

Risky Behavior: The Roles of Depression, Openness to Experience, and Coping

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The current study aims to better understand the roles of depressive symptoms, the Big Five personality trait of openness to experience, sensation seeking, and disengagement coping in risky behavior engagement. A total of 134 participants filled an online questionnaire that measured depression levels, Big Five personality traits, risky behaviors recently engaged in, and whether engagement in risk was for sensation seeking or disengagement coping. It was hypothesized that those who have depressive symptoms will be more likely to engage in (1) general risky behavior for disengagement coping, and (2) risky substance use for disengagement coping, and that those high in openness to experience will be more likely to engage in (3) general risky behavior for sensation, and (4) risky substance use for sensation. Results supported hypotheses 1 & 2, but not 3 & 4. There was an interesting trend for those with openness to report engaging in risky substance use for disengagement coping. Post hoc, there was a positive correlation found between sensation seeking and disengagement coping, suggesting possible engagement in risk for both distraction and sensation. The results from the current study suggest that education on adaptive coping methodology would be beneficial to those suffering with depression.

Introduction

Engaging in risk is a part of the human condition. Some of the biggest life events an individual may experience are possible through taking emotional or physical risks. However, risk-taking can take an insidious role when the risks do not seem to have any perceivable long-term benefits, and may cause irreparable damage to the individual engaging in the risk. For the purposes of this study, collected definitions from various resources identify risky behaviors as behaviors that an individual intentionally performs that may cause injury to their mind and/or body, not including suicidal completion (Sadeh & Baskin-Somers, 2016; Turner, McClure & Pirozzo, 2004). In this way, risky behaviors include: risky sexual behaviors (RSB) (any sexual behavior that increases the likelihood of negative or unwanted consequences, such as

an STD or unwanted pregnancy) delinquency (e.g. fighting, joining a gang, thievery), risky substance use (abusing drugs and/or alcohol), risky driving (e.g. driving while intoxicated, excessive speeding), and self-mutilation (e.g., cutting, scratching, burning, also known as deliberate self-harm or non-suicidal self-injury). While these risky behaviors are performed seemingly without any apparent benefit to the individual, underlying motives may exist. It is the intention of the present research to illuminate some of the underlying motives behind risky behavior engagement.

Discovering the motivations behind risky behavior engagement remains a complicated endeavor. While there is no single personality trait or characteristic that guarantees an individual will engage in unnecessary risk, some correlations between neuroticism and risk have been discovered (Auerbach, Abela, & Ho, 2007), as well as

coping style and engagement in risk (Cooper, Wood, Orcutt & Albino, 2003). However, not all engagement in risk can be attributed singularly to personality or coping. In example, various forms of deliberate self-harm (DSH) have been strongly correlated with personality dimensions of openness to experience and sensation seeking, while also being strongly correlated with depression, a history of emotional abuse, and physical neglect (Goldstein, Flett, Wekerle, & Wall, 2009). To confuse matters further, there are differences in the type of risk an individual engages in, as men tend to report placing themselves in harmful situations, while women report more acts of cutting themselves. Indeed, adolescent men are more likely to engage in risky behaviors in general (Auerbach, Tsai, & Abela, 2010).

The unpredictability of risk engagement can make it difficult to foresee an individual's likelihood to engage in risky behavior, and for a professional to intervene before irreversible harm occurs. Discovering the relation between variables such as coping, personality, and the type of risk an individual engages in may therefore provide a greater understanding of the individuals who engage in risk, and why they do it. Consequently, while single variables do not guarantee risky behavior, the relations between variables can help to predict risky behavior engagement. This could be especially beneficial for individuals who engage in risky behavior habitually, as continuing to engage in harmful risks may lead to irreversible consequences. This study will consider the influence of depression, coping style, and personality on engagement in harmful risky behaviors.

The Role of Depression

The depressive state of mind is a mental condition that affects a growing number of the population, both clinical and non-clinical, and is characterized by a lowered mood, feelings of helplessness, and

decreased self-esteem (Parker & Patterson, 2015). This state of lowered mood and hopelessness can cause serious distress to the individual suffering from depression, and the symptoms may impede with their ability to complete daily tasks.

Regarding depression's impact on risk-taking, men have reported dangerous risk-taking and misuse of alcohol as a means of escaping their depression and negative affect (Ramirez & Badger, 2014; Whittle et al., 2015). There is also a correlation between increases in depression and the likelihood of engagement in risky sexual behavior, with self-reports suggesting that when men experience increased depression, they are more likely to engage in risky sexual acts that may endanger others as well as themselves (Wilson, Stadler, Boone, & Bolger, 2014). Similar reports show that there are men in the homosexual community who engage in unprotected anal sex as a way to deal with stress and negative emotions. (Folkman, Chesney, Pollack & Phillips, 1992). This evidence suggests that men may be dealing with their depressive symptoms in a maladaptive manner by engaging in risk.

This seemingly gender specific pattern of men taking risks and using maladaptive coping to deal with their depressive symptoms may be due to hegemonic masculinity—the dominant and culturally acceptable behaviors for men to display (Whittle et al., 2015). In Western society, the dominant cultural expectation is for men to deal with their emotion solitarily, with strength and stoicism. It is then possible to consider that men are choosing this risky, self-destructive outlet in order to conform to the cultural and societal expectations of their gender.

However, the correlation between risky behavior and depression is not exclusive to men, as reports of sexual behavior by adolescents of both genders indicate that risky sexual behaviors positively correlate with depression (Kosunen, Heino, Rimpela & Laippala,

2003). Sexually active adolescents of both genders report an increase in depression that correlates with non-contraception use and an increase in sexual partners. Conversely, adolescent girls who engage in sexual activities with a steady dating partner report lowered depressive symptoms. These results indicate that it is not sexual activity, but rather the risky sexual behavior of non-contraception use and the increased number of sexual partners that correlate with depression.

Other risky behaviors, such as driving drunk, not wearing a seatbelt, and not wearing a helmet while riding a bicycle, correlate with feelings of depression in adolescents (Testa & Steinberg, 2010). The feeling of hopelessness, especially, serves as a mediator between depression and risky behaviors in adolescents, again indiscriminant of gender. Feeling hopeless may lead an individual to disregard safety precautions (seatbelts, helmets) due to the lack of care for their physical well-being, thus placing them in a precarious and risky situation.

