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Evaluation of a Brief “Surf the Urge” Intervention

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EVALUATION OF A BRIEF “SURF THE URGE” INTERVENTION

By

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ABSTRACT

Evaluating a Brief “Surf the Urge” Intervention

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Previous research has demonstrated that mindfulness interventions can assist in increasing an individual’s wellbeing. This includes improving an individual’s mental health and decreasing urge-related behaviors (e.g., substance use, deliberate self-harm, aggression). Nevertheless, there is limited research on the efficaciousness of mindfulness interventions with adolescents. These interventions are also time consuming and expensive. The purpose of this study is to examine the effectiveness of a brief (i.e., 10 to 20 minutes) mindfulness intervention to assist adolescents in reducing their urge-related behaviors. I hypothesized that the brief intervention would reduce participants’ urge-related behaviors but not urge feelings. The intervention was also predicted to improve their mental health and reduce their impulsivity. A mixed-model design was used to assess these hypotheses. Participants received the “Surf the Urge” intervention at either 2- or 4-weeks during a 6-week assessment period. The following measures were administered: the Five Facet Mindfulness Questionnaire; Multidimensional Personality Questionnaire-Brief Form; National Adult Reading Test-Revised, Domain Specific Risk Taking Scale; UPPS-P Impulsive Behavioral Scale; Depression, Anxiety, and Stress Scale-21; Urges for Urge-Related Behavior Questionnaire; and Urge-Related Behavior Engagement Questionnaire. Participants included young adults ($N = 35$) from a University Mental Health Clinic, as well as psychology courses. Findings demonstrated that the main hypothesis was supported, as the Surf the Urge intervention reduced urge-related behaviors, but not urges. No additional findings were significant (e.g., Surf the Urge intervention did not improve

mindfulness skills). This study contributes to existing empirical evidence assessing the effectiveness of mindfulness interventions to reduce adolescence's risky behaviors.

Keywords: urges, risk behaviors, adolescents, therapy intervention, mindfulness

TABLE OF CONTENTS

Abstract	iii
List of Tables	vii
List of Figures	viii
Chapter 1: Background	1
Urges and Urge-Related Behavior	1
Interventions to Reduce Urge-Related Behavior	2
Purpose of the Present Study	5
Chapter 2: Literature Review	8
Urges: Definition and Discrepancy from Craving	8
Urges Influence on Behavior	11
First-Wave Interventions for Urge-Related Behaviors	22
Second-wave Interventions to Reduce Urge-Related Behavior	25
Third-wave Interventions to Reduce Urge-Related Behaviors	29
Surf the Urge Intervention	43
Consumer Satisfaction of Clinical Interventions	45
Chapter 3: Methodology	48
Participants	48
Measures	50
Procedure	59
Statistical Plan	63
Chapter 4: Results	66
Hypotheses	68
Confirmatory Descriptive Hypothesis 1	68
Exploratory Descriptive Trend Analyses to Clarify Hypothesis 1	69
Confirmatory Mechanistic Hypotheses 2-4	72
Adherence to Protocol: Hypothesis 5	74
Descriptive Data about Specific Urges	76
Chapter 5: Discussion, Conclusions, And Recommendations	80
Discussion of Results	80
Clinical Implications	90
Limitations	93
Recommendations for Future Research	98

Appendix I.....	101
Appendix II.....	102
Appendix III.....	104
Appendix IV.....	115
Appendix V.....	133
References.....	142
Curriculum Vitae.....	174

List of Tables

Table 1 <i>Demographic Characteristics of Participants</i>	133
Table 2 <i>Overview of Measures</i>	134
Table 3 <i>Descriptive Statistics</i>	135
Table 4 <i>Comparisons of Two and Four Week Intervention Groups on Study Variables</i>	136
Table 5 <i>Descriptive Statistics of Two and Four Week Intervention Groups on Demographic and Urge-Related Variables</i>	137
Table 6 <i>Descriptive Statistics of Two and Four Week Intervention Groups on Participant Characteristic Variables</i>	138
Table 7 <i>Frequency of Protocol Steps Missed per Participant, as Rated During Intervention</i>	139
Table 8 <i>Frequency of Protocol Steps Missed per Participant, as Rated During Video Review</i>	140
Table 9 <i>Frequency of Individual Urge-Related Behavior within Two Week Intervention Group</i>	141
Table 10 <i>Frequency of Individual Urge-Related Behavior within Four Week Intervention Group</i>	141

List of Figures

<i>Figure 1.</i> Mean Urge-Related Behavior Frequency Scores by Intervention Group.....	70
<i>Figure 2.</i> Mean Urges for Urge-Related Behavior Intensity Scores by Intervention Group.....	71
<i>Figure 3.</i> Mean Frequency of Urge-Related Behavior Scores by Type of Urge-Related Behaviors.....	77
<i>Figure 4.</i> Two Week Intervention Group. Mean Frequency of Urge-Related Behavior Scores by Type of Urge-Related Behaviors.....	78
<i>Figure 5.</i> Four Week Intervention Group. Mean Frequency of Urge-Related Behavior Scores by Type of Urge-Related Behaviors.....	79

