Positive alcohol outcome expectancies: Does personal binge drinking experience matter?

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Paper presented at the 11th Regional EMAC Regional Conference, Zagreb (online), September 16-19, 2020

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Abstract:

The main purpose of this study was to understand behavioral drinking patterns in accordance with positive alcohol outcome expectations. The data were collected on a sample of students from Bosnia and Herzegovina. Several regression models were used to observe alcohol consumption continuum in interaction with binge drinking. Results have shown the existence of marginal point where binge drinking behavior doesn't affect positive outcome expectancies, but the non-binge drinkers believe that intensive drinking leads to positive outcomes. This study contributes to deeper understanding of relation among drinking patterns and positive alcohol expectancies as a starting points for social marketing strategies.

Keywords: Motivational theory, Binge drinking behavior, Alcohol outcome expectancies

1. Introduction

The concept of drinking motives is based on the assumption that people drink with a goal to accomplish certain outcomes that they valued. Cox and Klinger (1988) have proposed the model in which drinking motives can be characterized by two underlying dimensions reflecting the valence (positive and negative) and sources (external and internal) of the outcomes an individual hope to achieve by drinking. Crossing these two dimensions' authors have extracted four classes of motives: social motives, coping motives, conformity motives and enhancement motives. Cooper's study (1994) has initially supported the conceptual validity and pragmatic utility of those motivational factors and many subsequent studies have confirmed that drinking motives are important factors of different patterns in alcohol consumption (Lannoy, Dormal, Billieux, & Marge, 2019). Some studies also suggested that alcohol outcome expectancies predict drinking motives, which in turn predict drinking behavior (Hasking, Lyvers, & Carlopio, 2011). Alcohol outcome expectancies can be divided on two broad categories: the positive outcome expectancies and negative outcome expectancies. Du Preez, Pentz and Lategan (2016) argue that drinking motives and alcohol outcome expectancies are two interrelated antecedents which have the most proximal predictors of drinking behavior of individuals but also that this approach offers a respectable explanation power in case of students surveys. The purpose of this paper is to address drinking motives and alcohol outcomes expectancies related to binge and non-binge alcohol consumption patterns of university students. Binge drinking is a widespread practice of excessive alcohol drinking pattern characterized by episodes of intensive consumption and abstinence periods. Many clinical and convenience sample studies have confirmed binge drinking occurrence in young population as a good predictor of future harmful and hazardous alcohol consumption (Blank, Connor, Gray, & Tustin, 2015). Binge drinkers and non-binge drinkers differ in drinking behavior patterns and these different alcohol experiences can potentially influence alcohol outcome expectations. The main goal of this paper is to explore potential differences in the positive alcohol outcome expectancies among sub-groups with different behavioral drinking patterns and different levels of drinking experience.

2. Conceptual framework

2.1. Theoretical backgrounds

In accordance with The Expectancy Theory of Motivation an individual will decide to behave or act in a certain way because she or he is motivated to select a specific behavior over alternative behaviors due to what she or he expects the outcome will be of that selected behavior (Cox & Klinger, 2004). Within Expectancy theory, behavior is explained by individuals having expectations of particular reinforcing effects as the outcome of performing the behavior in question. According to Cox and Klinger (2004) alcohol expectancies differ from motives or reasons to drink. Expectancies are the cognitive representations of an individual's past direct or indirect learning experience with alcohol. In contrast, reasons for drinking are an individual's specific motivations for using alcohol, that is the outcomes to hope to attain by drinking. *In other words, expectancies are peoples' beliefs about what will happen if they drink alcohol, whereas motives are the value placed on the particular effects they want to achieve, which motivates them to drink; or the effects they want to avoid, motivating them not to drink* (Cox & Klinger, 2004, p. 126). Jones, Corbin and Fromme (2001) argue that Expectancy Theory provides the opportunity to understand alcohol consumption at all points of the continuum of consumption within a single common

framework that relies on fewer assumptions. In that context authors emphasized the importance of Social Learning perspective which collaborates principles of learning established through research on observable behavior with constructs based on cognitive processes that are, themselves, not directly observable (Jones, et. al, 2001). The social learning framework proposes that the particular alcohol outcome expectancies are the results of direct and indirect experience with alcohol and alcohol paraphernalia. From the Social Learning perspective alcohol expectancies are regarded as structures in long-term memory that have impact on cognitive processes governing current and future behavior.