Other forms of risk taking, such as gambling, have dubious connections to depression (Leith & Baumeister, 1996). To measure emotion and its relationship to risk-taking, participants related their current mood and its intensity, and then were presented with an opportunity to engage in a risky gambling venture. Participants who reported negative feelings such as embarrassment, anger, frustration and guilt engaged in the riskiest gambling venture, despite understanding the negative consequences should the gamble be unsuccessful. These results suggest that the inclination to engage in risky behavior directly relates to emotional state. The only negative affect that did not result in risky gambling, however, was sadness. Contrarily, in interviews with sufferers of depression, gambling was cited as a means to deal with depression (Ramirez & Badger, 2014). These contrasting reports only further the need to

understand depression's role in risk engagement.

One unambiguous correlation between depression and risky behavior is that of depression and DSH (Goldstein, Flett, Wekerle & Wall, 2009) and non-suicidal self-injury (NSSI; Hoff & Muehlenkamp, 2009). Besides the direct correlation between depressive symptoms and engagement in various forms of DSH (Goldstein, Flett, Wekerle & Wall, 2009), it has been shown that when an individual excessively ruminates on negative issues, it correlates with greater levels of depression, which then positively correlates with engagement in NSSI (Hoff & Muehlenkamp, 2009). Thus, depression may be a predictor of risk-engagement.

Interestingly, research into DSH has shown that individuals may engage in DSH in response to negative feelings (Auerbach, Abela, & Ho, 2007) depressive symptoms (Auerbach, Tsai, & Abela, 2010), and poor body image (Cerutti, Presaghi, Manca, & Gratz, 2012) that occur both before *and* after an individual behaves in a risky way. Indeed, many non-clinical acts of DSH go unreported due to the feelings of shame accompanied by the behavior, yet if an individual communicates with friends and family about their depressive symptoms, they are less likely to engage in DSH (Latina, Giannotta & Rabaglietti, 2015). This body of evidence suggests that there may be a cyclic causation to engagement in risk, such that negative emotionality (depressive symptoms) may predict engagement in DSH, and that the negative emotionality following DSH (shame) may then lead to more engagement in risk. These findings warrant further research into depression and engagement in risk.

The body of research presented suggests that the way individuals deal with their depression and negative emotions can affect whether they engage in risky behavior. Therefore, the current research considers depressive symptoms as a possible predictor

of engagement in risky behavior. To understand more completely the roles of depression and risk, it is important to take a deeper look into the ways in which an individual may cope with their depressive symptoms, and how it may lead to engagement in risky behaviors.

The Role of Coping

Coping methods are shifting cognitive strategies that an individual uses to mediate their emotions in stressful situations (Folkman & Lazarus, 1988). While coping strategies vary, many are categorized into two groups: problem-focused coping strategies and emotion-focused coping strategies (Carver, Scheier, & Weintraub, 1989). Problem-focused coping strategies concentrate on identifying the stressor that is causing emotional distress and then utilize problem-solving methods to alleviate the stressor. Emotion-focused coping, by contrast, concentrates on alleviating the emotions that the stressor causes. The effectiveness of each coping strategy is debatable, as its impact on the individual who is utilizing the method is dependent upon the situation. In example, while one strategy may prove beneficial in one situation, it may be detrimental in another. Likewise, one strategy may be beneficial to one individual, and yet not to another.

While coping strategies are not unilaterally positive or negative, there are some that are arguably considered more adaptive: engagement coping, seeking support, strategically regulating emotions, cognitively restructuring the situation in a better light, and seeking solace in spirituality (Connor-Smith & Flachsbart, 2007). These coping methods correlate with lower stress and better well-being. In contrast, coping strategies that are debatably considered maladaptive, or less conducive to stable mental health, are identified as behavioral disengagement, mental disengagement, and focusing on or venting of emotions. (Carver,

Scheier, & Weintraub, 1989; Connor-Smith & Flachsbart, 2007). These coping strategies may be considered maladaptive due to the increased likelihood that their implementation may impede an individual's ability to move through the stressor, effectively keeping the individual in a state of distress. In example, while venting may help temporarily alleviate acute stressful emotions (adaptive), continuing to vent may keep an individual in the state of emotional distress that the stressor had incited (maladaptive). Mental and behavioral disengagement may also prevent an individual from moving beyond the stressful event, due to the use of distraction to take an individual "away" from the stressor instead of confronting it. Examples of mental and behavioral disengagement include avoidance, denial, suppression, wishful thinking, distraction, withdrawal, and substance use (Connor-Smith & Flachsbart, 2007). Regarding risky behavior, individuals may take risks as a form of mental and/or behavioral disengagement to cope with stressful situations.

Research has shown that individuals who engage in DSH/NSSI do in response to negative emotions (Chapman, Gratz & Brown, 2006; Davis et al., 2014; Hoff & Muehlenkamp, 2009; Polk & Liss, 2009). Those engaging in DSH/NSSI report feelings of hopelessness, (Hoff & Muehlenkamp, 2009; Smith, Alloy & Abramson, 2006), anxiety (Hoff & Muehlenkamp, 2009), and an increase in substance use (Goldstein et al., 2009). This signifies that as anxiety, hopelessness, and substance use increase, probability of engagement in DSH/NSSI increases. There is also a negative correlation between DSH/NSSI and emotion regulation (Davis et al., 2014), signifying that the worse an individual is at effectively regulating their negative emotion, the more likely they are to engage in DSH/NSSI. Ineffectively regulating emotion can increase the prevalence of the negative emotions within the individual, and thus an individual may

use disengagement coping methods to attempt to escape the negative affect (Chapman, Gratz & Brown, 2006). Regarding DSH/NSSI, individuals use disengagement coping to escape from their negative affect by redirecting their pain to something physical that can allow them to avoid their inner turmoil. In an exploratory investigation, individuals who routinely self-harmed indicated that the action of self-harming facilitated “release emotion and display emotional pain physically” and to “distract themselves” (Polk & Liss, 2009). Instead of utilizing positive coping methods, these individuals turned to self-harm to alleviate their negative affect and depression.

The evidence of engagement in DSH for disengagement coping is strong, and due to its prevalence, it is logical to consider its application to other forms of risky behaviors. Likewise, since there is a strong correlation between depression and DSH, there is reason to explore the possibility that those with depression may engage in other risky behaviors for the disengagement that it provides.