CHAPTER 1

BACKGROUND

Urges and Urge-Related Behavior

Adolescents are at a significant risk to engage in risky, negative behaviors. For example, in 2013 high school students commonly reported drinking alcohol (reported by 62%), smoking cigarettes (41%), using marijuana (41%), being involved in a physical fight (25%), and using illicit drugs (6%). Additionally, 91% described engaging in risky sexual behavior (e.g., not using a condom, not taking measures to reduce risk of pregnancy; Centers for Disease Control and Prevention, n.d.). Approximately 15% endorsed engaging in deliberate self-harm (Muehlenkamp, Claes, Havertape, & Plener, 2012) and ten out of 100,000 adolescents completed suicide in 2013 (American Foundation for Suicide Prevention, n.d.). Many of these behaviors result in significant, negative consequences (e.g., sexually transmitted infections, driving while intoxicated, teen pregnancy, death; Ginzler, Garrett, Baer, & Peterson, 2007); therefore, it is important to assess factors that promote adolescents to engage in these behaviors and how to reduce them.

Urges play a significant role in the occurrence of risky behaviors (i.e., urge-related behaviors; Park et al., 2015). Urges are the subjective experience of an intention to engage in an urge-related behavior (Marlatt & Donovan, 2005). Urges are associated with impulses that are intense and arduous to control (Sussman & Sussman, 2011). The environment can cue urges; for example, the sight of paraphernalia cues substance use or holding a razor cues deliberate self-harm (American Psychiatric Association, 2013; Kozlowski, Mann, Wilkinson, & Poulos, 1989; Tiffany, 1990). Urges lead to greater urge-related behavior engagement because urges are conditioned; engaging in urge-related behaviors after an urge reinforces that behavior, either

positively or negatively, by the relief of discomfort, pleasurable intoxication, reduced emotional reactivity, or so on.

The etiology of numerous behaviors are linked to urges, including substance use, problem eating, and gambling (Park et al., 2015; Steiger, Lehoux, & Gauvin, 1999; Tiffany & Wray, 2012). For example, increased urges are more prevalent in individuals who are addicted to a substance compared to individuals who use substances at a moderate rate (Streeter et al., 2002); urges also become greater as an individual continues to use a substance (King, Epstein, Conrad, McNamara, & Cao, 2008). Additionally, individuals with problem eating behavior reported experiencing more urges to restrict their food intake or binge than those individuals without problem eating behaviors (Bruce et al., 2011). Overall, urges account for approximately 16% of the variance in predicting urge-related behaviors (Tiffany, 1990).

Urges, as well as their related behavior, correspond to some individual characteristics. Greater urges, and engagement in urge-related behaviors, relate to negative and positive affect (Delfino, Jamner, & Whalen, 2001; Tiffany, 1990). Additionally, individuals who score higher on measures of impulsivity endorse more urges and engagement in urge-related behavior (Brown, Manuck, Flory, & Hariri, 2006).

Interventions to Reduce Urge-Related Behavior

Various intervention strategies have focused on reducing urge-related behaviors because these behaviors often produce negative consequences (e.g., Ginzler et al., 2007; Meczekalski, Podfigurna-Stopa, & Katuski, 2013). Specifically, behavioral interventions effectively reduce urge-related behaviors in both adults and adolescents. More specifically, Cognitive Behavior Therapy (CBT) reduces substance use, aggressive behavior, and deliberate self-harm in adolescents (Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008; Slee, Garnefski, van der

Leeden, Arensman, & Spinhove, 2008; Smeets et al., 2015). Contingency management (i.e., reinforcement for engagement in desired behaviors and absence of maladaptive behaviors) and cue exposure (i.e., successive exposure to cues of an urge-related behavior) reduce smoking behavior and alcohol use (Kavanagh, Andrade, & May, 2004; Krishnan-Sarin et al., 2006). Furthermore, the Adolescent Community Reinforcement Approach (ACRA) utilizes behavioral strategies (e.g., contingency management, environmental changes) with significant other influences (e.g., promoting prosocial behaviors, conducting sessions with only caregivers) to change behavior. Overall, ACRA reduced substance use in adolescents more than CBT (Dennis et al., 2004).