2.2. *Empirical evidence on drinking motivations and* positive alcohol outcome expectancies

Studies have had inconsistent results in accordance with predictor value of different motives that influence youth drinking patterns in general as well as binge drinking behavior in particular. Many studies have found social motives to be significantly positively correlated with quantity and frequency of alcohol consumption among young people (Cooper, 1994; Leko Šimić & Turjak, 2018; Van Damme et al., 2013). Several studies have also found that the satisfaction of social needs (Abbey, Smith, & Scott, 1993) as well as peer influence (Berkowitz, 1990; Bosari & Carey, 2001) are the major factors of binge or excessive drinking. Some studies found that all motivational factors have emerged as an important predictors of binge drinking but some have higher predictive value such as coping motives (Laghi et al., 2016) or enhancement motives (Lannoy et al., 2019). When it comes to combination of cross-sectional and longitudinal research designs, studies fund that different motives influence different phases or stages of drinking behaviors (Besler et al., 2008). Regarding the alcohol consumption expectations, the results are also differing (Hasking, et al., 2011). However, more consistent results have been confirmed in the case of positive alcohol outcome expectancies when it comes to young population. Positive expectancies refer to the belief that effects such as sociability and confidence are gained or enhanced by the consumption of alcohol. A study by Leigh and Stacey (1993) showed that students' positive expectancy was a stronger predictor of frequency of drinking than was negative expectancy. Authors concluded that students who drink for social reasons usually have positive expectations. They tend to associate alcohol consumption with fun, laughter, relaxation, feelings of euphoria, and sex. Balodis, Potenza and Olmstead study (2009) did not reveal differences between binge and non-binge drinkers in the alcohol outcome expectations. On the other hand, Bartoli et al. (2014) have confirmed that young binge drinkers show higher level of alcohol expectancies in comparison with non-binge drinkers. Jester et al. (2015) have found that the onset of binge drinking was predicted by social expectancies in youth with a family history of severe alcohol use disorders.

2.3. *Positive alcohol outcome expectancies and drinking experience: model conceptualization*

From the previous theoretical and empirical analysis can be concluded that alcohol motives and outcome expectancies are interlinked. The common characteristic of motives and outcomes expectancies is that both predict drinking behavior. The second common characteristic is also that motives and outcome expectancies are also shaped by different sociocultural and personality factors. According to Cox and Klinger's (2004) A Motivational Model of Alcohol Use, alcohol outcome expectancies are influenced by an individual's past indirect or direct learning experience with alcohol. In the frame of social learning theory, indirect learning process about expected alcohol outcomes is mostly related to the wider social

environment. Gordon, Harris, Mackintosh and Moodie (2011) found that many factors from social environment influence youth drinking intentions and behaviors, including alcohol marketing activities. Authors have emphasized several conclusions: 1) young people being aware of more alcohol marketing channels and linking alcohol advertisement increased the odds of being drinkers; 2) having siblings and friends who drink, and believing that friends and family consider that drinking is acceptable behavior, also increases odds of being drinkers. Jeringan, Noel, Thornton, and Lobstein (2016) in the systematic meta-analysis of longitudinal studies on alcohol youth consumption have found that young people who have greater exposure to alcohol marketing appear to be more likely to initiate alcohol use and engage in binge drinking. Noel, Babor and Robaina, (2016) in meta-analysis of studies evaluating specific code and alcohol marketing content concluded that youth exposure to alcohol advertising increased over time. They also found that that most alcohol advertising themes are linked to positive appeals such as humor, relaxation and friendship. Noel et al. (2016) have concluded that alcohol marketing activities promote the idea of personal benefits of consuming alcohol with descriptors as funny, clever, attractive and in many cases suggesting that drinking helps in gaining social success.

Direct learning process about alcohol outcome expectancies is mostly linked with a personal drinking experience and past reinforcement from drinking. When it comes to positive personal experience with outcomes of drinking, positive reward will be expected every time when person displays drinking behavior. These propositions are in line with a motivational model of alcohol use where past reinforcement from drinking influence learned cognitive and conditioned reaction to alcohol (Cox & Klinger, 2004, p. 125). Fleming, Thorson and Atkin (2004) found that different age groups of youth differ in the relational patterns of alcohol marketing exposure, positive expectancies and consumption of alcohol. Positive alcohol expectancies of younger age group (15-20) have been mostly influenced by indirect perceptive factors and as a results of marketing exposure. From the other hand, positive alcohol expectancies of older group (21-29) have been built up as a function of both indirect experiences and their one experience of drinking. Considering the fact that binge drinking represents a self-reported experience with the certain behavioral patterns of alcohol consumption, it is justified to suggest that experience in heavy episodic drinking can significantly influence further outcome expectancies from drinking behavior. After several episodes of heavy drinking, expected alcohol outcomes become transformed to experience of positive or negative reinforcement. Looking from the social learning perspective, the past reinforcement from drinking as a result of personal drinking behavior will influence every subsequent alcohol outcome expectancies as a result of learning from personal experience. In the frame of described conceptualization the main research question is: does higher level of personal experience affect positive alcohol outcome expectancies?

