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The Role of Positive Expectancies in Risk Behavior: An Exploration of Alcohol Use and Non- Suicidal Self-Injury

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EXPECTANCIES, ALCOHOL USE, & NSSI

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The Role of Positive Expectancies in Risk Behavior: An Exploration of Alcohol Use and Non-Suicidal Self-Injury

Abstract

Background: Alcohol use and non-suicidal self-injury (NSSI) appear to share a conceptual overlap in functions (e.g., tension reduction). Alcohol use has been identified as a risk factor for NSSI, and higher rates of alcohol use have been documented among those with NSSI history.

Aims: This study examined whether NSSI-related alcohol expectancies affect relations between NSSI and alcohol use. **Method:** Participants were 367 college students (73% female) asked to complete an online survey about their drinking behavior and lifetime NSSI. **Results:** NSSI and alcohol use were highly prevalent in this sample: 56% endorsed lifetime NSSI and 74% endorsed current alcohol use. Of note, 43% ($n = 147$) endorsed both behaviors. Positive NSSI-related alcohol expectancies showed a significant association with lifetime NSSI. In addition, positive NSSI-related alcohol expectancies were associated with more frequent drinking behavior for individuals with a history of NSSI, particularly those who have engaged in two or more methods of lifetime NSSI. **Conclusions:** Alcohol use and NSSI represent high-risk behaviors commonly employed to regulate unwanted affective states. Interventions targeting substance use and/or NSSI should address positive NSSI- and substance-use expectancies, as the presence of these beliefs suggests a higher risk profile.

Keywords: NSSI; alcohol use; alcohol expectancies; risk behavior; college students

The Role of Positive Expectancies in Risk Behavior: An Exploration of Alcohol Use and Non-Suicidal Self-Injury

Young adults often engage in an increasing number of health risk behaviors (Arnett, 2000; Velazquez et al., 2011), such as non-suicidal self-injury (NSSI) and alcohol use (Bentley, Nock, & Barlow, 2014; Sloan, Grossman, & Platt, 2011). NSSI involves the direct, deliberate destruction of one's own body tissue in the absence of suicidal intent (Favazza, 1987). Although considered distinct from *suicidal* self-harm, NSSI and suicidal behavior often co-occur (Hamza, Stewart, & Willoughby, 2012) and NSSI has been identified as an important risk factor for suicidality (e.g., Klonsky, May, & Glenn, 2013). Prevalence rates of NSSI among college students are high, with approximately 25% of college students endorsing current or past NSSI (Glenn & Klonsky, 2010; Klonsky & Olino, 2008; Whitlock, Eckenrode, & Silverman, 2006; Whitlock et al., 2011). Past month alcohol use prevalence among four-year college students is even higher (69% females, 71% males; Velazquez et al., 2011).

Notably, alcohol use and NSSI appear to share a conceptual overlap in functions (e.g., tension reduction; Catanzaro & Laurent, 2004; Nock & Prinstein, 2004, 2005). Alcohol use has been identified as a risk factor for NSSI (e.g., Williams & Hasking, 2010) and higher rates of alcohol use/abuse have been documented among college students with NSSI history (e.g., Klonsky, 2011; MacLaren & Best, 2010). Additionally, approximately 20% of college students who endorsed NSSI reported having done so under the influence of alcohol (Klonsky, 2011). However, the literature is mixed as other studies have failed to find significant relations between NSSI and alcohol use (Gollust, Eisenberg, & Golberstein, 2008; Jacobson, Muehlenkamp, Miller, & Turner, 2008; Ogle & Clements, 2008). Thus, the relationship between these behaviors

requires clarification. The current study aims to shed light on associations among NSSI and alcohol use by examining the effects of alcohol- and NSSI-related expectancies.

Alcohol Expectancies

The expectations (i.e., beliefs) an individual holds about a given behavior (e.g., alcohol consumption) may act as reinforcement for that behavior. Alcohol outcome expectancies are defined as the beliefs we hold about the positive and negative cognitive, affective, and behavioral effects of alcohol consumption (Brown, Goldman, & Christiansen, 1985; Leigh, 1989; Quigley & Marlatt, 1996). For example, a positive expectancy is, “I would be friendly.” Alternatively, a negative expectancy is, “I would feel moody.” A fairly large body of literature has documented alcohol-related expectancy influences on alcohol consumption (Carey, 1995; Jones, Corbin, & Fromme, 2001; Monk & Heim, 2013). Importantly, expectancies may impact behavior regardless of their accuracy in predicting behavioral outcomes (see Jones et al., 2001 for a review).