Similarly, interventions with both a mindfulness and cognitive component reduce urge-related behaviors. Interventions focusing on acceptance and awareness, such as Acceptance and Commitment Therapy (ACT) or Dialectal Behavior Therapy (DBT), reduce problem-eating behavior, risky sexual behavior, aggression or oppositional behavior, deliberate self-harm, and trichotillomania in adolescents and adults (Keuthen & Sprich, 2011; Zack, Saekow, Kelly, & Radke, 2014). Motivational Intervening, which includes increasing an individual's awareness about the effects of urge-related behaviors, reduces alcohol and marijuana use, mood symptoms, and deliberate self-harm behavior in adults (Dietz & Dunn, 2014; Kress & Hoffman, 2008; Pedrelli, Borsari, Palm, Dalton, & Fava, 2013). Overall, effect sizes range from small to large when utilizing these treatments (Dennis et al., 2004; Liddle et al., 2008; Slee et al., 2008; Smeets et al., 2015; Waldron & Kaminer, 2004)

Due to the effectiveness of interventions with a mindfulness component for reducing urge-related behaviors, some psychologists have begun to utilize treatment approaches that contain a mindfulness factor. Increasing acceptance of feelings or urges reduces urge-related

behaviors such as substance use (Black, 2012; Litvin, Kovacs, Hayes, & Brandon, 2012; Ostafin & Marlatt, 2008) and problematic eating (Courbasson, Nishikawa, & Shaprir, 2011). More specific mindfulness based interventions, such as Mindfulness Based Relapse Prevention, Mindfulness Based Stress Reduction, and Vipassana Meditation, improve mental health symptoms (Biegel, Brown, Shapiro, & Schubert, 2009; Witkiewitz, Bowen, Doughlas, & Hsu, 2013; Zgierska et al., 2008) and reduce engagement in, and consequences from, substance use (Bootzin & Stevens, 2005; Bowen et al., 2006; Witkiewitz, Marlatt, & Walker, 2005).

These various interventions have demonstrated effectiveness with certain urge-related behaviors; however, no intervention has been shown to be effective at generalizing to several urge-related behaviors (e.g., aggression, problem eating behaviors, deliberate self-harm). Furthermore, these interventions typically require weeks or months to implement (e.g., Brief CBT consists of four to eight sessions), therefore, they cost significant time and money. Additionally, increased time to produce effects may lead to a continuance in individuals suffering from the negative consequences of their behavior. Nevertheless, how brief an intervention can be while continuing to remain effective is unknown; therefore, assessing a brief intervention for its ability to reduce urge-related behaviors is essential. Implementing briefer mindfulness-based interventions with lengthier interventions (e.g., CBT) can assist in producing more generalized effects or reducing other problems (e.g., mental health symptoms).

To address these concerns, Marlatt and Donovan (2005) developed the brief “Surf the Urge” intervention to assist in reducing time and money when intervening on urge-related behavior. The name refers to the premise of the intervention teaching individuals to “ride the wave” of an urge that will pass on its own even if one does not behaviorally respond to the urge. This intervention focuses on reducing urge-related behavior by teaching mindfulness and

acceptance strategies of urges in approximately 20 minutes; the intervention is not intended to reduce the urge itself and instead teaches that urges can occur without behavioral reactions. Despite the appeal of its brevity, researchers have only utilized, and found it effective, with adult smokers (Bowen & Marlatt, 2009); thus, examining its effectiveness on a broader scale is necessary.

Purpose of the Present Study

Empirical research has not specifically examined the effectiveness of the Surf the Urge intervention with an adolescent and young adult sample. Additionally, the value of this intervention with urge-related behaviors besides smoking (e.g., substance use, deliberate self-harm) is unclear. The current study examined the efficacy of the Surf the Urge intervention in a sample of 14 to 24-year-olds who engaged in a diverse array of urge-related behaviors. To aid participants in reducing their urge-related behavior, and coping with urges, the investigators cued urges during the intervention by utilizing a cue exposure script. Urge-related behaviors examined included alcohol use, drug use, tobacco use, deliberate self-harm, and self-induced vomiting (See Appendix II for complete list). Additionally, only participants who experienced urges or engaged in the urge-related behavior a minimum of one time per week were included. If participants reported engaging in several urge-related behaviors, or experiencing varying urges, throughout a one-week period, they were prompted to report the urge engaged in, or experienced, more frequently.

Additionally, the duration of the study consisted of a 6-week time-period, with the intervention occurring at either 2- or 4-weeks, creating a mixed-design model. This model required fewer participants and allowed the evaluation of individual differences related to intervention effectiveness. Additionally, this enabled the comparison of whether participants

who were provided with the intervention at 2-weeks, compared to 4-weeks, were able to reduce their urge-related behaviors earlier. I hypothesized that:

- 1) The Surf the Urge mindfulness intervention will decrease various urge-related behaviors (e.g., substance use, deliberate self-harm); however, this intervention will not directly affect a participant's self-reported urge levels. Furthermore, individuals in the 2- week intervention group will reduce their urge-related behaviors sooner than those in the 4-week intervention group.
- 2) Participants who score higher on a self-report mindfulness questionnaire (Five Facet Mindfulness Questionnaire) will show greater reductions in their urge-related behaviors (e.g., substance use, deliberate self-harm).
- 3) Participants who demonstrate the greatest change from their pre- to post- assessment mindfulness self-report scores (Five Facet Mindfulness Questionnaire) will show the greatest changes in urge-related behaviors. They will also rate the Surf the Urge intervention as more satisfying (Client Satisfaction Questionnaire-8).
- 4) Participants who rate the Surf the Urge intervention as more satisfying (Client Satisfaction Questionnaire-8) will demonstrate a greater reduction in their urge-related behaviors.
- 5) There will be a 95% adherence rate to both the cue exposure and Surf the Urge protocols demonstrating proper implementation. When assessing intervention integrity, there will be no difference in adherence between trained therapists and myself.