The Role of Personality

While depression and coping methodology clearly have a role in risky behavior engagement, personality has a more complicated role due to the multifaceted nature of personality. Although an individual’s personality stays relatively consistent throughout the lifespan (Funder, 2013 p. 236), personality consists of multidimensional traits that are not always easy to measure. In example, the Big Five personality trait of neuroticism correlates with acts of risky behavior, yet those with high levels of neuroticism who display adaptive emotional regulation engage in less risky behaviors than those with high levels of neuroticism and maladaptive emotion regulation (Auerbach, Abela, & Ho, 2007). This suggests that personality traits alone do not guarantee engagement in risk, but they do

play a role. Therefore, the current study will further investigate how an individual’s personality relates to emotion regulation, coping, and engagement in risk.

Regarding coping preference among the Big Five personality traits, there are significant correlations between neuroticism and all categories of disengagement coping, and positive correlations between openness to experience and withdrawal, distraction, and wishful-thinking styles of disengagement coping (Connor-Smith & Flachsbart, 2007). Furthermore, when measuring the levels of conscientiousness and neuroticism in individuals, those with the poorest coping methodologies and the highest vulnerability to stress have a combination of high neuroticism and low conscientiousness (Grant & Langan-Fox, 2006; Vollrath & Torgersen, 2008).

Regarding direct correlations between personality and risky behavior engagement, combinations of low conscientiousness, high neuroticism, high extraversion, low inhibition (high extraversion trait), and high compulsivity (high extraversion trait) engage in the most acts of risky behavior (Vollrath & Torgersen, 2008). While there is evidence of certain personality traits serving as predictors of engagement in risk, it is in the interest of this paper to investigate the role of openness to experience in risky behavior engagement.

Openness to experience is a Big Five personality trait characterized by creativity, intelligence, open-mindedness, and curiosity (Funder, 2013, p. 230). Although sparse, there is research supporting a correlation between openness to experience and engagement in risky behavior, such as with DSH (Cerutti, Presaghi, Manca, & Gratz, 2012), and placing oneself into risky situations that may result in harm (Goldstein, Flett, Wekerle, & Wall, 2009). Those with an open to experience personality type also show an increased likelihood to use substance either for the pleasurable sensation it provides or for the distraction it provides, and potentially for both (Connor-Smith &

Flachsbart, 2007). For instance, those high in openness and low in conscientiousness and agreeableness report greater instances of marijuana abuse, suggesting that individuals with these traits are open to new sensations but prone to withdrawal-coping (Flory, Lynman, Milich, Leukefeld & Clayton & 2002). Indeed, self-reports show that those with an openness to experience personality trait initially use drugs and alcohol in their search for disinhibition, sensation, and experience (Paunonen, 2003). In this way, those high in openness may use opportunities to abuse substance more than those who are lower in openness.

Although there is some research suggesting that those with openness may use disengagement coping to deal with their stress and negative emotions (Connor-Smith & Flachsbart, 2007), it is still unclear if they are more likely to engage in risky behaviors for disengagement coping. There is, however, evidence that they may be engaging in risky behaviors for seeking sensation, as suggested in their use of drugs and alcohol for disinhibition, sensation, and experience (Paunonen, 2003).

Those who seek sensation desire novel and varied experiences and sensations for the stimulation they provide (Zuckerman, Bone, Neary, Mangelsdorff & Brustman, 1972). Those with high levels of sensation seeking report more risk-taking behaviors, such as experimentation with drugs, alcohol, and sexual experiences. Indeed, those reporting high novelty-seeking tendencies also reported high levels of RSB (Gil, 2005), suggesting a correlation between sensation seeking and RSB. Another risk-taking behavior, problematic gambling, correlates with intensity-seeking, a variant of sensation seeking that focuses on sensory experiences (Nower, Derevensky & Gupta, 2004). Sensation seeking also correlates with engagement in DSH/NSSI, most likely due to the novel experience that self-harm provides (Goldstein, Flett, Wekerle, & Wall, 2009). High sensation seekers may pursue such

experiences at the risk of emotional or physical harm, due partly to their sensitivity to rewards over penalties, with thrill seekers more likely to engage in alcohol use, tobacco use, and violence (Cooper et al., 2003). In this way, those who actively seek sensation focus primarily on the immediate rewards rather than the possible negative aftereffects that could occur, as seen in the increased likelihood of substance use by sensation seekers (Desrichard & Denarie, 2005). There is also evidence that sensation seekers may engage in frequent risk taking to distract themselves from negative affectivity. More research, however, is needed in order to determine that relation.

Those with openness to experience and those who seek sensation share the desire for novelty in mental stimulation, as those with openness to experience are characterized as curious and open-minded (Costa & McCrae, 1995), a tendency shared by those with a sensation seeking personality with high levels of experience-seeking (Zuckerman et al., 1972). While openness to experience and sensation seeking have overlapping characteristics and engagements in certain acts of risky behavior, scant investigation has been done into whether those with openness to experience engage in risky behaviors for the sensation it provides. With the evidence presented, it is therefore logical to predict that those with high levels of openness may engage in risks for the sensation it provides.

Hypotheses

With the evidence provided in the literature, it is the intention of the current study to uncover possible reasons why an individual may engage in risky behaviors. Due to the prevalence of literature on the use of substance by those with openness to experience and limited information on other risky behaviors by those with openness, this research investigates risky substance use apart from general risky behaviors. In this

way, it is possible to uncover whether or not those with openness are more likely to engage in risky behaviors in general as well as risky substance use, along with determining possible reasons why.

The investigation into depression and risk engagement also separates risky substance use and general risky behaviors. In this way, there is consistency across the study.

It is therefore hypothesized that:

1. Those with depressive symptoms will be more likely to engage in risky behaviors in general as a form of disengagement coping.
2. Those high in the open to experience personality trait will be more likely to engage in risky behaviors in general for the sensation it provides.
3. Those with depressive symptoms will be more likely to engage in risky substance use as a form of disengagement coping.
4. Those high in the open to experience personality type will be more likely to engage in risky substance use for the sensation it provides.

Methods

Procedure

The current study utilized an online survey platform to conduct the study. Participants completed multiple surveys that were designed to measure levels of depression, Big Five personality traits, the number of risky behaviors they have engaged in, and whether or not they engage in risk for disengagement coping or for sensation seeking. After answering the survey questions, the participants completed some basic demographic questions. Upon completion, participants were debriefed and provided with information on local counseling services, as well as alcohol and drug rehabilitation centers, should they feel

they need mental help services or help with addiction.