Functions of NSSI

Considerable research has examined the reasons why people engage in NSSI. Self-reported reasons for NSSI engagement are referred to as *functions* (Saraff, Trujillo, & Pepper, 2015). Separate lines of inquiry have consistently demonstrated that NSSI functions fall within two broad dimensions, focusing on either the individual (i.e., intrapersonal or automatic reinforcement) or the social environment (i.e., interpersonal [Glenn & Klonsky, 2009; Klonsky & Olino, 2008] or social [Nock & Prinstein, 2004, 2005] reinforcement). Intrapersonal or automatic functions include reasons such as affect regulation (i.e., to reduce negative affect or tension). Interpersonal or social functions include reasons such as getting attention (Nock & Prinstein, 2004) or peer bonding (Glenn & Klonsky, 2009).

Conceptual Overlap

There is considerable overlap in these explanatory models. For example, tension reduction is a feature common to both positive alcohol expectancies and intrapersonal NSSI functions. In separate literatures, expectations for tension reduction predict increased alcohol consumption (e.g., Hasking, Lyvers, & Carlopio, 2011; Kuntsche, Knibbe, Engels, & Gmel, 2007) and NSSI engagement (e.g., Bolen, Winter, & Hodges, 2012; Nock & Prinstein, 2004, 2005). Similarly, social affiliation (e.g., fitting in, peer bonding) is a commonly endorsed expectancy related to alcohol use (e.g., Gilles, Turk, & Fresco, 2006) and NSSI (Nock, 2008).

From a social learning perspective (Bandura, 1977), expectancies develop according to direct and indirect experiences. Alcohol expectancies are socially shared and transmitted beliefs (Donovan, Molina, & Kelly, 2009; Jones et al., 2001) are largely environmentally influenced (Agrawal et al., 2008; Monk & Heim, 2013). Based on prior work on the social transmission of NSSI (Jarvi, Jackson, Swenson, & Crawford, 2013), expectancies may play a similar role for NSSI; NSSI may be influenced by prior experiences with NSSI in self and/or others. Additionally, expectancies/beliefs about NSSI may be socially shared between those with and without NSSI history (Nock & Prinstein, 2004, 2005).

Together, these considerations suggest that similar expectancies about the potential outcomes of NSSI and alcohol use may further explain associations between these behaviors. However, the theoretical overlap between alcohol expectancies and NSSI functions has not received much attention (Bracken-Minor, McDevitt-Murphy, & Parra, 2012). The goal of the present research was to further understanding of the relationship between NSSI and alcohol use by examining expectancies about alcohol use generally and expectations about NSSI behavior while under the influence of alcohol specifically. This study includes four aims: 1) examine the relationship between NSSI and alcohol use, 2) test a subscale of seven NSSI-related alcohol

expectancies about engaging in NSSI while under the influence of alcohol, 3) examine relationships among expectancies, NSSI, and alcohol use, and 4) examine whether number of NSSI methods affects these relationships.

Method

Sample Characteristics

Data for the present study were collected as part of a larger study of college students' health-risk behaviors and perceptions of participating in online research (see [reference blinded by authors]). The parent study recruited a random sample of 2,500 students, from the general student body of approximately 10,000 students, accessed through the university registrar from a public Midwestern university in the U.S. All students who provided informed consent to the parent study ($n = 847$) were randomized to either an assessment battery that included items about NSSI (i.e., NSSI condition; $n = 439$) or to a control condition that did not include any NSSI assessment ($n = 408$). The institutional review board of the university from which data were collected approved all study procedures.

The present research focuses on data collected from the NSSI assessment condition. Of the 439 participants who consented and were randomized to this group, 367 participants (84% of the sample; 73% female; $M_{\text{age}} = 20.6$ [$SD = 3.14$]) had complete data for present analyses. Participants were primarily European American (95%) and self-identified as “definitely straight/heterosexual” (89%).

Measures

Demographics questionnaire. Demographic items included general questions such as gender, age, race/ethnicity, sexual orientation, sexual attraction, relationship status, education, employment, and post-graduation aspirations.