This study provided information on the effectiveness of a brief mindfulness intervention to reduce various urge-related behaviors in a high-risk population (i.e., adolescents). It also provided additional information on a growingly popular intervention technique in a newly

studied population and with newly examined problem behaviors. The results also lead to further information on the effectiveness of mindfulness interventions with adolescents and has implications for future treatment modalities. Additionally, it provides information on the characteristics of individuals who may be more responsive to briefer urge-behavior reduction interventions.

CHAPTER 2

LITERATURE REVIEW

Numerous mental health problems can be linked to urge-related behaviors, including substance use, deliberate self-harm, and binge eating. Additionally, consequences of these behaviors can include jail time, physical health problems (e.g., infections, malnutrition), and death. Therefore, it is important to determine how to reduce the likelihood that individuals will engage in urge-related behaviors in the most efficacious way. Previously researchers have examined the efficacy of several evidence-based treatments, including Cognitive Behavioral Therapy, Dialectical Behavior Therapy, and Motivational Interviewing to reduce specific urge-related behaviors (e.g., Dietz & Dunn, 2014; Kress & Hoffman, 2008; Pedrelli et al., 2013). Nevertheless, research has not shown whether these treatments are effective with adolescents who engage in a broad array of urge-related behaviors. Furthermore, these treatments typically take numerous sessions, thereby creating greater cost and higher dropout rates. The present study will examine the effectiveness of a brief mindfulness intervention to reduce numerous urge-related behaviors in a sample of adolescents and young adults.

Urges: Definition and Discrepancy from Craving

Although researchers have examined urges' and cravings' influence on various urge-related behaviors, they do not agree upon unified operational definitions of this concept or concepts (Sussman & Sussman, 2011). Specifically, some researchers distinguish cravings and urges as separate but related concepts (e.g., urge is motivated by a craving; Tiffany, 1990) while others use the terms synonymously (Anton, 1999; Ussher, Beard, Abikoye, Hajek, & West, 2013; Wurmser, 1974).

When researchers define urges as a unique phenomenon, separate from cravings, urges are the individual's intent or impulse to engage in a specific action (Witkiewitz et al., 2005). These changes in behaviors can include overt actions, verbal behaviors, and physiological responses to cues for the urge-related behavior. Tiffany (1990) proposes that urges are learned, physiological arousal responses conditioned through experiences of receiving reinforcement for an urge-related behavior (e.g., substance use is reinforced by the resulting high which motivates more substance use, deliberate self-harm is reinforced by reduced emotional reactivity which motivates subsequent self-harm). Conditioning of urges occurs in response to both internal (e.g., high emotional arousal) and external (e.g., substance use paraphernalia; Anton, 1999; Marks, 1990; Sussman & Sussman, 2011) cues. These learned responses are subjective feelings, unique to the individual experiencing them (Tiffany, 1990).

Alternatively, urges are also intentions, or an impulse, to engage in urge-related behavior (Kozlowski et al., 1989; Marlatt & Donovan, 2005). This impulse is intense and difficult to control (Sussman & Sussman, 2011). It is possible, therefore, that the subjective experience of an urge leads to desires to engage in a behavior, and engagement in the behavior depends on the strength of the impulse (Anton, 1999). Furthermore, it may be necessary for other stimuli (e.g., cues for urge-related behavior, memory of reinforcement from urge-related behavior) to be present for an individual to engage in urge-related behavior (Tiffany, 1990). Therefore, if the strength of the impulse, and consequently the urges, are mild it is likely that the individual may not focus on these other variables and engagement in the urge-related behavior will not occur.

Conversely, some researchers report that urges motivate, or encompass, cravings. Cravings are psychological, subjective, experiences that include urges (Kozlowski et al., 1989; Marlatt & Donovan, 2005; Witkiewitz et al., 2005). Other researchers describe cravings (i.e.,

powerful, urgent, or atypical desire) as physiological urges to engage in a specific behavior (Brewer et al., 2011; Brewer, Elwafi, & Davis, 2014). Overall, these researchers appear to argue that cravings involve a physiological response that leads to a subjective experience of an urge. Cravings also motivate urges (Tiffany, 1990); therefore, demonstrating that cravings can stimulate urges. Although these researchers disagree about which construct is primary (e.g., cravings encompass urges), they agree that cravings and urges are related within the same psychological phenomenon.

