Alcohol outcome expectancies and drinking motives mediate the association between sensation seeking and alcohol use among adolescents

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Abstract

Sensation seeking is a strong correlate of alcohol consumption among young people, yet the research on mediators of this association is mainly limited to English-speaking adolescents. The proposed model of the present study includes antecedent variables (sensation seeking, age and gender), mediators (positive and negative expectancies and drinking motives), and one outcome variable (a composite score of alcohol use). Self-reported data obtained from Hungarian high school students (N=707, mean age 16.6, SD=1.5) were analyzed with structural equation modeling. The general model fit was excellent, and this study supported the proposed sensation seeking → positive and negative expectancies → drinking motives → alcohol use indirect effects. The total indirect effect explains 38% of sensation seeking and alcohol use association. Results support the notion that positive expectancy mediates between sensation seeking and drinking motives, and finally, positive expectancy and drinking motives are mediators between sensation seeking and alcohol use.

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1. Introduction

Novelty seeking and sensation seeking are recognized as well-established risk factors for health-impairing behaviors including legal and illegal drug use (Roberti, 2004; Staiger, Kambouropoulos, & Dawe, 2007; Zuckerman, 1994). Sensation seeking is associated with the frequency of alcohol use and the amount of alcohol consumption in all age groups (Hittner & Swickert, 2006). This research report aims to develop an explanatory model based on motivational theories of alcohol use for the association between sensation seeking and alcohol use among Hungarian adolescents.

Hungarian mortality data provide the evidence that Hungary is afflicted with the detrimental impact of alcohol use. The relative risk of alcohol-related mortality was 1.90 compared to the European Union in 2005 (Health For All Database, 2007). Moreover, there is an increasing trend in the quantity of alcohol consumption in Hungary, while in the European Union a clear decreasing trend of alcohol use can be observed (Health For All Database, 2007). In order to tackle these negative trends in the long term, studies on adolescent alcohol use are of crucial importance. As well as the higher mortality risk of alcohol use in the entire population, experimentation with alcohol, established alcohol use, or even underage problem drinking among high school students represents a major public health concern in view of the fact that adolescent alcohol use can result in harmful short- and long-term health, social, academic, legal, and financial consequences (Newburn & Shiner, 2001). According to the national report of Health Behaviour in School-aged Children (HBSC) survey, in Hungary 92% of 11th grade adolescents have already consumed alcohol, and 64% of boys and 41% of girls have already been drunk at least twice (Aszmann, 2003). Alcohol consumption in adolescence increases the risk of heavy drinking and alcohol dependence in young adulthood life and later (Andersen, Due,
Holstein, & Iversen, 2003). Research on alcohol consumption among adolescents should focus on distal and proximal variables that might explain the variance of drinking behavior in order to construct effective programs to influence alcohol use among teenagers.

1.1. Alcohol use, outcome expectancies, and drinking motives

The recent motivational models of alcohol use propose the alcohol-related outcome expectancies and drinking motives as mediators between antecedents and alcohol use behavior (see for review Kuntsche, Knibbe, Gmel, & Engels, 2005).

The alcohol-related outcome expectancies are defined as beliefs about the effects of alcohol on behavior, cognition, moods, and emotions (Leigh, 1989). These beliefs play a particularly important role at the age when experiences with alcohol are less advanced. Young children’s expectancies of alcohol are best described as indeterminate and diffuse. Their beliefs “crystallize” with age (Miller, Smith, & Goldman, 1990). Parental behavior, interaction with peers, and media representation of alcohol direct the formation of alcohol-related outcome expectancies (Martino, Collins, Ellickson, Schell, & McCaffrey, 2006). Moreover, these expectancies influence not only the behavior but also the actual perception of later experiences with alcohol, which then, in turn, may strengthen the original expectancies (Oei & Morawska, 2004).