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4 *Inventory of Statements About Self-Injury* (ISAS; Klonsky & Olino, 2008). Section I of
5
6 the ISAS assesses lifetime frequency of engaging in NSSI. The measure specifically asks
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8 participants only to endorse behaviors that were engaged in in the *absence* of suicidal intent to
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10 ensure that suicidal behaviors are not captured (i.e., “Please only endorse a behavior if you have
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12 done it intentionally (i.e., on purpose) and without suicidal intent (i.e., not for suicidal reasons).”
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14 The original measure includes 11 specific behavioral options (e.g., cutting, biting) as well as an
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16 open-ended “other” response, to which participants respond “Yes/No.” The behavioral section of
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18 the ISAS has demonstrated good reliability (Klonsky & Olino, 2008) and stability over a one-
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20 year period among young adults (Glenn & Klonsky, 2011). For this study, the option
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22 “embedding/inserting objects under your skin” was also included (Lloyd-Richardson, Perrine,
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24 Dierker, & Kelley, 2007). Responses across behaviors were used to identify participants with a
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26 history of one or more NSSI behaviors (i.e., self-injuring group; “positive” NSSI [NSSI+]) and
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28 participants with no NSSI history (i.e., non-injuring group; “negative” NSSI [NSSI-]). ISAS
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30 responses were also used to create the NSSI method indicator to allow for examination of
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32 differences between those participants who endorsed one method of NSSI versus two or more
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34 methods (Robertson, Miskey, Mitchell, & Nelson-Gray, 2013).
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43 *Alcohol use.* Frequency of current alcohol use was assessed with a single item, “How
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45 often do you drink alcohol?” rated on a 5-point scale (1 = *Never* to 5 = *Several times a week*).
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47 Responses were used to identify “drinkers” (endorsement of 2 – 5) and “non-drinkers”
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49 (endorsement of 1). For analyses limited to drinkers, responses two to five were treated as an
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51 ordinal indicator of drinking frequency.
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55 *Comprehensive Effects of Alcohol: Part A* (CEA; Fromme et al., 1993). The CEA is a 38-
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57 item, well-validated measure designed to assess expectancies about being under the influence of
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4 alcohol (Fromme et al., 1993). A general statement, “If I were under the influence of alcohol...”
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6 precedes the 20 items that comprise the positive expectancy subscale (e.g., “I would act
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8 sociable”) and 18 expectancies that make up the negative expectancy subscale (e.g., “My
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10 problems would seem worse”). The general “if” statement preceding all questions on the CEA
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12 allows for assessment of alcohol expectancies for both drinkers and non-drinkers. Questions are
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14 answered on a 4-point Likert scale (1 = *Disagree* to 4 = *Agree*). Variables were created for
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16 positive and negative subscale scores that reflect the mean of the respective items, with higher
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18 scores indicating more expectancies in that domain. The CEA has demonstrated adequate to
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20 good internal consistency among college students ($\alpha = .63 - .84$; Fromme et al., 1993; Ham,
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22 Stewart, Norton, & Hope, 2005; Valdivia & Stewart, 2005). In the current sample, internal
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24 consistency for the positive ($\alpha = .90$) and negative ($\alpha = .90$) expectancy subscales was excellent.
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31 *NSSI-related alcohol expectancies.* Expectancies about engaging in NSSI while under the
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33 influence of alcohol were assessed with seven investigator-generated items randomly dispersed
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35 among the original 38 items of the CEA. The same general statement, “If I were under the
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37 influence of alcohol...” was used with NSSI-related expectancy items to allow for assessment of
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39 expectancies about NSSI and alcohol use for drinkers, non-drinkers, participants with a history
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41 of NSSI, and participants without a history of NSSI. Items included: (“If I were under the
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43 influence of alcohol. . .”) “I expect that I will feel less pain if I self-injured than when I self-
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45 injure when I am sober,” “I expect that self-injury will make me feel better,” “I expect that my
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47 self-injury will result in more damage to my body,” “I expect that when I sober up, I will not
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49 regret having engaged in self-injury,” “I expect that self-injury will make me feel worse,” “I
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51 expect that I will be more likely to engage in self-injury,” “I expect that when I sober up, I will
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regret having engaged in self-injury”. Response choices were identical to those for the CEA items (i.e., 1 = *Disagree* to 4 = *Agree*).

These seven items were subjected to a principal components analysis with varimax rotation. This analysis revealed two subscales explaining 83.35% of the variance: 1) positive NSSI-related expectancies (4 items [e.g., “I expect that self-injury will make me feel better”], eigenvalue = 2.05, $\alpha = 0.60$), and 2) negative NSSI-related expectancies (2 items [e.g., “I expect that self-injury will make me feel worse”], eigenvalue = 1.72, $\alpha = 0.70$). The seventh item (“I expect that I would do more damage to my body”) was discarded due to significant cross-loading.