The American Psychiatric Association (2013) does not distinguish urges from cravings either. For example, the DSM-5 (American Psychological Association, 2013) defines a craving within the diagnostic criterion for substance use disorders as a strong desire or urge for a substance that can happen at any period and is likely cued by the environment. Furthermore, the DSM-5 argues that a person learns to experience cravings through classical conditioning, which aligns with Tiffany's (1990) conceptualization of urges. Consequently, one of the most influential diagnostic systems for urge-related behaviors view urges and cravings interchangeably.

In summary, researchers either define urges as separate from but related to cravings (Kozlowski et al., 1989; Marlatt & Donovan, 2005; Sussman & Sussman, 2011) or as interchangeable with cravings (Anton, 1999; Streeter, et al., 2002; Ussher, 2013; Wurmser, 1974). However, researchers agree that a person learns to experience urges via classical conditioning (American Psychological Association, 2013; Marks, 1990). Researchers also agree that urges are subjective experiences that occur when cues for the urge-related behavior occur (Kozlowski et al., 1989; Marlatt & Donovan, 2005). Urges are also intense and lead to thoughts of intent or impulse to engage in an urge-related behavior (Sussman & Sussman, 2011;

Witkiewitz et al., 2005). Therefore, urges are likely to change various actions, including overt behaviors, verbal actions, and physiological responses (Tiffany, 1990).

Urges Influence on Behavior

Urges influence many types of behavior. One behavior that is highly related to urges is substance use. The relationship between urges and substance use is bi-directional and begins with conditioning; substance use causes a pleasurable sensation, which motivates the user to desire more of the substance (Drobes, Meirer, & Tiffany, 1994; Streeter et al., 2002). Urge ratings are higher in individuals addicted to a substance than individuals who use a substance moderately (Streeter et al., 2002) and urges become greater as an individual increases his or her use of a substance (King et al., 2008; Streeter et al., 2002). Repeated substance use strengthens the urge for the substance as conditioning continues; substance use provides negative reinforcement of urges because uses substances reduces urge feelings. A cyclical pattern ensues in which more substance use contributes to more urges, which results in more substance use and so on (Streeter et al., 2002).

Urges influence on behavior depends on available coping strategies. For example, how individuals coped with urges predicted days to relapse in adult cigarette smokers who completed a two-week cessation program; confidence in coping with urges and length of viewing smoking cues without smoking were other predictors (Drobes et al., 1994). Consequently, individuals who have learned positive coping mechanisms are less likely to engage in urge-related behaviors. Coping mechanism are relevant over a long period of time because urges persist long after an individual has stopped using substances (Hasin et al., 2013); therefore, adaptive coping mechanisms help prevent relapse.

Urges for substance use relate to an individual's thought patterns. For example, Modell, Glaser, Cyr, and Mountz (1992) found alcoholics have repetitive thoughts to use, which are then relieved once the individual consumes alcohol. To some extent, these repetitive thoughts are synonymous with urges. For instance, the thoughts were similar to Obsessive Compulsive Disorder's (OCD) obsessions and compulsions (Modell et al., 1992) in that they were uncontrollable and ruminative. Additionally, Hintzen and colleagues (2011) found that this relationship is greater in younger individuals when compared to older individuals. Individuals have difficulty stopping engagement in an urge-related behavior once an urge presents itself (Modell et al., 1992). Thus, urges may become more intense until the individual engages in the urge-related behavior, similar to obsessions in OCD.

Substance use urges link to individual demographic characteristics, including age and gender; however, contradictory findings have occurred (Hintzen et al., 2011; King et al., 2008; McChargue & Spring, 2009). Younger individuals experienced fewer urges for alcohol after withdrawal compared to older individuals (Hintzen et al., 2011). Nevertheless, age did not predict smoking cravings in a separate study of adult smokers (Doran, Cook, McChargue, & Spring, 2009). In regard to gender, when examining appetitive cravings (i.e., craving and believing that pleasure will result from behavior), greater cravings were associated with being male (Doran et al., 2009); however, gender was not predictive of general cravings (Hintzen et al., 2011). Conversely, male and female light smokers (i.e., self-reported non-dependence) experienced no significant difference in their ratings of urges to smoke cigarettes immediately after consuming alcohol (King et al., 2008). Consequently, assessing urges based on demographic characteristics and varying the type of, or when (e.g., before or after alcohol use), urges are assessed may lead to different outcomes.

