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Self-control, social learning theory, social bonds and binge drinking: Results from a national sample

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ABSTRACT

Binge drinking is still an issue among adolescents. The current study applies the theories of low self-control, social learning theory, and social bond theory to adolescent binge drinking. The data for this study comes from the 2011 Monitoring the Future Survey form two that is a nationally representative sample. The study found support for low self-control and social bond theory (i.e., definitions). The researchers also provide appropriate policy implications.

KEYWORDS

Binge-drinking; adolescence; criminological theory

Introduction

Overall youth binge drinking rates in the United States have declined from 10.7 percent in 2002 to 6.1 percent in 2014 (SAMSHA, 2015). However, in 2014 estimates show there were a total of 5.3 million binge drinkers between the ages of 12 to 20. Also, within this age range, there were 1.3 million heavy drinkers, meaning those that binge drink on at least five days in the past 30 days (SAMSHA, 2015). Thus showing that U.S. binge drinking remains a problem.

Binge drinking is defined by gender. A female binge drinker is four or more alcoholic drinks in one sitting while a male binge drinker is five or more drinks in one sitting (National Institute of Alcohol Abuse and Alcoholism (NIAAA), 2004). The research shows that males are more likely to binge drink and that Caucasians and Hispanics are more likely to binge drink than Asian-Americans and African-Americans (NSDUH, 2009; SAMSHA, 2008).

Previous research has focused on the amount of binge drinking (D'Amico et al., 2001; Miller, Naimi, Brewer, & Jones, 2007). However, little research has focused on explaining why binge drinking occurs (Simmons-Morton, 2007; Stevens-Watkins & Rostosky, 2010). The most substantial study on binge drinking came from the Harvard School of Public Health College Alcohol Study (CAS). The findings showed increased likelihood of binge drinking with being involved with a fraternity/sorority and having friends who binge drink and that decreased chances of binge drinking was related to living at home and attending a college where alcohol was banned (Wechsler & Nelson, 2008).

The present study applies three criminological theories – social learning, social bonding, and low self-control that may explain adolescent binge drinking. The researchers present differential association, definitions, and non-social reinforcement as part of social learning. To the researchers' knowledge,

no studies have used these three theories to explain adolescent binge drinking. Thus, the following study makes a modest contribution to the literature using the three aforementioned theories to help explain adolescent binge drinking.

Literature review

Social learning theory

The overall premise of social learning theory is that criminal or deviant behavior is a learned behavior just like any other behavior (Akers, 1985, 1998). Akers (1998) attributed learning to external and internal sources. Akers (1985, 1998) built on the works of Bandura (1986), Skinner (1953) and Sutherland (1947) to create a social learning theory that has four concepts: differential association, definitions, differential reinforcement, and imitation.

Akers (1998) defined differential association as a person's belief in participating or acknowledging the use of criminal behavior as related to the amount of exposure to criminal behavior from one's peer group. An adolescent who has friends or family who approve of binge drinking would increase the chances of the adolescent binge drinking. Akers (1998) defined definitions as the belief in the use of criminal behavior as good or bad. This can occur as either general definitions of behavior based on approval from moral or religious ground or specific definitions coming from a particular activity. If an adolescent believes binge drinking is an acceptable behavior, there's a greater chance of binge drinking.

Imitation is where a person models their criminal behavior based on others around them (Akers, 1998). An adolescent with friends who binge drink increase the chances of binge drinking because of their close friend(s) and the social environments approval. Differential reinforcement is the

anticipated reward or punishment a person expects based on committing a criminal or deviant act. If an adolescent likes how alcohol makes her/him feel or the reaction it causes this could increase the chances of binge drinking. According to Akers (1998), nonsocial reinforcement is a part of social learning theory because of the unconditioned physiological and physical stimuli that come from the intrinsic rewards that one gets after doing the behavior. Previous research applying social learning theory to binge drinking found that differential association was the critical factor in terms of involvement or abstaining in binge drinking (Hahm, Kolaczyk, Jang, Swenson, & Bhindarwala, 2012; Handren, Donaldson, & Crano, 2016). The next section covers self-control theory and social bonds.

Self-control theory and social bonds

Gottfredson and Hirschi's (1990) *General Theory of Crime*, now known as self-control theory, emphasizes the roles of parental socialization and self-control in explaining behavior. The theory is grounded in rational choice with individuals being pleasure seekers and pain avoiders. A person's ability to evaluate a behavior as pleasurable rather than painful is based on one's self-control level. In their 1990 version of the theory, they define self-control as low self-control. They further specify low self-control as an individual's inability to foresee the long-term consequences of one's behavior. This inability is due to the characteristics the individual possesses because of improper parental and school socialization. An individual that display low self-control prefers immediately gratifying activities that are simple, easy, involve risky behaviors, have little to no planning, and also demonstrates little empathy for others (Gottfredson & Hirschi, 1990).