Results

Descriptive Statistics

In this first section of the results we present the frequency of NSSI and current alcohol use among this sample. Both NSSI and alcohol use were highly prevalent: 56% ($n = 207$) of participants endorsed at least one lifetime episode of NSSI and 74% ($n = 270$) endorsed current alcohol use. Notably, 43% ($n = 156$) endorsed both lifetime NSSI and current alcohol use, and 5% ($n = 18$) reported having used substances during episodes of NSSI.

The NSSI assessment used in this research (i.e., the ISAS) has the potential to capture less severe forms of NSSI (e.g., hair pulling) in addition to the more moderate/severe self-injuring behaviors (e.g., cutting, burning) typically examined in NSSI research. Recent research has examined number of NSSI methods as an indicator of NSSI severity (e.g., Robertson et al., 2013). In the current sample, 129 participants endorsed 2 or more NSSI methods (62% of the self-injuring [NSSI+] participants) and 78 participants (38%) endorsed only one NSSI behavior ($M = 1.51$, $SD = 2.04$ methods, range = 1 to 11). With regards to alcohol use, 114 participants

with no NSSI history reported alcohol use (71% of non-injurers [NSSI-]; 31% of the full sample). For the NSSI+ groups, 93 participants who endorsed 2+ methods of NSSI reported alcohol use, and 63 of those who endorsed one method reported alcohol use.

NSSI+ participants did not differ from NSSI- participants on demographic variables (i.e., age, sex, race/ethnicity, sexual orientation) or drinking status (i.e., drinker vs. non-drinker), all p s < 0.11 .

Bivariate Relations

Next we examined the bivariate relations between alcohol use and expectancies (see Table 1). Drinking status (drinker/non-drinker) was positively correlated with drinking frequency ($r = 0.72, p < 0.001$) and positive alcohol expectancies ($r = 0.17, p < 0.01$), and negatively correlated with negative alcohol expectancies ($r = -0.25, p < 0.001$) and positive expectancies about NSSI-related alcohol use ($r = -0.14, p < 0.01$). Drinking frequency was positively correlated with positive expectancies about alcohol use ($r = 0.31, p < 0.001$) and negatively correlated with negative expectancies about alcohol use ($r = -0.19, p < 0.001$). Among the expectancy scales, positive expectancies about alcohol use were positively correlated with negative expectancies about alcohol use ($r = 0.36, p < 0.001$), positive expectancies about NSSI-related alcohol use ($r = 0.23, p < 0.001$), and negative expectancies about NSSI-related alcohol use ($r = 0.22, p < 0.001$). Negative alcohol use expectancy items were also positively correlated with both positive ($r = 0.42, p < 0.001$) and negative ($r = 0.30, p < 0.001$) NSSI-related alcohol expectancy items.

Next, t-tests were used to compare NSSI+ and NSSI- participants on drinking frequency and the four expectancy indicators. NSSI+ and NSSI- participants did not differ on drinking frequency ($t = -9.98, p = 0.33$) or negative alcohol expectancies ($t = -1.10, p = 0.27$). In addition,

NSSI+ and NSSI- participants did not differ for negative NSSI-related alcohol expectancies ($t = 0.26, p = 0.80$).

A marginally significant difference was observed for positive alcohol expectancies, $t = 1.87, p = 0.06$; NSSI+ participants reported slightly higher positive expectancies about alcohol compared to NSSI- participants ($M_{\text{NSSI}+} = 2.87, M_{\text{NSSI}-} = 2.76$). Also, and as expected, NSSI+ participants had significantly higher mean scores on the positive NSSI-related alcohol expectancies scale ($M_{\text{NSSI}+} = 1.70, M_{\text{NSSI}-} = 1.51; t = 2.87, p = 0.004$).