Measures

Personality. The Big Five Inventory (BFI) (John & Srivastava, 1999) was used to measure Big Five personality traits. On each trait represented, the participants indicated to what extent that trait pertained to them using a Likert scale of 1-5, with 5 = Agree Strongly and 1 = disagree strongly. Questions 35 and 41, pertaining to openness to experience, were reverse coded. By summing the scores, the highest score possible per trait would be 50, and the lowest score would be 10. The current study averaged the scores, with the highest score possible being five, and the lowest score possible being one. The BFI has a good reliability of $\alpha = .80$. (See Appendix A)

Depression. The survey used to measure depressive symptomology was the CES-D (Radloff, 1977). Participants indicated the extent to which they agreed with the statements within the past week using a scale of 0-3. On this scale, 0 = "Rarely or none of the time (less than one day)", 1 = "some or a little of the time (1-2 days)", 2 = "occasionally or a moderate amount of time (3-4 days)", and 3 = "most or all of the time (5-7 days)". After reverse-coding four items, questions 4, 8, 12 and 16, the answers were averaged, with scores averaging closer to 3 indicative of higher depressive symptomology. It has a good reliability of $\alpha = .85$ (See Appendix B).

Risky behavior. To measure the participant's level of frequency concerning risky behavior, the Risky, Impulsive, and Self-Destructive Behavior Questionnaire (RISQ) (Sadeh & Baskin-Somers, 2016) was utilized. It has a very good reliability of $\alpha = .92$. For each risky behavior, the participant was asked "How many times have you ___ in the past month?" The participant then entered the appropriate number. The RISQ was

adapted to better suit the needs of the study, as certain questions were excluded and the format was altered for online use. The questions excluded were, "How many times total have you done this in your life?" and "How old were you the first time?" The RISQ was also used to measure, on a Likert scale of 0-4, how much the participant identified with either disengagement coping or sensation seeking as motivation to engage in risky behaviors, with 0 indicating "strongly disagree" and 4 indicating "strongly agree". Disengagement coping was described as, "I do this behavior to stop feeling upset, distressed, or overwhelmed", and sensation seeking was described as, "I do this behavior to feel excitement, to get a thrill, or to feel pleasure." The responses were averaged, with scores closer to 4 indicating stronger motivation to engage in risk for either disengagement coping or sensation seeking, respectively. (See Appendix C).

Demographics. Participants were asked their age, sexual orientation, biological sex, the culture they most identified with, whether or not they were currently in a committed romantic relationship, and their race.

Results

After eliminating five outliers from the study due to their extreme scores, 134 participants from the Shepherd University participant pool were included in the study. Of the participants, 91 were women and 43 were men, with ages ranging from 18 to 45.

Engagement in Risk

An OLS multiple regression analysis was used to measure whether those with higher levels of depressive symptoms were more likely to engage in risky substance use or risky behaviors in general than those low or without depressive symptoms. Those with

higher levels of depressive symptoms did not report significantly more engagement in risky substance use, $\beta = .000$, $t(43) = -.02$, $p = .99$, $sr^2 = .000$, or engagement in general risky behaviors, $\beta = .006$, $t(87) = .52$, $p = .60$, $sr^2 = .003$ than those low or without depressive symptoms.

An OLS multiple regression analysis was used to measure whether those high in openness were more likely to engage in risky substance use or risky behaviors in general than those low or without openness. Those high in openness did not report significantly more engagement in general risky behaviors than those low or without openness, $\beta = .007$, $t(87) = .69$, $p = .49$, $sr^2 = .006$. However, those high in openness reported a trend towards more engagement in risky substance use, $\beta = .04$, $t(43) = 1.67$, $p = .1$, $sr^2 = .07$ than those low or without openness.

Disengagement Coping

An OLS multiple regression analysis measured whether those with higher levels of depressive symptoms were more likely to utilize disengagement coping than those with lower levels of depressive symptoms or without depressive symptoms. Those with higher levels of depressive symptoms did report significantly more engagement in risk-taking in general for disengagement coping (see Table 1 and Figure 1) than those with lower levels of depressive symptoms or without depressive symptoms. Those with higher levels of depressive symptoms also reported significantly more engagement in risky substance use for disengagement coping (see Table 2 and Figure 2) than those with lower levels of depressive symptoms or without depressive symptoms.

Interestingly, those with higher levels of openness to experience reported a trend towards engagement in risky substance use for disengagement coping, which contrasted with the current study's hypotheses (see Table 2).

Table 1

General Risky Behavior for Disengagement Coping

Variable	Mean (SD)	B (SE)	sr ²
Constant		-.56 (.69)	
Depression	.95 (.56)	.69 (.21)***	.11
Openness	3.50 (.64)	.23 (.18)	.02

*p = .1

***p = .001

Table 2

Risky Substance Use for Disengagement Coping

Variable	Mean (SD)	B (SE)	sr ²
Constant		-1.85 (1.01)	
Depression	.91 (.51)	1.12 (.32)***	.22
Openness	3.58 (.63)	.44 (.27)*	.05

* p = .1

***p = .001

Table 3

General Risky Behavior for Sensation Seeking

Variable	Mean (SD)	B (SE)	sr ²
Constant		.40 (.68)	
Depression	.95 (.56)	-.14 (.21)	.005
Openness	3.50 (.64)	.28 (.18)	.03

Table 4

Risky Substance Use for Sensation Seeking

Variable	Mean (SD)	B (SE)	sr ²
Constant		.91 (.98)	
Depression	.91(.51)	-.16 (.31)	.007
Openness	3.58 (.63)	.22 (.25)	.02