Crime and deviance (i.e., binge drinking) are options for individuals with low self-control. Criminal or deviant acts are likely to attract individuals with low self-control because these acts provide the pleasure those with low self-control pursue. In the context of this paper, Gottfredson and Hirschi's (1990) theory may apply to binge drinking. Specifically, individuals displaying low self-control may choose to binge drink because they like the way alcohol makes them feel, they view binge drinking as a risky activity, or they are unaware of the long-term impact to their mental and physical health. Previous research shows that people who have low self-control are more likely to binge drink (Ford & Blumenstein, 2013; Sun & Longazel, 2008). However, other studies have shown peer association is a better predictor of binge drinking (Ford & Blumenstein, 2013; Higgins, Tewksbury, & Mustaine, 2007).

In 2004, expressing displeasure with the psychological focus on low self-control, Hirschi reconceptualized the theory to move the field away from low self-control and toward higher levels of self-control with an emphasis on social bonds. Hirschi (2004) contended individuals with higher levels of self-control have better social bonds than those on any part of the self-control continuum. This reconceptualization revisits Hirschi's 1969 theory that criminal or deviant acts are the result of an individual having weak or broken social bonds and will allow the individual to take a moral holiday that may result in crime or deviance.

According to Hirschi (1969), an individual bond is made up of four principal bonds that are attachment, commitment, involvement, and belief. The first bond is attachment to others; this means that an adolescent who has close friends who approve of binge drinking is more likely to binge drink because of this close relationship. Second is commitment which is a person's stake hold in conformity to society's laws for an adolescent who is on an athletic team they would choose not to binge drink because he/she would risk expulsion. Third is involvement and is the amount of time spent on socially acceptable activities meaning that an adolescent who spends time on after-school clubs/activities is less likely to binge drink because of the time spent on pro-social activities. The final bond is belief; this is a person's belief in the laws and values created in society thus meaning that if an adolescent does not believe binge drinking is wrong there is a greater chance of binge drinking. For individuals with higher levels of self-control, these bonds would be higher, and this follows Hirschi (2004) reconceptualized self-control as an individual's ability to foresee any consequence of their behavior due to his/her strong bonds.

Only three other studies, to the researchers' knowledge, have applied Hirschi's (2004) redefinition of low self-control to drug/alcohol use. Results from these studies show that adolescents displaying higher levels of self-control decreased the likelihood of nonmedical prescription drug use, drunk-driving, and marijuana use (Bouffard & Rice, 2011; Higgins, Mahoney, & Ricketts, 2009; Ward, Boman, & Jones, 2015). The current findings show that Hirschi's (2004) revised low self-control theory is appropriate. The following section will cover the present study.

The present study

This study's goal is to provide an understanding of the theoretical links that may explain adolescent binge drinking. This study is unique in that it applies social learning theory, low self-control, and social bond theory to adolescent binge drinking. Therefore, this paper can provide a modest contribution to social learning, low self-control, and social bonds literature. Further, this study also contributes to the binge drinking literature. This study's results may also provide a better understanding of the behavior, which in turn leads to policy implications for reducing instances of adolescent binge drinking.

Methods

Sample and procedures

The data for this study came from the Monitoring the Future (MTF) 2011 survey form 2. In general, the MTF is designed to explore the lives of contemporary American youth. Particular attention is given to their values, behaviors, and lifestyles. The 2011 MTF survey was disaggregated into six questionnaire versions (forms), and this does not include the core survey. In this study, the researchers chose form 2, because it contains the most fruitful, theoretical measures for this study. The total

sample size for this study is 2,465. A complete description of the data may be found in Johnston, O'Malley, Bachman, and Schulenberg (2012).

Measures

Binge drinking

The binge drinking measure consisted of a single item that captured binge drinking in the past two weeks. Specifically, the item is: "Think back over the last two weeks. Did you ever have five or more drinks in a row?" The participants marked their responses using a dichotomous measure: (0) no and (1) yes.