Multivariate Analyses

The results of the bivariate analyses suggest that NSSI+ participants hold more positive beliefs about the effects of alcohol, and about the effects of NSSI under the influence of alcohol, compared to NSSI- participants. To further understand these relations, multivariate analyses were executed to explore the relationships among alcohol- and NSSI-related expectancies, NSSI, and alcohol use for NSSI+ and NSSI- participants. Specifically, multiple logistic regression predicting NSSI status (present vs. absent) was used to determine whether NSSI was uniquely related to any of the four expectancy indicators and/or drinking status (see Table 2). Notably, positive NSSI-related alcohol related expectancies were marginally significantly related to NSSI, Wald $\chi^2 [1] = 3.65, p = 0.06$. Specifically, a one unit increase in endorsement of positive NSSI-related alcohol expectancies was associated with nearly a 50% increase in the odds of reporting one or more NSSI behaviors, OR = 1.57, 95% CI = .99 – 2.50, after controlling for the effects of positive and negative alcohol expectancies, negative NSSI-related alcohol expectancies, and drinking status.

Due to the high prevalence of NSSI in the current sample (56%), follow-up analyses included examination of these relationships by number of NSSI methods (i.e., NSSI- participants

[$n = 160$] vs. NSSI+ participants who engaged in only one method of NSSI [$n = 78$] vs. NSSI+ participants who engaged in 2+ NSSI methods [$n = 129$]). Multinomial logistic regression predicted number of NSSI methods (none vs. 1 method vs. 2+ methods) from drinking status and the four expectancy indicators. Of note, none of the expectancy indicators significantly differentiated participants who endorsed one method compared to those who endorsed no NSSI history (see Table 3). However, positive NSSI-related alcohol expectancies were found to significantly, uniquely relate to increased likelihood of endorsing 2+ lifetime NSSI methods relative to endorsing no NSSI history (Wald $\chi^2 [1] = 8.75, p < 0.01, OR = 2.12, 95\% CI = 1.29 - 3.49$) and to endorsing one method (Wald $\chi^2 [1] = 4.10, p < 0.05, OR = 1.87, 95\% CI = 1.02 - 3.44$). In sum, multivariate analyses predicting NSSI status and multinomial logistic regressions predicting number of NSSI methods suggest that positive expectancies about NSSI during alcohol use in particular are associated with multiple NSSI methods.

Exploratory Moderation Analyses Among NSSI Group

Additional exploratory analyses were conducted for those participants with a history of NSSI ($n = 207$) to examine the impact of NSSI on the relationship between: 1) expectancies and drinking status, and 2) expectancies and drinking frequency. In the first analysis, drinking status was predicted simultaneously by the four expectancy indicators. In this analysis, only positive alcohol expectancies were a significant predictor of drinking status (Wald $\chi^2 [1] = 16.41, p < .001, OR = 10.67, 95\% CI = 3.39 - 33.57$). In the second analysis, drinking frequency was predicted simultaneously by the four expectancy indicators. Positive alcohol expectancies were found to significantly, uniquely relate to increased likelihood of drinking several times a week relative to drinking less than once a month (Wald $\chi^2 [1] = 11.02, p = .001, OR = 14.93, 95\% CI = 3.03 - 73.67$). Additionally, positive NSSI-related alcohol expectancies were found to

significantly, uniquely relate to increased likelihood of drinking several times a week relative to drinking less than once a month (Wald χ^2 [1] = 3.98, p = .05, OR = 2.87, 95% CI = 1.02 – 8.10).

Again, this suggests that positive expectancies about NSSI and alcohol use are associated with more frequent drinking behavior among college students with NSSI history.

We also examined whether positive NSSI-related alcohol expectancies moderated the relationship between number of NSSI methods (1 method vs. 2+ methods) and drinking status.

First, drinking status was predicted by NSSI severity, positive NSSI-related alcohol expectancies, and the interaction between NSSI severity and positive NSSI-related alcohol expectancies. The interaction between number of methods and positive NSSI-related alcohol expectancies was not significant, Wald χ^2 [1] = 1.55, p = .21, OR = .66, 95% CI = 0.34 – 1.27.

Finally, a third set of analyses examined whether positive NSSI-related alcohol expectancies moderated the relationship between number of methods and drinking frequency. Drinking frequency was predicted by number of methods, positive NSSI-related alcohol expectancies, and the interaction between number of methods and positive NSSI-related alcohol expectancies. The interaction between number of methods and positive NSSI-related alcohol expectancies was not significant.

