Reinforcement Sensitivity Theory and Alcohol Outcome Expectancies in Early Adolescence

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Abstract

Positive models of alcohol use suggest that beliefs about the effects of alcohol (alcohol outcome expectancies) are important proximal predictors of substance use, mediating the effects of distal risk factors (e.g., temperament, personality). This study sought to examine the influence of individual differences from the revised reinforcement sensitivity theory (RST; Gray & McNaughton, 2000) in the development of alcohol outcome expectancies in a young adolescent sample in the early stages of initiation. Correlation and regression analysis suggested that high levels of sensitivity to reward (SR-Drive) were associated with positive expectancy effects of alcohol. It was hypothesized that the BAS would be associated with negative alcohol expectancies because of the risk assessment functions that the BAS is thought to be responsible for.

Introduction

Previous research has identified alcohol outcome expectancies as robust correlates of both alcohol use initiation and maintenance (Dankes & Goldman, 1993), and they are considered to be proximal to alcohol use behavior, mediating a variety of risk factors (Goldman et al., 1999). Moreover, these cognitive variables are thought to be malleable and thus useful targets for intervention (Wiers, Luigaarden, Wildenborg, & Smulders, 2005). Accordingly, studies that investigate the development of alcohol outcome expectancies may contribute to our understanding of the etiology of alcohol use in adolescence and preventive intervention efforts.

Although many studies have investigated the association between personality and outcome expectancies (Shee, Tuft, Bartholow, & Vieth, 1999), few studies have examined personality correlates during the early stages of initiation, and this was the goal of the current study.

Reinforcement sensitivity theory (RST) may be a particularly useful framework to consider when examining the development of expectancies. RST postulates 3 systems, the Behavioral Approach System (BAS) is hypothesized to mediate reactions to appetitive stimuli, the Fight-Flight- or Freeze System (FFFS) is hypothesized to mediate reactions to aversive stimuli, and the Behavioral Inhibition System (BIS) is hypothesized to inhibit behavior and increase arousal and risk assessment in response to cues signaling that aversive consequences may follow a reward oriented behavior, novelty, or the loss of expected reward. Individual differences in reinforcement sensitivity map onto motivational models of substance use, with the BAS being the role of positive reinforcement sensitivity and the BIS being the role of positive and negative outcome expectancies (Raz, Koob, & Fairley, 2000) and the role of positive reinforcement sensitivity (Mccarty, Curtis, Piper, & Baker, 2010; Stewart, de Wit, & Elkeboom, 1984), and thus RST provides conceptual links between personality and expectancies.

Although the original RST (Gray, 1982) was revised a decade ago (Gray & McNaughton, 2000), the revision has largely been ignored in human studies examining reinforcement sensitivity and substance use. This is a problem because the revised theory suggests that the FFFS may be associated with substance use via a negative reinforcement pathway, but there are virtually no human studies examining the role of the FFFS in substance use. This may be due to a paucity of measures that assess motivational functions of the FFFS in an adolescent sample. According to the revised theory of reinforcement sensitivity (RST), motivational functions that the BIS is thought to be responsible for.

Objective

• To examine associations between individual differences in BAS, BIS, and FFFS and alcohol use outcome expectancies in young adolescents in the early stages of initiation.

Hypothesis

• The BAS remains largely unchanged in the revised theory, and past research has shown that a strong BAS is associated with high levels of drinking and with enhancement drinking motives (O’Connor & Colder, 2005). These findings are consistent with RST, such that the BAS mediates reactions to appetitive stimuli. Accordingly, we hypothesized that a strong BAS would be associated with high levels of positive alcohol expectancies.

• Hypotheses regarding the FFFS and BIS are more tentative given the paucity of research. The BAS remains largely unchanged in the revised theory, and past research has found positive, but not negative, expectancies associated with BIS. In Reference to negative expectancies, the role of the FFFS has largely been ignored in the field of addictions, and it will be important for future studies to investigate the possible role of the FFFS in negative reinforcement models of substance use.

Discussion

This study is the first to evaluate the association between the revised reinforcement sensitivity theory (RST) and alcohol outcome expectancies. Previous research suggests that expectancies mediate the relationship between personality and substance use (Cooper, Perkins, & Corr, 2007). Participants in our sample being primarily substance use naïve children. SR-Social Approval was also unrelated to expectancies which may reflect the composition of our sample being primarily substance use naïve children. SR-Social Approval may become more related to expectancy outcomes as the participant’s experience with alcohol use increases.

Contrary to our expectations SR-Drive positively predicted negative expectancies. The latter finding may be a function of differential socialization experiences of high SR youth possibly because of being viewed as “at risk” by their parents. Being viewed as at risk may result in parents communicating stronger anti substance use messages to youth who score high in SR. Previous research has found negative outcome expectancies to be poor predictors of alcohol use (Gerrard et al., 1996) and thus, our results suggest that despite associations between SR-Drive and negative outcome expectancies, SR-Drive may represent an early occurring risk factor because of its association with positive outcome expectancies.


References


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