2 = .50). Being male had a positive effect (β = .15). The perceived number of drinks consumed

by friends had a positive effect (β = .38). The externally generated drinking motives had opposite effects: the

social motive had a positive one (β = .32), whereas the conformity motive had a negative one (β = -.16).

We wanted to test the effects of the same independent variables on the number of times participants binge

drank in a month. This variable had a distribution very different from a normal one and the majority of the

participants never binge drank in the last month. For this reason, we transformed the variable in a

dichotomous one: at least one binge drink episode in the last month (0 = no; 1 = yes). Then, we performed a

binary logistic regression estimating the effect of the independent variables on the probability of binge

drinking (Table 6). The fit of the model was acceptable: $\chi^2(7) = 67.36$, p < .01. Five independent variables increased significantly the probability of binge drinking: being male, being older, having a higher perceived frequency of friends' binge drinking, and having enhancement and coping drinking motives.

Discussion

The present study aimed at comparing the effects of drinking motives and perceived parental and peer norms about drinking on the alcohol consumption of Italian adolescents, accounting for the effects of gender and age. Adolescents who had taken part in this study did not drink frequently. The consumption of beer and especially that of spirits was not frequent, and less than a third of the sample had binge drunk in the last month, which is a lower proportion compared to results from the last report of the ESPAD (2016). Consistent with previous research on Italian university students (Tartaglia, 2014), the main drinking motives among adolescents were both internally and externally generated positive motives. Enhancement and social motivations had mean values higher than the negative motivations, i.e., coping and conformity. Most adolescents expected to obtain positive outcomes from alcohol consumption, probably for the euphoric effects of alcohol and its social function as alcohol is widely accepted in Italian culture (Beccaria & Prina, 2010).

Regarding sociodemographic features, the results confirmed the influence of gender on alcohol use (Kuntsche et al., 2004; Tartaglia et al., 2017): consumption of beer and the average number of drinks consumed when going out, as well as the probability of binge drinking, were higher among males. Age was related only to binge drinking, and consistent with previous research, the prevalence of binge drinking was higher among older adolescents (Kuntsche et al., 2004). In contrast, increased age did not increase the consumption of all the alcoholic beverages or the average number of drinks. In general, younger people did not drink less than older people did, but they had a lower risk of binge drinking.

Consistent with previous research (Borsari & Carey, 2001; Kuther & Timoshin, 2003), the results confirmed the importance of perceived social norms on adolescent alcohol use, in particular, perceived peer norms about drinking seem to be a strong predictor. Students drink more beer and a higher number of drinks when they perceive that their friends are engaging in the same behaviour. Furthermore, when adolescents perceive that binge drinking is acceptable and supported because friends frequently do it, they are at a higher risk of

experiencing the same behaviour. Adolescence is a developmental period of increased reward-seeking from peers (Steinberg, 2010), so if adolescents perceive alcohol consumption as normative in their peer group, they risk getting involved in dangerous behaviours, such as heavy drinking.

Regarding parental norms about drinking, we tested the effects of perceived parents' drinking behaviour on adolescent beer and spirits consumption, in order to verify the presence of a 'mirroring' effect. Adolescent beer consumption seems to be related to the parental one: the more adolescents perceive that beer consumption is an acceptable behaviour because of the consumption in their parents, the more adolescents drink beer as well. We did not find a similar results with spirits, probably because they were not frequently consumed in these Italian homes. As we can see from the distribution of responses in our sample, participants reported that their parents drink spirits less frequently than beer.

The results confirmed the important role of drinking motives in predicting drinking behaviour. They differentially predicted the frequency of consumption of both beer and spirits, the average number of drinks consumed when going out, and binge drinking. Consistent with previous research (Kuntsche et al., 2006), enhancement motives were related to the consumption of both beer and spirits. Adolescents who like to have fun, to feel the effects of alcohol, and to get drunk, frequently drink these alcoholic beverages. In the present study sample, a higher frequency of consumption of beer but not spirits was predicted by the coping motivation. This last result is in contrast with the findings of previous studies, that have observed strong relationships between coping motivations and spirits consumption (Graziano et al., 2012; Kuntsche et al., 2005; Lintonen & Konu, 2003). In fact, people who drink to cope with negative emotions seem to prefer alcoholic beverages with a higher percentage of ethanol, in order to reduce tension rapidly. However, it might be that adolescents in our sample use beer to achieve this goal because of the cheaper price and the easier availability (Smart & Walsh, 1995). Individual motives were related to the risk of binge drinking too. The adolescents who binge drank at least once in the last month, reported higher enhancement and coping motivations. Since binge drinking can be considered a problematic way to drink, because it can lead to intoxication, we can state that individual motives are related to a risky drinking. This result is consistent with previous research maintaining that enhancement motives are highly associated with heavy drinking and coping motivations are mainly related to alcohol abuse and alcohol-related problems (Kuntsche et al., 2005). In contrast, external motivations were differentially associated with the average number of drinks consumed

when going out. This variable sought to assess the more usual patterns of alcohol intake, as opposed to the binge drinking measure that identifies heavy occasional intake. Social motives positively affected the average number of drinks consumed when going out. During adolescence, social meetings become increasingly important and teenagers might perceive that slightly more alcohol would help them to get in a party mood and gain an improved status at social gatherings. However, adolescents who endorse social motives and drink more during social occasions, do so in a context of moderate consumption. In fact, social motives did not predict binge drinking. This result is consistent with previous studies, in which social motives are associated with moderate drinking (Kairouz et al., 2002; Kuntsche et al., 2005). In contrast, the conformity motive was negatively related to the average number of drinks consumed when going out. Adolescents who consider drinking as a way to be accepted in their peer group seem to drink as little as possible and just enough to not feel excluded. Moreover, the lower amount of alcohol consumed might be determined by the lack of interest in experiencing greater alcohol effects (Simons et al., 2000).