2. Research methodology

2.1. Measurement instruments

Recent studies mostly used the revised questionnaire version of The Drinking Motives Questionnaire - DMQ-R, which contains 20 items describing four motivational factors (Cooper, 1994): social motives (e.g., "to be sociable"); coping motives (e.g., "because it helps when I feel depressed or nervous"); enhancement motives (e.g., "to get high"), and conformity motives (eg. "so that other wouldn't tease me about not drinking"). The revisited version - DMQ-R has also been used in this study. Participants were asked to indicate how frequently

their drinking is motivated by each item on a five point Likert-type scale, ranging from 1 'almost never/never' to 5 'almost always/always'.

The Drinking Expectancies Questionnaire Revised - DEQ-R is a widely used a 37-item scale personal beliefs about drinking (Leigh & Stacey, 1993). In the current study dimension of positive alcohol consumption expectancies - Increased Social Confidence has been used. Participants were asked to disclose their beliefs about positive alcohol expectancies of Increased Social Confidence using a five-point Likert-type scale (1-strongly disagree to 5 – strongly agree). Cronbach's alpha test has confirmed metric validity of the Increased Social Confidence ($\alpha = .918$.)

The AUDIT was developed by the World Health Organization in 1982 as a simple way to screen and identify people who are at risk of developing alcohol problems. The AUDIT test focuses on identifying the preliminary signs of hazardous drinking and mild dependence. It is used to detect alcohol problems experienced within the last year. AUDIT contains 10 questions examining: alcohol consumption (3 items), drinking behavior (3 items), adverse reactions (2 items) and alcohol-related problems (2 items). Binge drinking is a widespread practice of excessive alcohol drinking pattern characterized by episodes of intensive consumption and abstinence periods. It is usually related to young population (adolescents, students) and weekend heavy alcohol consumption. There are different metric definitions of binge drinking depending on the research contexts and approaches. Blank et al. (2015) confirmed that using a single AUDIT-3 preforms excellent in identifying binge drinking in younger population which was also used in the current study.

2.2. Data collection and sample characteristics

The data were collected on convenience sample of undergraduate students from the different parts of Bosnia and Herzegovina. Among a total number of 369 participants, 225 were female (61.0%) and 132 were male (35.8%). The average age of sample was 21. With the purpose to address the main research question sample has been divided in two sub-samples with cut off criteria defined as score on the AUDIT 3 with ≥6 standard drinks per occasion at least once a week.: binge-drinkers (14.5%) and non-binge drinkers (85.5%). Among non-binge group females are in majority (68.8%) in contrast with binge drinking group were dominating male respondents (72.0%).

3. Analysis and findings

The main research question is: does higher level of experience in alcohol consumption affect positive alcohol outcome expectancies? In accordance with previously described empirical findings that in most cases binge drinkers show higher enthusiasm about drinking trough higher motivations and more positive alcohol expectancies in comparison with non-binge drinkers. The next table (Table 1) shows results of t-test which describe differences among binge and non-binge sub groups in four motivational factors.

Table 1. Independent *t*-test

	non-bd (*N* = 313)		bd (*N* = 53)		*t*
	Mean	SD	Mean	SD	
Social	3.32	1.00	4.25	.76	-7.86 ***
Coping	1.78	.85	2.63	1.26	-4.74 ***

Enhance	2.29	.93	3.48	1.08	-7.54 ***
Conform	1.33	.57	1.82	1.15	-3.01 ***

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$; *ns* = not significant

In the table are showcased the results of the independent t-test with which it was tested whether or not there was a statistically significant difference between the two groups averages. According to all indicators, binge drinking group has larger average values in all four motivational factors and the difference is indeed statistically significant. The next table shows results of series of regression models where dependent variable is Increased Social Confidence – ISC as an observed dimension of positive alcohol outcome expectancies (Table 2).