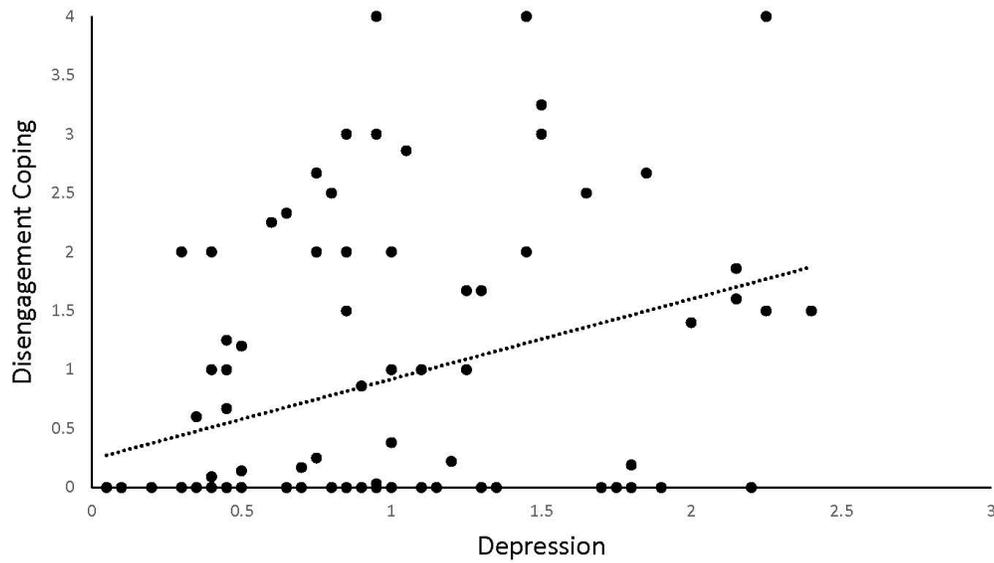


Figure 1. As depression scores go up, so do disengagement coping scores for general risky behavior.

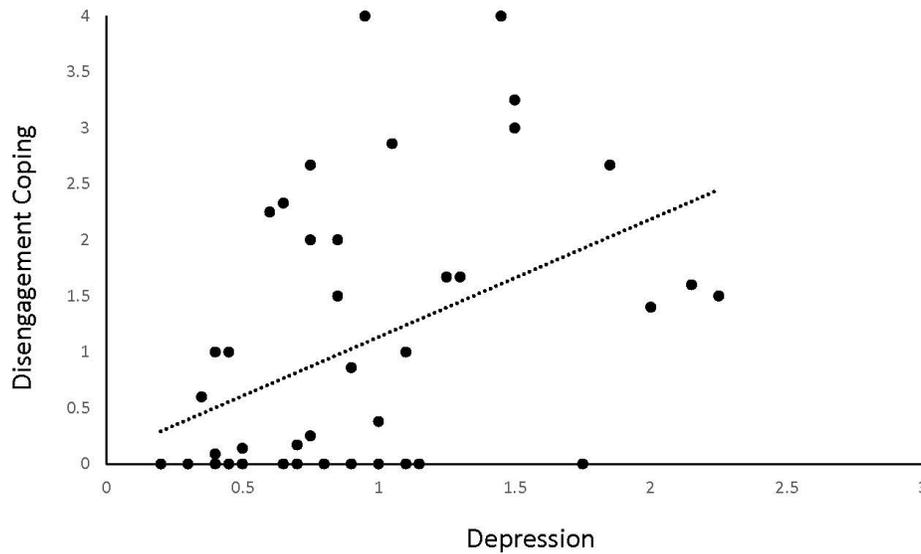


Figure 2. As depression scores go up, so do disengagement coping scores for risky substance use.

Sensation Seeking

An OLS multiple regression analysis measured whether those high in openness were more likely to engage in risk for sensation seeking than those low or without openness. However, those with openness did not report a significant amount of sensation seeking motivation for general risky behavior

(see Table 3) or for risky substance use (see Table 4).

Post Hoc

An additional post hoc bivariate correlation was run to investigate whether there was a relation between sensation seeking and disengagement coping. There

was a significant correlation found between sensation seeking and disengagement coping, $r(100,101) = .231, p = .02$, suggesting that individuals who identified engaging in risk for sensation seeking also identified engaging in risk for disengagement coping.

Discussion

As predicted, those with higher levels of depressive symptoms reported more engagement in both risky substance use and general risky behaviors for disengagement coping than those with lower levels of depressive symptoms. However, in contrast to prediction, those with higher levels of openness to experience trended to report engagement in risky substance use for disengagement coping rather than for sensation seeking. Interestingly, neither those with higher levels of openness to experience or higher levels of depressive symptoms reported engaging in statistically more risk than those with lower levels of openness or lower levels of depressive symptoms. Those with higher levels of openness to experience reported a trend towards engagement in risky substance use, which is consistent with the literature (Connor-Smith & Flachsbart, 2007; Paunonen, 2003). Post hoc, there was an interesting correlation between disengagement coping and sensation seeking responses, indicating that participants who reported one reason for engagement in risk (i.e., disengagement coping) likely also reported the other reason for engagement in risk (i.e., sensation seeking). This correlation suggests that individuals may be engaging in risk for both distraction and pleasure.

The correlation between sensation seeking and disengagement coping found in the present study adds to previous literature that found evidence of sensation seeking and negative affect present in those who engage in frequent risk engagement (Desrichard, & Denarie, 2005). In this way, negative affect

and depressive symptomology may lead an individual to engage in risk in order to distract themselves from their negative symptomology.

Limitations

While those with higher levels of depression and those with higher levels of openness to experience did not report significantly more engagement in risk than others, disengagement coping was significantly related as the motivation for engaging in both risky substance use and risky behaviors in general by those with higher levels of depression and higher levels of openness. By indicating that disengagement coping is motivation for engagement in risk, there is the implication that there was a risk taken for disengagement, despite the lack of significant engagement in risk reported. These interesting results may have been due to a social-desirability bias among the participants, such that they did not accurately relate the amount of risky behavior they engaged in due to fear of ostracization or judgement, despite the confidentiality of the study. Another reason for the lack of significant risk engagement related by the participants may be due to participants relating disengagement coping for risks taken prior to the past month. In this way, participants did not relate risks taken in the past month because there were none to report, but had instead engaged in risk previously for disengagement coping. Since the present study chose not to include questions that pertained to risk engagement over the lifespan, risk engagement numbers may have been related inaccurately. Thus, statistical significance was not achieved.

Another limitation to the study besides the utilization of self-reporting may be the nature of the sample. The participant pool at Shepherd University was used to gather participants, and one should always use caution when applying results from a

college sample to the general population. In example, the final number of participants analyzed consisted of 67.9% women. Not only is this number not representative of the population at large, but the amount of women in the study may have affected the results, as previous research suggests men engage in statistically more risk overall than women (Auerbach, Tsai, & Abela, 2010). Women are also more likely to engage in acts of self-mutilation, such as cutting (Goldstein, Flett, Wekerle, & Wall, 2009), which also may have affected the results.