Social learning theory

The present study uses differential association to account for binge drinking in the context of Akers's (1998) theory. Consistent with previous research on binge drinking, the present study incorporated two measures of peer association. The first measure used three items to capture the participants' perceptions of the number of friends using soft drugs (i.e., marijuana, alcohol, and tobacco) and is known as "Peer Soft Drug Use." The participants marked their responses using a 4-point, Likert-type scale anchored by (0) "none" and (4) "all." The internal consistency was acceptable (Cronbach's alpha = 0.82).¹

The second measure used 10 items to capture the participants' perceptions of the number of friends using hard drugs (i.e., LSD, other hallucinogens, amphetamines, sedatives, tranquilizers, cocaine, heroin, pain relievers, inhalants, and crack) and is known as "Peer Hard Drug Use." The participants marked their responses using a 4-point, Likert-type scale that was anchored by (0) "none" and (4) "all." The internal consistency of the scale was acceptable (Cronbach's alpha = 0.93).²

The present study uses adolescents' attitudes (i.e., definitions) about the risk of drug use to account for definitions in the context of Akers's (1998) social learning theory. Consistent with previous drug research using Akers's theory, the present study incorporated a measure using 42 items to capture the participants' perceptions that they think people risk harming themselves (physically or in other ways) if they try various drugs once or twice, occasionally, or regularly. Higher scores on this measure indicate greater knowledge of risk for performing the behavior. The drugs for this study included: powder cocaine, crack cocaine, any narcotic other than heroin, Adderall, PCP, meth, salvia, and marijuana. This measure is known as "Definitions." The Cronbach's alpha coefficient was 0.96 indicating the measure had acceptable internal consistency.³

Hirschi's (2004) self-control

To address our hypothesis that social bonding will reduce instances of binge drinking, we use one measure in the present study. This measure asked, "About how many hours do you spend in an average week on all of your homework including both in-school and out of school?" This item addressed Hirschi's (1969) ideas of school commitment and has been used in studies of drug use (Higgins et al., 2009). The

participants' marked their responses using a 7-point scale that was anchored by (1) "none" and (7) "25+ hours." Higher scores, on the measure, indicated more hours spent on homework which indicated increased social bonding.

Low self-control

The measure for low self-control came from two questions. The first question asked, "I get a kick out of doing dangerous things" (1 = Disagree, 5 = Agree), and the second question asked, "I like to take some risks" (1 = Disagree, 5 = Agree).⁴ Higher scores indicate a greater level of low self-control.

Control measures

There were several control measures in this study. The first control measure was age, and it was captured as below 18 years old (0) and above 18 years old (1). The second control measure was biological sex – (0) female and (1) male. The third measure was race – (0) white and (1) non-white. The fourth control measure was urban – (0) non-metropolitan statistical area and (1) metropolitan statistical area.

Analysis plan

The purpose of the present study is to determine which theoretical premise provides a better understanding of binge drinking. To do this, the researchers tested the following hypotheses:

- Hypothesis One: Adolescents, who socially learn using drugs is inappropriate, are less likely to binge drink.
- Hypothesis Two: Adolescents, who display low self-control, are more likely to binge drink.
- Hypothesis Three: Adolescents, who have weak or broken bonds, are more likely to binge drink.
- Hypothesis Four: Adolescents, who have friends who use soft or hard drugs, are more likely to binge drink.

Researchers conducted the analysis, of these hypotheses, in a series of steps. The first step is a presentation of the descriptive statistics. The second step is a presentation of logistic regression. Binary logistic regression is used in this study because the dependent measure – binge drinking – is dichotomous (Pampel, 2000). Multicollinearity may be an issue in binary logistic regression. Following Menard (2002), the tolerance measure is used to examine the extent of multicollinearity. Typically, tolerance levels closer to 0.20 indicate multicollinearity is a problem (Garson, 2007; O'Brien, 2007).

Results

Table 1 presents the descriptive statistics. The descriptive statistics show 60 percent of the sample binge drank in the past two weeks. For social learning measures, peer association hard drug use has a mean of 2.88, peer association soft drug use has a mean of 5.31, and definitions has a mean of 32.60. The low self-control measure has a mean of 6.53. The social

Table 1. Descriptive statistics.

Measures	Mean/ Percentage	Standard Deviation	Minimum	Maximum
Binge Drinking	0.60	--	0.00	1.00
Low Self-Control	6.53	2.25	2.00	10.00
Peer Hard Drug Use	2.88	4.85	0.00	40.00
Peer Soft Drug Use	5.31	3.23	0.00	12.00
Homework	1.31	0.92	1.00	7.00
Definitions	32.60	10.81	0.00	42.00
Age	0.56	--	0.00	1.00
Sex	0.52	--	0.00	1.00
Race	0.31	--	0.00	1.00
Urban	0.80	--	0.00	1.00

bonding measure, “time spent on homework,” has a mean of 1.31. For the control measures, more than half (i.e., 56 percent) of the sample is over 18 years old, 52 percent of the sample is male, 31 percent of the sample is non-white, and 80 percent of the sample live in urban areas.