The present study has some limitations. Relying exclusively on adolescent self-reports, measures of alcohol consumption might be affected by social desirability, even if anonymity and confidentiality were assured. Another limitation of the study was the sampling method that did not result in a sample that was representative of the Italian population of adolescent students. A replication of this study in other samples and countries would strengthen the interpretations. Finally, in the present study there was no measurement of alcohol-related problems, even if the variables that we did measure are important for planning interventions against these problems.

To sum up, the present study confirmed the role of perceived social-drinking norms in influencing adolescents' consumption of alcohol. When beer consumption is perceived as an acceptable behaviour because their parents drink beer, adolescents develop positive attitudes towards the drink and take up the behavioural habits of drinking beer themselves.

The influence of friends is of particular significance. Our results suggest that peers become increasingly influential during adolescence, and if adolescents perceive alcohol use as a normative behaviour in their peer group, they can become involved in potentially dangerous behaviours such as alcohol consumption and abuse.

Drinking motives were confirmed as having an important role in predicting different patterns of alcohol consumption (Kuntsche et al., 2005), and a relevant distinction between internal and external motivations has emerged. Internal motivations were related to risky drinking whereas external motivations were not associated with problematic alcohol consumption. We noticed that the role of perceived peer norms about drinking has emerged as a strong predictor of adolescent alcohol consumption and was associated with an increase in the consumption of beer, the average number of drinks consumed when going out and the frequency of binge drinking. In contrast, social drinking motives were only a predictor of the average number of drinks.

From a prevention and intervention perspective, our results emphasize the need to promote among adolescents a critical consideration of their motives for drinking. Interventions might focus on the illusory coping function carried out by heavy drinking and help adolescents to develop alternative coping strategies for managing stress and anxiety and finding alternative ways of enhancing pleasant emotions. Coping skills can be taught through some empirically supported programmes, such as Life Skills Training.

Furthermore, a number of studies have demonstrated that adolescents misperceive peer drinking norms, in particular, they tend to overestimate levels of alcohol consumption by their friends (Lewis & Neighbors, 2004; Perkins, Meilman, Leichliter, Cashin & Presley, 1999). Therefore, interventions should be directed to change these misperceptions of peer drinking norms. Finally, although the parental drinking norms could be misperceived by the adolescents, it seems more important to raise awareness among parents about the relevance of their modelling behaviour and advise them not to underestimate beer, even beer with low alcohol content.

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TABLES

Table 1. *Descriptive statistics on alcohol consumption.*

	Mean	SD
Participants' consumption		
Beer	2.24	1.14
Spirits	1.85	.95
Number of drinks when going out with friends	1.99	2.05
Binge drinking episodes in the last month	.81	1.72
Perceived parents' consumption		
Beer	2.87	1.16
Spirits	1.59	.79
Perceived friends' consumption		
Beer	3.24	1.00
Spirits	3.04	1.07
Number of drinks when going out with friends	3.28	3.15

Table 2. *Descriptive statistics and correlations for drinking motives*.

	Mean	SD	Person's r		
			1	2	3
1. Enhancement	2.39	1.07			
2. Social	2.57	1.05	.69**		
3. Conformity	1.33	.66	.15*	.27**	
4. Coping	1.76	.89	.33**	.40**	.13

** p<.01; * p<.05

Table 3. *Hierarchical regression analysis on frequency of beer consumption.*

Independent variables	Step 1	Step 2	Step 3
Gender (1 = Male)	.30**	.29**	.27**
Age	.20**	.07	.03
Perceived norms			
Parents' frequency of beer consumption		.20**	.20**
Peers' frequency of beer consumption		.31**	.18**
DMQ-R SF			
Enhancement			.19*
Social			.12
Conformity			.12
Coping			.13*
R^2 (adjusted)	.12	.25	.38
Change in R^2		.13	.13

** $p<.01$; * $p<.05$

Table 4. *Hierarchical regression analysis on frequency of spirits consumption.*

Independent variables	Step 1	Step 2	Step 3
Gender (1 = Male)	.10	.12	.10
Age	.19**	.12	.08
Perceived norms			
Parents' frequency of spirits consumption		.05	-.02
Peers' frequency of spirits consumption		.23**	.09
DMQ-R SF			
Enhancement			.23**
Social			.11
Conformity			.08
Coping			.14
R^2 (adjusted)	.04	.08	.21
Change in R^2		.04	.13

** p<.01; * p<.05

Table 5. *Hierarchical regression analysis on average number of drinks consumed when going out.*

Independent variables	Step 1	Step 2	Step 3
Gender (1 = Male)	.19**	.14*	.15*
Age	.25**	.14*	.07
Perceived norms			
Average number of drinks consumed by friends when going out		.51**	.38**
DMQ-R SF			
Enhancement			.13
Social			.32**
Conformity			-.16**
Coping			.09
R^2 (adjusted)	.08	.33	.50
Change in R^2		.25	.17

** p<.01; * p<.05

Table 6. *Binary logistic regression of binge drinking.*

Independent variables	Odds Ratio	95%CI
Gender (1 = Male)	2.594*	1.189-5.656
Age	1.496*	1.079-.2.074
Perceived norms		
Frequency of friends' binge drinking	1.788**	1.170-2.732
DMQ-R SF		
Enhancement	1.917**	1.244-2.955
Social	1.081	.667-1.750
Conformity	.640	.373-1.098
Coping	1.759*	1.126-2.747

Nagelkerke R^2=.40

** p<.01; * p<.05