Table 2. Regression analysis results

	Model 1 conf	Model 2 conf	Model 3 conf
audit	0.0622***	0.0865***	0.0915***
	(0.00896)	(0.0104)	(0.0117)
bd	-0.229	0.921**	1.077**
	(0.152)	(0.304)	(0.339)
bd#audit		-0.0835***	-0.0960***
		(0.0192)	(0.0212)
gender			0.00857
			(0.107)
age			0.0283
			(0.0293)
income			-0.101
			(0.0797)
_cons	2.311***	2.149***	1.647*
	(0.0756)	(0.0826)	(0.642)
N	366	366	303
R^2	0.139	0.182	0.194
adj. R^2	0.134	0.175	0.178

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Model 1 shows that in both groups higher level of alcohol consumption (AUDIT score) leads to higher level of expectancies of ISC. Initial levels of positive alcohol outcome expectancies measured by ISC is slightly lower in binge drinking group, therefore the regression coefficient of binge drinking is negative, but difference is not significant. Model 1 explains 13.4% variance of ISC and is graphically depicted on Figure 1.

Figure 1. Graphical representation of Model 1
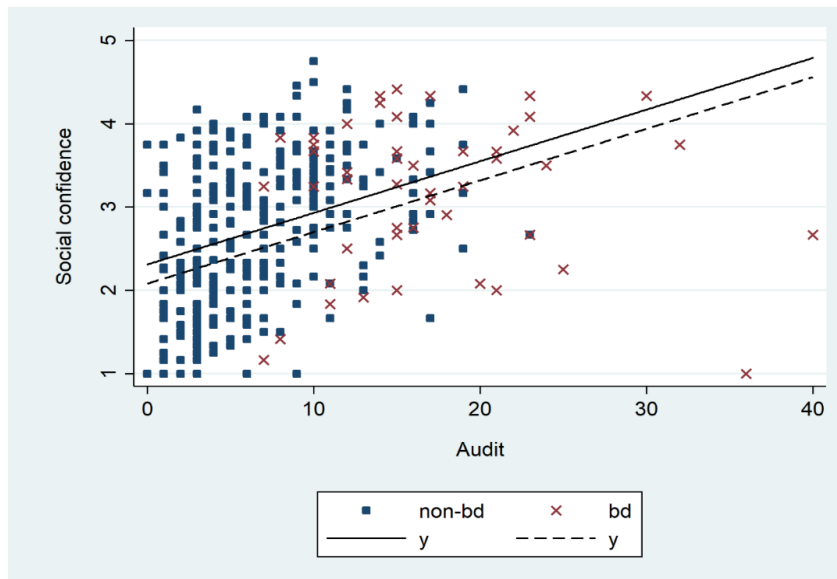
Model 1 is based on the assumption that the differences among groups are related only to intercepts while slopes are same for both groups. This means that increased alcohol consumption influences the expectancies of ISC in both groups in the same way. That's why a regression lines are parallel on Figure 1. However, it is possible that this assumption does not hold in reality, as increased alcohol consumption potentially doesn't influence ISC as positive alcohol outcomes in the same way those who are binge drinkers and those who are not binge drinkers. With the purpose to test this assumption the second Regression model was built to examine potential moderating effect of binge-drinking behavioral patterns. Therefore, the next question is does binge drinking behavioral pattern moderate relation among alcohol consumption score -AUDIT and level of positive alcohol outcome expectancies - ISC. In order to address this question, we created Model 2 which has confirmed significant moderating effect of binge drinking behavioral patterns. Model 2 explains 17.5% of variance in dependent variable – expectancies of ISC. Described Regression model is graphically illustrated on Figure 2.

Figure 2. Graphical representation of Model 2
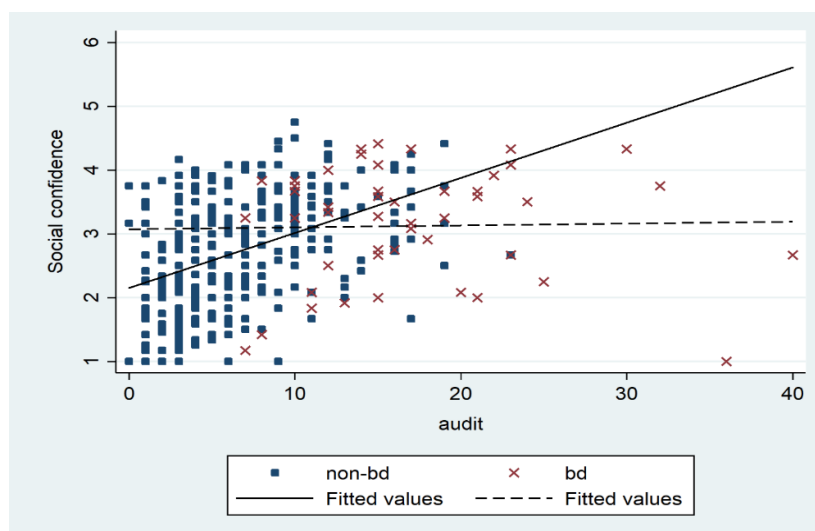
From Figure 2 we can see that young people in non-binge drinking group have low expectancies of ISC when alcohol consumption is low (AUDIT = 0). However, this low