Table 2 presents the results of the logistic regression. Two measures have a link with binge drinking, and based on the tolerance coefficients, multicollinearity is not a problem in the data. As the level of low self-control increases by one unit, the likelihood an adolescent will binge drink increases by 1.19 units. This supports hypothesis two: low self-control is linked to binge drinking.

Table 2 also shows the definitions have a link with binge drinking, showing how an adolescent’s perception of the definitions of drugs causing physical or emotional harm **decreases** the likelihood of an adolescent deciding to binge drink by 13 percent. The finding of definitions of drugs supports hypothesis one. Adolescents, who have friends who use soft or hard drugs, is not significant. This shows no support for hypothesis four. The number of hours spent on homework is not significant, thus showing no support for hypothesis three. The measures age, sex, race, and urban are not significant.

Discussion

Alcohol abuse is widely recognized as a major problem on college and high school campuses. Recently, one pattern of alcohol consumption, binge drinking, has generated a great deal of concern. Binge drinking is associated with a vast array

Table 2. Logistic regression analysis.

Measure	b	S. E.	Exp(b)	Tolerance
Low Self-Control	0.17**	0.07	1.19	0.90
Peer Hard Drug Use	-0.03	0.03	0.97	0.74
Peer Soft Drug Use	0.08	0.06	1.08	0.76
Definitions	-0.04**	0.01	0.96	0.87
Homework	-0.04	0.15	0.96	0.94
Age	0.31	0.25	1.36	0.94
Sex	0.09	0.26	1.09	0.84
Race	0.54	0.31	1.71	0.76
Urban	-0.16	0.35	0.85	0.89
Model Diagnostics:				
Model Chi-Square: 20.57				
-2 Log Likelihood: 382.99				
Cox & Snell R-Square: 0.07				
Nagelkerke R-Square: 0.09				

*p < 0.05, **p < 0.01

of negative consequences for students, ranging from missing class to breaking the law. Recent studies indicate binge drinking is a prevalent behavior among adolescents. Although binge drinking is a widespread and problematic behavior, there is a notable lack of theory-driven research on this topic. Thus, the present study examines why binge drinking takes place among adolescents. Specifically, it follows the extent to which three theoretical perspectives, social learning theory, low self-control, and social bonds, may be able to account for adolescent, binge-drinking behaviors.

The analysis results support hypothesis one and provides partial support for hypothesis two. Social learning theory is related to the adolescent’s perception of the risk of drugs or alcohol use. If an adolescent’s risk perception of drug or alcohol **was high**, it is less likely an adolescent would engage in binge drinking. Researchers found partial support for low self-control impacting adolescent binge drinking. Displaying risk-taking behavior is associated with binge drinking. This behavior may be due to how the adolescent’s perception of binge drinking is risky but approved behavior. The reason for why there is only partially support is based on Hirschi’s 2004 reconceptualization of low self-control where this study’s measure of social bond theory, “time spent on homework,” is not significant.

The findings from this study have policy implications. Specifically, it is important to enhance educational messages addressing the intrinsic motivations of binge drinking. Given that social learning theory and social control intuitively relates to the punishment, treatment, and educational approaches, it is appropriate to examine how these theories relate to precise reasons adolescents give for binge drinking. When determining their reasons for use, countermeasures can be developed to reduce the likelihood of binge drinking. Additionally, an issue, often arising with many policies related to binge drinking, is how these policies assume a general approach is best. There is little room in the policies for the distinct possibility that explanations for behavior vary across users and change throughout the adolescent’s formative years. From a social learning and social control theory orientation, it is important to determine whether reasons for use change throughout adolescents’ lives. Through such an examination, information needed to guide policies will be forthcoming.

Although these findings provide valuable information that researchers may not be familiar with about adolescent binge drinking and suggest policy implications, the study has some limits. The researchers suggest future studies should consider examining these factors using a longitudinal design to account for potential changes in how specific measures (e.g., binge drinking, non-social reinforcement, peer hard and soft drug use, definitions, etc.,) may change with age.

Despite the limitations, the present study provides an understanding of the factors that contribute to adolescents’ decision to binge drink. Specifically, adolescents who display low levels of self-control are more likely to binge drink. Meanwhile, adolescents holding disapproving definitions for drug and alcohol use are less likely to engage in binge drinking. Further, the findings underscore the importance of utilizing a theoretical approach to examining adolescent binge drinking to organize policies to reduce its occurrence.

Future studies that expand the scope of social learning theory and social control measures will be particularly useful. For now, the present study supports the use of social learning theory and social control theory in studies that examine adolescent binge drinking.

Notes

1. The results of the Varimax rotation are available from the third author on request.
2. The results of the Varimax rotation are available from the third author on request.
3. The results of the Varimax rotation are available from the third author on request.
4. The results of the Varimax rotation are available from the third author on request.

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