Behaviors other than substance use are associated with urges. Women with Bulimia Nervosa (BN) experienced greater urges to binge eat, restrict food intake, and exercise compared to women without BN (Bruce et al., 2011). Additionally, alcohol significantly reduces these urges more in women with BN than those without BN (Bruce et al., 2011). Recreational gamblers report the same level of cue-elicited gambling urges as those with a pathological gambling disorder (Park et al., 2015). When individuals received an exercise intervention, compared to no intervention, lower impulsive buying urges and purchase intentions occur (Sultran, Joierman, & Sprott, 2012). Consequently, urges relate to various urge-related behaviors, and interventions must focus on urge-related behavioral cues and memory for reinforcement properties related to the urge-related behavior.

Neural changes may help explain how behavior affects urges; particularly when we examine the brains reward center and impulsivity region. Presenting cues eliciting urges for substances activates brain activity associated with rewards (Kavanagh et al., 2004; Tiffany & Wray, 2012). Due to psychopathologies' influence on the release of different neurotransmitters, an individual may experience greater cravings (Anton, 1990). For example, depression affects an individual's orbitofrontal cortical functions, which increases impulsivity and self-reported urge scores. Therefore, increased engagement in urge-related behavior is likely to occur during depression (Anton, 1999). When an urge occurs, an individual is also more likely to engage in the urge-related behavior; therefore, conditioning creates stronger neural connections and activations between the urge and behavior. Due to the neural activations becoming stronger, urges may be more likely to occur, indicating a bi-directional relationship.

Overall, urges have a moderate correlation with behavior, accounting for approximately 16% of the variance in urge-related behavior (Tiffany, 1990). Nevertheless, urges predict

smoking cessation or drug use behavior (Tiffany & Wray, 2012), Bulimia Nervosa (Bruce et al., 2011), gambling behaviors (Park et al., 2015), and impulse buying (Sultran et al., 2012). Marlatt and Donovan (2005) contradict these findings and report that there lacks strong empirical evidence between urges and relapse from substance use. Nevertheless, there may be numerous reasons why these findings occurred, including the utilization of poor measures (e.g., poor reliability) and urges may only predict urge-related behavior or relapse in certain situations.

Affect's Influence on Urges and Urge-Related Behavior

Urges influence an individual's current emotional experience; nevertheless, research has demonstrated contradictory findings. Several studies have found negative affect, compared to positive affect, is more significant in inducing urges and urge-related behavior (e.g., Delfino et al., 2001). However, other researchers demonstrate that positive and negative affect have varying effects on urges (e.g., Tiffany, 1990).

Negative mood induction has been shown to increase urges and urge-related behavior engagement. Negative affect, including anxiety, fatigue, and sadness, have been found to be a more significant predictor of urges (Delfino, et al. 2001; Drobles et al., 1994) than positive affect or a neutral cue induction. Negative affect also predicted reduced confidence to not smoke and an absence of effective coping skill utilization to manage smoking urges (Drobles et al., 1994). More specifically, negative mood induction, along with positive reinforcement (e.g., obtaining a "buzz") from the behavior accounted for 10% of the variance in self-reported smoking urges (Vinci, Kinsaul, Carrigan, & Copelan, 2015) in a sample of adult cigarette smokers. Nevertheless, cueing participants with negative affect music and pictures increased self-reported urges to smoke but increasing the presentation of these cues (i.e., continuing to present more of these cues over a period of time) had no effect (Vinci, Copelan, & Carrigan, 2012).

Conversely, Tiffany (1990) found that the type of urge varies depending on the affect cue presented (i.e., positive versus negative) because positive and negative affect cues affect urges through different pathways. Positive affect increases urges and urge-related behavior through motivation states. For example, positive affect cues increased the psychological desire to engage in urge-related behavior. Negative affect is associated with withdrawal states and therefore increases urges and urge-related behavior through the removal of aversive feelings or stimuli.

The influence of affect can also change based on the associated urge-related behavior. Among women with Borderline Personality Disorder (BPD), positive affect increased the likelihood that a woman experienced more urges for binge eating and aggressive behaviors (i.e., hitting and throwing) while negative affect did not significantly predict any urges. Furthermore, these women experienced greater impulsivity when they were experiencing positive emotions and therefore they were less able to inhibit urge-related behaviors (Dixon-Gordon, Chapman, Weiss, & Rosenthal, 2014). Among substance-using individuals, negative stimuli and emotions (e.g., withdrawal, shame, guilt) play a more important role in inducing urges and substance use (Tiffany, 1990).

Urges and Impulsivity

Urges and impulsivity link through an inability to control behaviors; consequently, individuals that are more impulsive may experience greater urges and engage in more urge-related behavior. Impulsivity is an individual characteristic. It leads one to act quickly and limits his/her available cognitive resources (Campbell, 2009; Cosi, Morales-Vives, Canals, Lorenzo-Seva, & Vigil-Colet, 2008). Behaving spontaneously, or without consciously thinking, characterizes impulsivity (Campbell, 2009); individuals also have less consideration for the consequences of their actions (Campbell, 2009; Cosi et al., 2008). An individual may be more

impulsive due to a desire to reduce distressful feelings (de Wit, 2008; Reyna & Farley, 2006); more specifically, impulsive individuals are more likely to engage in urge-related behaviors when experiencing distress or negative emotions to relieve this distress (e.g., substance use to reduce withdrawal, deliberate self-harm to reduce high emotional reactivity). Acting impulsively reinforces, and occurs more, because distress reduces from urge-related behavior engagement (Reyna & Farley, 2006).