Future Directions

It would benefit future studies to achieve a more balanced gender ratio, along with a wider age range of participants. The current literature on risky behavior engagement heavily favors a younger age demographic, so a study focusing on middle-aged and older populations would be an interesting avenue for future studies to take. Since there is limited research on non-adolescent engagement in risk, it would be interesting to see if older populations with depressive symptoms engage in risk for disengagement coping as significantly as the current study's results suggest.

Another interesting direction for future studies to take would be to utilize a longitudinal design to measure depression, risky behavior engagement, and disengagement coping in individuals. Since the current study indicates that those with depressive symptoms are more likely to engage in risk for disengagement coping, it would be interesting to monitor levels of depression in an individual and observe whether they correlate to engagement in risk. Previous research indicates that as feelings of well-being decrease, engagement in risky sexual behavior increase (Folkman, Chesney, Pollack & Phillips, 1992; Wilson, Stadler, Boone, & Bolger, 2014). Thus, with the results from the current study and previous research, it would be logical to measure

levels of depression, the amount of risky behavior engagement, and the reason for risky behavior engagement on a weekly or monthly basis. Utilizing a longitudinal design may also uncover whether there is a cyclical causality for engagement in risky behavior. Understanding emotion's role in risk taking can lead to a greater awareness of possible signs that an individual may be about to take a dangerous or unnecessary risk.

Due to the interesting results that indicate those with higher levels of openness trend to relate disengagement coping as motivation for risky substance use, it would be interesting to see if other personality traits correlate positively with disengagement coping and risky behavior engagement. These unexpected results pave the way for further investigation into the role substance use has in disengagement coping. Previous literature has indicated that both those high in openness and those high in sensation seeking engage in above average substance use (Paunonen, 2003; Zuckerman et al., 1972), and that those high in sensation seeking along with high levels of negative affectivity are more likely to engage in risks than others (Desrichard & Denarie, 2005). It is then possible that disengagement coping may be a prevalent coping method for those with high levels of sensation seeking. Due to the overlapping characteristics of sensation seeking and openness to experience, those high in openness, coupled with negative affectivity, may utilize risk taking and disengagement coping to deal with their negative emotions. Therefore, future studies should focus on the possible relation between openness, depression, and engagement in risk.

Finally, it would be remiss to overlook the correlation between sensation seeking and disengagement coping. It would be interesting to understand whether or not one reason for engagement in risk precedes another, or whether there is a simultaneous pursuit of sensation and disengagement by those engaging in risk. Alcohol, in particular,

may be used as a means of avoidance and stress relief (Deykin, Levy & Wells, 1987; Golding, Burnam, Benjamin & Wells, 1992). Therefore, the use of alcohol may enable disengagement while at the same time provide initial pleasant sensations. Hypothetically, an individual may seek to distract themselves from their current mood or situation by “numbing” their mind with substance, thus providing the desired disengagement. Once that same individual has numbed with their substance of choice, they may feel pleasure from the substance, and thus continue to use the substance to a dangerous degree in their pursuit of positive sensation. The same individual may then begin to associate the substance with both the mental distraction and positive sensation it provides, and then proceed to engage in a risky amount of substance use for the simultaneous “benefits”. Future research is needed to understand these relations further.

Conclusions

As the results from the present study indicate, those with depressive symptoms may choose to endanger themselves in order to deal with their emotions. While disengagement-style coping has its adaptive properties, when an individual consistently disengages to escape their present situation, it may inhibit emotional growth and harm may result. Through their pursuit of disengagement, these individuals may cause damage to their minds and/or bodies that vary in severity and duration. It is therefore important for those close to these individuals, such as family, friends, or clinicians, to notice when depressive symptoms increase. It is in those moments that a reminder of more adaptive ways of coping with emotions, such as problem-focused coping, may prevent unnecessary risk before it occurs, potentially saving individuals from irreversible harm.

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Appendix A

Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. Please select the option that indicates the extent to which you agree or disagree with that statement.

1. I am someone who is talkative. (talkative)
2. I am someone who tends to find fault with others. (finds fault)
3. I am someone who does a thorough job. (thorough job)
4. I am someone who is depressed, blue. (blue)
5. I am someone who is original, comes up with new ideas. (original)
6. I am someone who is reserved. (reserved)
7. I am someone who is helpful and unselfish with others. (helpful)
8. I am someone who can be somewhat careless. (careless)
9. I am someone who is relaxed, handles stress well. (relaxed)
10. I am someone who is curious about many different things. (curious)
11. I am someone who is full of energy. (energy)
12. I am someone who starts quarrels with others. (quarrels)
13. I am someone who is a reliable worker. (reliable worker)
14. I am someone who can be tense. (tense)
15. I am someone who is ingenious, a deep thinker. (ingenious)
16. I am someone who generates a lot of enthusiasm. (enthusiasm)
17. I am someone who has a forgiving nature. (forgiving)
18. I am someone who tends to be disorganized. (disorganized)
19. I am someone who worries a lot. (worries)
20. I am someone who has an active imagination. (imagination)
21. I am someone who tends to be quiet. (quiet)
22. I am someone who is generally trusting. (trusting)
23. I am someone who tends to be lazy. (lazy)
24. I am someone who is emotionally stable, not easily upset. (stable)
25. I am someone who is inventive. (inventive)
26. I am someone who has an assertive personality. (assertive)
27. I am someone who can be cold and aloof. (aloof)
28. I am someone who perseveres until the task is finished. (perseverance)
29. I am someone who can be moody. (moody)
30. I am someone who values artistic, aesthetic experiences. (artistic)
31. I am someone who is sometimes shy, inhibited. (shy)
32. I am someone who is considerate and kind to almost everyone. (considerate)
33. I am someone who does things efficiently. (efficient)
34. I am someone who remains calm in tense situations. (calm)
35. I am someone who prefers work that is routine. (routine)
36. I am someone who is outgoing, sociable. (outgoing)
37. I am someone who is sometimes rude to others. (rude)
38. I am someone who makes plans and follows through with them. (planner)
39. I am someone who gets nervous easily. (nervous)
40. I am someone who likes to reflect, play with ideas. (reflect)
41. I am someone who has few artistic interests. (few artistic)
42. I am someone who likes to cooperate with others. (cooperative)

- 43. I am someone who is easily distracted. (easily distract)
- 44. I am someone who is sophisticated in art, music, or literature. (sophisticated)

Scoring Instructions

To score the BFI, you'll first need to **reverse-score** all negatively-keyed items:

Extraversion: 6, 21, 31
Agreeableness: 2, 12, 27, 37
Conscientiousness: 8, 18, 23, 43
Neuroticism: 9, 24, 34
Openness: 35, 41

To recode these items, you should subtract your score for all reverse-scored items from 6. For example, if you gave yourself a 5, compute 6 minus 5 and your recoded score is 1. That is, a score of 1 becomes 5, 2 becomes 4, 3 remains 3, 4 becomes 2, and 5 becomes 1.