Discussion

NSSI and alcohol use are prevalent health risk behaviors among young adults (e.g., Bentley et al., 2014; Velazquez et al., 2011; Whitlock et al., 2011). Expectancies about the positive and negative consequences of engaging in risk behaviors (e.g., engaging in NSSI while under the influence of alcohol) may offer further tools for risk assessment and management. Some evidence suggests that alcohol use/abuse increases risk for NSSI (e.g., Klonsky, 2011), although other research has not supported this association (e.g., Gollust et al., 2008). The present

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4 study aimed to expand upon prior research on these behaviors by examining whether
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7 expectancies can inform our understanding of relations between NSSI and alcohol use among
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9 college students.

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11 The pattern of findings suggests that the presence of positive NSSI-related alcohol
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13 expectancies (e.g., “If I were under the influence of alcohol I expect that self-injury will make
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16 me feel better”) in particular represents increased risk for NSSI. More specifically, college
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18 students with a lifetime history of NSSI endorsed more positive NSSI-related alcohol
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20 expectancies than students with no NSSI history (this difference approached but did not achieve
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22 statistical significance when the effects of drinking status, positive and negative alcohol
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24 expectancies, and negative NSSI-related alcohol expectancies were controlled for in a subsequent
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26 analysis; $p = .06$). In addition, positive NSSI-related alcohol expectancies statistically
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28 significantly differentiated participants who reported a history of multiple NSSI methods from
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30 participants with a history of one NSSI method, and from participants who denied any NSSI
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32 behavior. Furthermore, in analyses limited to those with NSSI history, positive NSSI-related
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34 alcohol expectancies were associated with more frequent drinking.
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41 Taken together, this set of findings suggests that young adults may be more likely to
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43 engage in clinically-concerning levels of these health risk behaviors (i.e., using two or more
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45 methods of NSSI [Roberston et al., 2013], consuming alcohol more frequently [Velazques et al.,
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47 2011]) because of, in part, their more positive beliefs about the effects and outcome of both NSSI
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49 and of alcohol use. These beliefs may be informed by prior learning and reinforced over time as
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51 NSSI and/or drinking has effectively reduced distress and provided significant short-term gain
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53 (see Nock & Prinstein, 2004, 2005). Alternatively, these beliefs may be related to the
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55 individual’s overall thinking style and belief system. Individuals engaging in multiple risk
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4 behaviors may have greater overall psychopathology and emotional dysregulation that
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7 contributes to the development of this type of coping.
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9 The implications of these findings may be salient for exploration of risk behaviors
10 generally, and particularly for overlapping and co-occurring maladaptive behaviors used to cope
11 with and manage unwanted affect. Notably, prior work in adolescent mental health screening
12 suggests that assessment of risk behaviors generally (i.e., NSSI and alcohol use) is important
13 information to gather in addition to assessing specific psychopathology (Kaess et al., 2014). The
14 authors found that certain risk behaviors, including NSSI, significantly predicted help-seeking
15 behavior. In a related study, Kahn and colleagues (2015) found that NSSI and alcohol misuse
16 were both excellent predictors of need for treatment referral following a school-based screening
17 for early detection of mental health problems. These studies suggest that the presence of multiple
18 risk behaviors may have a significant impact on the development/course of psychopathology, be
19 signs/symptoms of psychopathology, and/or affect help-seeking behavior and attitudes towards
20 treatment and are important considerations for mental health screening, intervention, and
21 treatment (Kaess et al., 2014; Kahn et al., 2015). The findings from the current study add to this
22 prior work by highlighting the importance of also screening for beliefs about the positive
23 outcomes (i.e., perceived benefits) of engaging in high risk behaviors such as NSSI and alcohol
24 use.
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48 While the results of the current study are intriguing, several limitations also warrant
49 mention. First, results were drawn from a homogeneous college sample, limiting generalizability.
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51 Second, the cross-sectional study design limits conclusive evidence for any causal relationships
52 between variables. Additionally, alcohol use was assessed with one item and did not include
53 information about typical quantity consumed or assess for problem drinking behaviors.
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4 Examination of severity of problem drinking (e.g., binge drinking) may provide further
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6 information about the associations between more moderate/severe NSSI and problematic
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8 drinking. Finally, our current measures did not assess how *often* individuals who have engaged in
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10 NSSI were doing so while under the influence of alcohol. In part, this was due to our primary
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12 focus on the expectancies around NSSI and alcohol use rather than specific examination of the
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14 co-occurrence of these behaviors. However, documentation of the frequency of this co-
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16 occurrence may be an interesting construct to explore.
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21 Additional future directions may consider exploration of these relationships in samples
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23 that include demographic diversity. Further, longitudinal studies that assess how expectancies
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25 change over time and across developmental periods may aid in our understanding of their impact
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27 on behavior. Finally, prevention and intervention efforts may consider expectancy modification
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29 as a salient clinical tool to address risk assessment/management. Clinicians working from a
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31 cognitive-behavioral therapy perspective may apply cognitive restructuring techniques to
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33 challenge positive expectancies about NSSI and alcohol use. In sum, study results suggest that
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35 positive expectancies about NSSI and/or alcohol use may be an additional avenue in identifying
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37 risk. Individuals who have used more than one method to harm themselves may be at particular
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39 risk of not only continuing to engage in NSSI over time, but also for use of additional
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41 maladaptive coping strategies that serve similar functions (e.g., drinking excessively to reduce or
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43 eliminate distress) commonly reported for NSSI (see Nock & Prinstein, 2004, 2005).
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EXPECTANCIES, ALCOHOL USE, & NSSI