Both impulsivity and urges relate to an inability to control one's actions. Urges are a strong, intense, impulse to engage in a behavior; therefore, the individual will be less capable of controlling his actions (Sussman & Sussman, 2011). Presenting a smoking related cue exposure script, compared to a neutral cue exposure script, creates significantly greater response latencies (Hagger et al., 2013). This demonstrates that reduced self-control abilities are present in conjunction with an urge-related behavioral cue. More impulsivity was also related to reduced time spent on a handgrip task when exposed to a smoking related cue exposure script compared to a neutral script; this shows that urges and impulsivity are further related to self-control difficulties (Hagger et al., 2013).

Individuals who are more impulsive engage in more urge-related behaviors because they experience greater urges. Impulsive individuals experience their thoughts more intensely than non-impulsive individuals (Brown et al., 2006). Additionally, this makes it more difficult to inhibit urge-related behaviors (de Wit, 2008). When compared to less impulsive individuals, more impulsive individuals have greater difficulty inhibiting behaviors that lead to pleasure or gratification (de Wit, 2008). Many urge-related behaviors associate with pleasure and gratification (e.g., substance use, deliberate self-harm) and therefore it is likely that individuals

will experience more urges for these behaviors, be less likely to inhibit these urges because they are more intense, and therefore engage in these behaviors more.

Specific urges (e.g., emotional, desire to reduce withdrawal) associate with greater levels of impulsivity, therefore leading to greater engagement in urge-related behaviors. Joos and colleagues (2012) found emotional cravings (i.e., motivational feelings of wanting to engage in urge-related behavior, emotional feelings to desire urge-related behaviors, implicit feelings) relate to greater self-reported impulsivity scores. There is no relationship with cognitive craving (i.e., knowing urge-related behavior will be pleasurable). Additionally, greater impulsivity and greater emotional craving scores were related to more years engaged in heavy drinking and more severe alcohol dependence problems. Greater urges associated with reducing withdrawal or negative affect associate with greater urgency (i.e., commit impulsive acts without experiencing negative affect) components of impulsivity (Billieux, Van der Linden, & Ceschi 2007). Higher levels of sensation seeking (i.e., desire to seek out excitement or stimulation) are related to greater levels of appetitive cravings (i.e., cravings related to a belief that pleasure will come from urge-related behaviors), specifically after smoking cues occur (Doran et al., 2009). Therefore, specific types of urges relate to different forms of impulsivity and different urge-related behaviors (e.g., substance use).

Urges and impulsivity relate to urge-related behavior through other constructs, such as affect and dietary control. After seeing a cue for smoking, individuals with higher urgency and difficulty with perseverance (i.e., ability to attend to a task without getting bored) had greater increases in negative affect cravings than those in a neutral cue condition (Doran et al., 2009). Individuals with higher urgency scores, when compared to individuals with lower urgency scores, were more likely to have non-suicidal self-injury urges if they were experiencing sadness, upset,

or fear (Bresin, Carter, & Gordon, 2013). Impulsivity was a moderator between dietary control (i.e., controlling what one eats, restricting food intake) and binge eating urges, explaining 22% of the variance. As dietary control levels increased, urges for binge eating for individuals in the low and average impulsivity groups increased as well; however, urges for binge eating did not increase for those in the high impulsivity group (Steiger et al., 1998).

Etiology of Urge-Related Behaviors

The etiology of urge-related behavior interrelates to numerous variables including impulsivity, urges, intrapersonal variables, and interpersonal variables (e.g., Kress & Hoffman, 2008; Courbasson et al., 2011). Several personality traits (e.g., emotional reactivity, impulsivity; Perry & Carol, 2008) and environmental variables (e.g., ethnicity, family; e.g., Reyna & Farley, 2006) explain the etiology of substance use. Greater impulsivity has been one variable strongly linked to the etiology of substance use or abuse (Beauvais & Oetting, 2002; Perry & Carol, 2008; Wurmser, 1974). A bi-directional relationship between impulsivity and substance use occurs (Perry & Carol, 2008, Wurmser, 1974), in which greater impulsivity increases substance use and individuals who use more substances are more impulsive. A desire for immediate gratification and greater sensation seeking are also associated with greater substance use (Beauvais & Oetting, 2002), further strengthening the relationship between impulsivity and substance use.