Next, you will create scale scores by **averaging** the following items for each B5 domain (where R indicates using the reverse-scored item).

Extraversion: 1, 6R 11, 16, 21R, 26, 31R, 36
Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42
Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R
Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39
Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44

Appendix B

The CES-D

Below is a list of the ways you might have felt or behaved. Please select the option that indicates how often have you have felt this way during the past week.

1. I was bothered by things that usually don't bother me. (bothered)
2. I did not like eating; my appetite was poor. (poor appetite)
3. I felt that I could not shake off the blues even with the help of my family or friends. (shake blues)
4. I felt I was just as good as other people. (just as good)
5. I had trouble keeping my mind on what I was doing. (trouble)
6. I felt depressed. (felt depressed)
7. I felt that everything that I did was an effort. (effortful)
8. I felt hopeful about the future. (hopeful)
9. I thought my life had been a failure. (failure)
10. I felt fearful. (fearful)
11. My sleep was restless. (restless sleep)
12. I was happy. (happy)
13. I talked less than usual. (talked less)
14. I felt lonely. (lonely)
15. People were unfriendly. (unfriendly ppl.)
16. I enjoyed life. (enjoyed life)
17. I had crying spells. (crying)
18. I felt sad. (sad)
19. I felt that people dislike me. (dislike)
20. I could not get "going". (get going)

Appendix C

Risky, Impulsive, and Self-Destructive Behavior Questionnaire

Below are questions addressing behaviors you may or may not have done. For questions asking the frequency of a behavior, please enter one number, even if it is your best guess. Please do not put in a range, but enter a single number. If you have not done the behavior, please enter "0".

1. How many times have you shoplifted in the past month? (If you have not done the behavior, please enter 0)... (shoplift A)
2. I shoplifted to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior, please check the box to indicate that you do not want to provide an answer.) (shoplift B)
3. I shoplifted to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the behavior, please check the box to indicate that you do not want to provide an answer) (shoplift C)
4. How many times have you drove 30mph or faster over the speed limit in the past month? (If you have not done the behavior, please enter 0)... (speeding A)
5. I drove 30mph or faster over the speed limit to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior, please check the box to indicate that you do not want to provide an answer)... (speeding B)
6. I drove 30mph or faster over the speed limit to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the behavior, please check the box to indicate that you do not want to provide an answer)... (speeding C)
7. How many times have you bet on sports, horses, or other animals in the past month? (If you have not ... (betting A)
8. I bet on sports, horses, or other animals to stop feeling upset, distressed, or overwhelmed. (If you...(betting B)
9. I bet on sports, horses, or other animals to feel excitement, to get a thrill, or to feel pleasure. ... (betting C)
10. How many times have you used cocaine or crack in the past month? (If you have not done the behavior,... (coke A)
11. I used cocaine or crack to stop feeling upset, distressed, or overwhelmed. (If you have not done the... (coke B)
12. I used cocaine or crack to feel excitement, to get a thrill, or to feel pleasure. (If you have not d... (coke C)
13. How many times have you bought drugs in the past month? (If you have not done the behavior, please e... (bought drugs A)
14. I bought drugs to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior... (bought drugs B)
15. I bought drugs to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the b... (bought drugs C)
16. How many times have you had unprotected sex with someone you just met or didn't know well in the pas... (stranger sex A)
17. I had unprotected sex with someone I just met or didn't know well to stop feeling upset, distressed, ... (stranger sex B)
18. I had unprotected sex with someone I just met or didn't know well to feel

- excitement, to get a thrill... (stranger sex C)
19. How many times have you gotten into a physical fight in the past month? (If you have not done the be... (fighting A)
 20. I got into a physical fight to stop feeling upset, distressed, or overwhelmed. (If you have not done... (fighting B)
 21. I got into a physical fight to feel excitement, to get a thrill, or to feel pleasure. (If you have n... (fighting C)
 22. How many times have you thought about killing yourself in the past month? (If you have not done the ... (killing self A)
 23. I thought about killing myself to stop feeling upset, distressed, or overwhelmed. (If you have not d... (killing self B)
 24. I thought about killing myself to to feel excitement, to get a thrill, or to feel pleasure. (If you ... (killing self C)
 25. How many times have you had sex for money or drugs in the past month? (If you have not done the beha... (sex for money A)
 26. I had sex for money or drugs to stop feeling upset, distressed, or overwhelmed. (If you have not don... (sex for money B)
 27. I had sex for money or drugs to feel excitement, to get a thrill, or to feel pleasure. (If you have ... (sex for money C)
 28. How many times have you drank alcohol until you blacked or passed out in the past month? (If you hav... (black out A)
 29. I drank alcohol until I blacked or passed out to stop feeling upset, distressed, or overwhelmed. (If... (black out B)
 30. I drank alcohol until I blacked or passed out to feel excitement, to get a thrill, or to feel pleasu... (black out C)
 31. How many times have you used hallucinogens, LSD, or mushrooms in the past month? (If you have not do... (hallucinogens A)
 32. I used hallucinogens, LSD, or mushrooms to stop feeling upset, distressed, or overwhelmed. (If you h... (hallucinogens B)
 33. I used hallucinogens, LSD, or mushrooms to feel excitement, to get a thrill, or to feel pleasure. (I... (hallucinogens C)
 34. How many times have you gone to work intoxicated or high in the past month? (If you have not done th... (work drunk A)
 35. I have gone to work intoxicated or high to stop feeling upset, distressed, or overwhelmed. (If you h... (work drunk B)
 36. I have gone to work intoxicated or high to feel excitement, to get a thrill, or to feel pleasure. (I... (work drunk C)
 37. How many times have you attacked someone with a weapon, such as a knife or gun, in the past month? (... (weapon A)
 38. I attacked someone with a weapon, such as a knife or gun, to stop feeling upset, distressed, or over... (weapon B)
 39. I attacked someone with a weapon, such as a knife or gun, to feel excitement, to get a thrill, or to... (weapon C)
 40. How many times have you cut, burned, or hurt yourself on purpose without trying to die in the past m... (cut self A)
 41. I cut, burned, or hurt myself on purpose without trying to die to stop feeling upset, distressed, or... (cut self B)
 42. I cut, burned, or hurt myself on purpose without trying to die to feel excitement, to get a thrill, ... (cut self C)