Alcohol-related outcome expectancy research emphasizes the importance of both implicit cognition or memory activation and explicit expectancy in understanding alcohol use (e.g. Rather, Goldman, & Roehrich, 1992; Wiers, van Woerden, Smulders, & de Jong, 2002). Research on explicit alcohol-related outcome expectancy applied factor analysis and identified two weakly correlated outcome expectancy second-ordered factors, namely positive and negative outcome expectancies (Leigh & Stacy, 1993). While positive expectancy includes the positive and negative reinforcing properties of alcohol, negative expectancy embraces the expected negative consequences of alcohol use. Studies on implicit alcohol-related cognitions applied the semantic memory network model and multidimensional scaling, and revealed two factors, namely social/positive versus antisocial/negative and arousing versus sedating (Rather et al., 1992).

Stacy (1997) demonstrated that memory activation and explicitly generated outcome expectancy were independent prospective predictors of alcohol use. The implicit cognitive components are those memory associations which can be easily activated by situational or motivation circumstances; the outcome expectancy, on the other hand, may be involved in the explicit decision-making process about alcohol use. Stacy (1997) also reported that the positive outcome expectancy correlated positively with impulsive sensation seeking, whereas the memory activation did not. Therefore, sensation-seeking traits might have an impact on explicit decision-making about alcohol use, but is not related to the accessibility of alcohol-related memory components. Consequently, this present research focuses on explicit alcohol-related outcome expectancies only.

The other cognitive-motivational predictors of alcohol use are drinking motives, which are regarded as the final common pathways to alcohol use, through which more distal determinants—i.e. personality determinants and outcome expectancies—exert their influences on behavior (Kuntsche et al., 2005). Cooper’s (1994) results provide support for the four-factor model of drinking motives based on the conceptual model of Cox and Klinger (1988). Cooper’s (1994) model includes social, coping, enhancement, and conformity motives, and the theoretical structure of the operational model is supported in different age groups, among boys and girls, and in English and non-English samples (Cooper, 1994; Kuntsche, Knibbe, Gmel, & Engels, 2006). A recent study provided evidence that drinking motives are the gateway through which alcohol-related expectancies are almost fully mediated in Swiss adolescents (Kuntsche, Knibbe, Engels, & Gmel, 2007).

In the present study, a sensation-seeking personality trait is regarded as an antecedent individual variable which has an impact on expectancies. It also influences drinking motives which finally determine alcohol use. Therefore, we propose that drinking motives can be mediators between alcohol outcome expectancies and alcohol use.

1.2. Sensation seeking, alcohol use, and expectancies of alcohol

Individual factors might either foster or weaken the development of alcohol-related outcome expectancies, therefore several personality factors were studied in relation to alcohol use and alcohol expectancy. For example, McCarthy, Kroll, & Smith (2001) empirically supported the claim that disinhibition—operationalized as neurotic extraversion—is related to alcohol use and alcohol expectancies among undergraduate students; moreover, positive expectancies mediate the influences of disinhibition on drinking behavior. The other personality variable which is frequently studied in relation to drug use is a sensation-seeking trait. Sensation seeking is described as the tendency of “seeking of varied, novel, complex, and intense sensations and experience, and the willingness to take physical, social, legal and financial risks for the sake of such experience” (Zuckerman, 1994, p. 27). The association between sensation seeking and alcohol use is well documented. In a recent meta-analysis the effect size of this association in an adolescent population was r = .296 (Hittner & Swickert, 2006). Although the correlation between sensation seeking and alcohol use is well-established, the explanation for this association requires further examination.

Only relatively few studies have tested the assumption that outcome expectancies and drinking motives might explain the association between sensation seeking and alcohol consumption. If this assumption is true, high sensation seekers expect more positive and less negative consequences related to alcohol consumption, and report higher drinking motives in certain situations. Several studies (Darke, Greenbaum, & Goldman, 2004; Finn, Sharkansky, Brandt, & Turcotte, 2000; Henderson, Goldman, Coover, & Carnevala, 1994) have demonstrated that the alcohol expectancies mediate partially but significantly the association between sensation seeking and alcohol use. These studies tested alcohol-related positive expectancies only, and their samples included young adults or college students. In contrast, Katz, Fromme, and D’Amico (2000) found that, on the one hand, there is a positive relationship between sensation seeking and positive expectancies and, on the other hand, that there is a negative correlation...
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