Table 1

Correlations among Alcohol Use and the Four Expectancy Indicators

| Variable | 2 | 3 | 4 | 5 | 6 |
|------------|--------|--------|---------|--------|--------|
| 1. DS | .72*** | .17** | -.26*** | -.14** | -.02 |
| 2. DF | | .31*** | -.19*** | -.02 | -.03 |
| 3. PosETOH | | | .36*** | .23*** | .22*** |
| 4. NegETOH | | | | .42*** | .30*** |
| 5. PosNSSI | | | | | -.002 |
| 6. NegNSSI | | | | | |

Note. DS = Drinking Status, DF = Drinking Frequency, PosETOH = Positive Alcohol

Expectancies, NegETOH = Negative Alcohol Expectancies, PosNSSI = Positive NSSI-related Alcohol Expectancies, NegNSSI = Negative NSSI-related Alcohol Expectancies.

* $p < .05$. ** $p < .01$. *** $p < .001$.

EXPECTANCIES, ALCOHOL USE, & NSSI

Table 2

Logistic Regression Predicting Likelihood of Reporting NSSI According to Drinking Status

| Variable | B | S.E. | Wald | df | <i>p</i> | OR | 95% CI |
|----------|-------|------|------|----|----------|------|-------------|
| PosETOH | .18 | .25 | .49 | 1 | .48 | 1.19 | [.73, 1.94] |
| NegETOH | .06 | .30 | .04 | 1 | .84 | 1.07 | [.60, 1.89] |
| PosNSSI | .45 | .24 | 3.65 | 1 | .06 | 1.57 | [.99, 2.50] |
| NegNSSI | -.11 | .13 | .75 | 1 | .39 | .89 | [.69, 1.15] |
| DS | .51 | .33 | 2.36 | 1 | .12 | 1.67 | [.87, 3.22] |
| Constant | -1.62 | .83 | 3.83 | 1 | .05 | .20 | |

Note. PosETOH = Positive Alcohol Expectancies, NegETOH = Negative Alcohol Expectancies, PosNSSI = Positive NSSI-related Alcohol Expectancies, NegNSSI = Negative NSSI-related Alcohol Expectancies, DS = Drinking Status.

EXPECTANCIES, ALCOHOL USE, & NSSI

Table 3

Alcohol Expectancies, NSSI-related Alcohol Expectancies, and Drink Status for the NSSI-

NSSI+ (1 method), and NSSI+ (2+ methods) Groups

| | NSSI- vs. 1 method Odds ratio (95% CI) | NSSI- vs. 2+ methods Odds ratio (95% CI) | 1 method vs. 2+ methods Odds ratio (95% CI) |
|---------|---|---|--|
| PosETOH | 1.07 (.56-2.07) | 1.29 (.74-2.25) | 1.21 (.60-2.44) |
| NegETOH | 1.44 (.67-3.10) | .96 (.50-1.84) | .67 (.29-1.53) |
| PosNSSI | 1.13 (.61-2.08) | 2.12 (1.29-3.49) | 1.87 (1.02-3.44) |
| NegNSSI | .87 (.63-1.20) | .99 (.75-1.32) | 1.14 (.81-1.61) |
| DS | 2.50 (.95-6.58) | 1.28 (.63-2.60) | .51 (.19-1.42) |

Note. PosETOH = Positive Alcohol Expectancies, NegETOH = Negative Alcohol Expectancies,

PosNSSI = Positive NSSI-related Alcohol Expectancies, NegNSSI = Negative NSSI-related

Alcohol Expectancies, DS = Drinking Status.