43. How many times have you lost more money than you could afford gambling in the past month? (If you ha... (gambling A)
44. I lost more money than I could afford gambling to stop feeling upset, distressed, or overwhelmed. (I... (gambling B)
45. I lost more money than I could afford gambling to feel excitement, to get a thrill, or to feel pleas... (gambling C)
46. How many times have you threatened to physically hurt someone in the past month? (If you have not do... (threat A)
47. I threatened to physically hurt someone to stop feeling upset, distressed, or overwhelmed. (If you h... (threat B)
48. I threatened to physically hurt someone to feel excitement, to get a thrill, or to feel pleasure. (I... (threat C)
49. How many times have you used heroin in the past month? (If you have not done the behavior, please en... (heroin A)
50. I used heroin to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior,... (heroin B)
51. I used heroin to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the be... (heroin C)
52. How many times have you destroyed or vandalized property in the past month? (If you have not done th... (vandal A)
53. I destroyed or vandalized property to stop feeling upset, distressed, or overwhelmed. (If you have n... (vandal B)
54. I destroyed or vandalized property to feel excitement, to get a thrill, or to feel pleasure. (If you... (vandal C)
55. How many times have you drunk 5 or more alcoholic drinks in 3 hours or less in the past month? (If y... (binge A)
56. I drank 5 or more alcoholic drinks in 3 hours or less to stop feeling upset, distressed, or overwhel... (binge B)
57. I drank 5 or more alcoholic drinks in 3 hours or less to feel excitement, to get a thrill, or to fee... (binge C)
58. How many times have you paid for sex in the past month? (If you have not done the behavior, please e... (paid sex A)
59. I paid for sex to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior... (paid sex B)
60. I paid for sex to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the b... (paid sex C)
61. How many times have you sold drugs in the past month? (If you have not done the behavior, please ent... (sold drugs A)
62. I sold drugs to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior, ... (sold drugs B)
63. I sold drugs to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the beh... (sold drugs C)
64. How many times have you robbed someone in the past month? (If you have not done the behavior, please... (robbed A)
65. I robbed someone to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavi... (robbed B)
66. I robbed someone to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the... (robbed C)
67. How many times have you tried to kill yourself in the past month? (If you have not done the behavior... (suicide A)

68. I tried to kill myself to stop feeling upset, distressed, or overwhelmed. (If you have not done the ... (suicide B)
69. I tried to kill myself to feel excitement, to get a thrill, or to feel pleasure. (If you have not do... (suicide C)
70. How many times have you used marijuana in the past month? (If you have not done the behavior, please... (mj A)
71. I used marijuana to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavi... (mj B)
72. I used marijuana to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the... (mj C)
73. How many times have you been in 2 or more sexual relationships at the same time in the past month? (... (two or more A)
74. I have been in 2 or more sexual relationships at the same time to stop feeling upset, distressed, or... (two or more B)
75. I have been in 2 or more sexual relationships at the same time to feel excitement, to get a thrill, ... (two or more C)
76. How many times have you abused multiple drugs at once in the past month? (If you have not done the b... (abuse drug A)
77. I abused multiple drugs at once to stop feeling upset, distressed, or overwhelmed. (If you have not ... (abuse drug B)
78. I abused multiple drugs at once to feel excitement, to get a thrill, or to feel pleasure. (If you ha... (abuse drug C)
79. How many times have you played lotteries, card games for money, or went to the casino in the past mo... (casino A)
80. I played lotteries, card games for money, or went to the casino to stop feeling upset, distressed, o... (casino B)
81. I played lotteries, card games for money, or went to the casino to feel excitement, to get a thrill,... (casino C)
82. How many times have you gambled illegally (not part of a legal business, using a bookie) in the past... (illegal A)
83. I gambled illegally (not part of a legal business, using a bookie) to stop feeling upset, distressed... (illegal B)
84. I gambled illegally (not part of a legal business, using a bookie) to feel excitement, to get a thri... (illegal C)
85. How many times have you abused prescription medication in the past month? (If you have not done the ... (Rx A)
86. I abused prescription medication to stop feeling upset, distressed, or overwhelmed. (If you have not... (Rx B)
87. I abused prescription medication to feel excitement, to get a thrill, or to feel pleasure. (If you h... (Rx C)
88. How many times have you had a plan to kill yourself in the past month? (If you have not done the beh... (plan A)
89. I planned to kill myself to stop feeling upset, distressed, or overwhelmed. (If you have not done th... (plan B)
90. I planned to kill myself to feel excitement, to get a thrill, or to feel pleasure. (If you have not ... (plan C)
91. How many times have you ran red lights or ignored stop signs in the past month? (If you have not don... (ran light A)
92. I ran red lights or ignored stop signs to stop feeling upset, distressed, or overwhelmed. (If you ha... (ran light B)
93. I ran red lights or ignored stop signs to feel excitement, to get a thrill, or to feel pleasure. (If... (ran light C)

94. How many times have you stole money in the past month? (If you have not done the behavior, please en... (stole money A)
95. I stole money to stop feeling upset, distressed, or overwhelmed. (If you have not done the behavior,... (stole money B)
96. I stole money to feel excitement, to get a thrill, or to feel pleasure. (If you have not done the be... (stole money C)

RISQ Scoring for behaviors (lifetime, last month), age of onset (mean), perceived consequences (mean), & affective triggers (mean approach/mean avoidance)

Total Score: all items

Drug Behaviors: 4, 5, 12, 20, 24, 27, 31, 34

Aggression: 8, 14, 15, 18, 19,

Gambling: 3, 17, 32, 33

Risky Sexual Behavior: 7, 10, 23, 29

Heavy Alcohol Use: 11, 22,

Self-Harm: 9, 16, 26, 36,

Impulsive Eating: 28, 35

Reckless Behaviors: 2, 6, 30, 37

Considerations: To reduce skewness in the frequency of behaviors, create bins of 0, 1-10, 11-50, 51-100, >100