starting level of ISC expectancies becomes to rise as alcohol consumption increases. On the other hand, starting level of ISC expectancies in binge-drinking group is higher when alcohol consumption is low (AUDIT = 0), but with increased alcohol consumption this starting level of ISC expectancies remains unchanged. In other words, increased alcohol consumption has no influence on the level of ISC expectancies in binge drinking group. After confirming existence of moderating effect of binge drinking on relationship between alcohol consumption and ISC expectancies, we expanded our model with inclusion of socio-economic variables: gender, age and income (Model 3). It can be noted that moderation effect remained mostly unchanged. Signs are the same as in the Model 2, and none of the included socio-economic variables have influence on dependent variable. Model 3 explains 17.8% of variance in dependent variable of ISC expectancies.

4. Discussion and conclusion

Theoretical backgrounds of several studies have positioned alcohol outcome expectations as a predictor of drinking behavior. Those expectation dimensions actually describe desirable state of mind, feelings and moods both during alcohol consumption, and as a consequence of alcohol consumption. In the line with motivational theory, binge drinking is behavioral result of motivated decision process. This study has confirmed that binge drinkers have higher motivation level to express drinking behavior. From the point of motivational theory personal experience in alcohol consumption can change the perspective, and consequently, drinking behavior can become an instrument of gaining expected outcomes. Therefore, the main purpose of this study was to understand behavioral patterns in drinking in accordance with positive alcohol outcome expectations.

The result of this study confirmed that there is a high level of positive alcohol outcome expectancies especially in the case of young people who experienced binge drinking behaviors. The overall analysis addressed the question: does behavioral experience in drinking alcohol affects positive outcome expectancies? The current analysis supports the conclusion that alcohol outcome expectancies are changed in accordance with personal drinking experience. Observing alcohol consumption continuum measured by AUDIT in interaction with binge drinking behavioral patterns it can be seen that binge drinkers hold higher level of positive alcohol expectancies in comparison with non-binge drinkers. But the main conclusion is that there is a marginal point where binge drinking behavior doesn't affect positive outcome expectancies. In other words, repeating heavy drinking behavior doesn't lead to higher positive outcome expectancies. This fact provides a conclusion that binge drinkers are aware that gaining those positive outcomes is of temporary character linked with a drinking situation which actually doesn't contribute to the positive self-esteem in a permanent manner. On the other hand, in non-binge group more behavioral experience in drinking influence higher level of positive outcome expectancies. This means that young people with lower level of drinking experience believe that more intensive drinking leads to gaining positive outcomes. This result is very important in prediction of further behavioral patterns and prediction of hazardous drinking habits of those groups with lower starting level of drinking experience.

Since binge drinking and excessive alcohol consumption are relevant public health problems in many countries including Bosnia and Herzegovina, this study offers a contribution for better understanding of binge drinking occurrence framework and therefore some possible guidelines for social marketing campaigns aiming at minimizing such drinking behavior among young population. Some studies reveal that interventions challenging alcohol expectancies may lead to reductions in alcohol consumption. A study by Scott-Sheldon,

Terry, Carey, Garey and Carey (2012) found that these interventions i.e. the participants reported lower positive alcohol expectancies, reduced their alcohol use, and reduced their frequency of heavy drinking. These campaigns, as it can be seen in this study, should concentrate on lowering drinking expectations and pointing out different approaches to build self-esteem in ways different that alcohol consumption. For example, Kubacki, Siemieniako and Rundle-Thiele (2011) recommend efforts to improve self-confidence and self-esteem through other means and believe that colleges and universities can help by providing a mix of sport and other social activities where the role of alcohol in facilitating social interaction is minimal at best. Taking into account the importance of positive alcohol expectancies, especially in the social sphere, instead of supporting supply and demand reduction, this study supports a harm-minimization approach based on alcohol education and the promotion of 'safer' or more 'sensible' drinking. From the other hand, results of this study also reveal as crucial to detect critical paths of direct and indirect influences that actually build positive alcohol outcome expectancies, as well as influence of particular reinforcing effects as the outcome of performing drinking behavior.

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