Affect change (i.e., reduce negative affect, increase positive affect) also predicts substance use etiology. A desire to cope with negative emotions is associated with greater substance use (Howell Leyro, Hogan, Buckner, & Zvolensky, 2010; Simons, Gaher, Correia, Hansen, & Christopher, 2005) and substance use problems (Bujarski, Norberg, & Copeland, 2012). Therefore, substance users may have more difficulty processing negative emotions. Low frustration tolerance (i.e., difficulty experiencing painful thoughts and emotions such as anger or

sadness; desire immediate pleasure) also predicts greater substance use (Wurmser, 1974). A belief that substance use will produce pleasure (e.g., feelings of intoxication), or positive affect, is also predictive of greater substance use (Church, Truss, & Marino, 1974; de Wit, 2008; Smart, Ogborne, & Newton-Taylor, 2008).

Environmental and personal factors link to increased substance use. Individuals may use substances with peers to increase social bonding (Beauvais & Oetting, 2002; Gove, Geerken, & Hughes, 1979), specifically if individuals lack family support (Wurmser, 1974). Substance use is predicted by an individual's community characteristics (i.e., substance use is higher in rural communities than urban areas; Beauvais & Oetting, 2002). Individuals may also use substances due to modeling (McCauley Ohannessian et al., 2004; Reifman, Barnes, Dintcheff, Farrell, & Uhteg, 1998). For example, individuals whose parents, family members, or peers use substances are more likely to engage in substance use (McCauley Ohannessian et al., 2004; Reifman et al., 1998). Experiences also influence substance use, including past trauma (e.g., rape, abuse; Reyna & Farley, 2006) and limited family bonding (Gaher & Simons, 2007; Gove et al., 1979; Reyna & Farley, 2006)

Several intrapersonal and interpersonal constructs associate to the etiology of deliberate self-harm. For example, mental health problems, including suicidal ideation, eating disorders, mood disorders, and Borderline Personality Disorder (Garner & Garner, 1975; Kress & Hoffman, 2008; Parker et al., 2005; Ross & Heath, 2002) predict deliberate-self harm behaviors. Trauma, including complex trauma (i.e., several traumatic incidences occurring to the same person) and childhood trauma that leads to Post-Traumatic Stress Disorder (PTSD) are significant predictors of deliberate self-harm (Arens, Gaher, Simons, & Dvorak, 2014; Parker et al., 2005). Feelings of emptiness and numbness, as well as a desire to control feelings predict deliberate self-harm

behaviors (Nock & Prinstein, 2004; Parker et al., 2005); therefore individuals who engage in deliberate self-harm may desire a reduction in negative affect which leads to urges to engage in urge-related behaviors such as deliberate self-harm. Similar to substance users, individuals who engage in deliberate self-harm are more impulsive (Kress & Hoffman, 2008). Deliberate self-harm assists the individual in regulating his or her emotions and can provide social reinforcement (e.g., support from others, peer acceptance; Kress & Hoffman, 2008), demonstrating that deliberate self-harm is likely conditioned.

The etiology of eating disorders involves several intrapersonal characteristics. Bulimia Nervosa (BN) and Anorexia Nervosa (AN) link to difficulties in emotional regulation skills (Courbasson et al., 2011) and affect instability (Brown, Haedt-Matt, & Keel, 2011). Difficulties regulating emotions include reporting more intense emotions, specifically negative affect (e.g., sadness), difficulty coping with emotions in a positive way, and having labile mood (Silk, Steinberg, & Morris, 2003). Therefore, similar to substance users and those who engage in deliberate self-harm, these individuals may have more difficulty experiencing negative emotions (Courbasson et al., 2011; Silk et al., 2003), leading to higher AN and BN urges and behavior engagement. Depression, PTSD, and Avoidant Personality Disorder are also associated with AN and BN (Courbasson et al., 2011). Higher urges have a bidirectional relationship with maladaptive eating behaviors (Courbasson et al., 2011; Steiger et al., 1998), as greater urges lead to AN and BN behaviors and BN behaviors leads to greater urges to binge. BN relates to higher levels of impulsivity and disinhibition (Brown et al., 2011) as well. Similar to other urge-related behaviors, it appears that AN and BN are linked with impulsivity, other psychopathologies, and difficulty experiencing negative emotions.

Several environmental factors are associated with aggression. For example, poverty and the presence of violent cues predict aggressive behavior (Bettencourt, Talley, Benjamin, & Valentine, 2006). Witnessing parental conflict and experiencing parental divorce during childhood is associated with a greater likelihood that a person will engage in aggressive behaviors later in life (Bettencourt et al., 2006). The quality of the individual's relationship with his or her parents predicts aggression (Bettencourt et al., 2006). For example, better relationships decrease the likelihood that an individual will behave aggressively (Bettencourt et al., 2006).

Various personality characteristics also predict aggression. More specifically, self-regulation skills, low emotional susceptibility, and difficulty experiencing negative affect predict aggression. Those who have more difficulty experiencing feelings of stress and negative emotions are more likely to behave aggressively similar to substance use, deliberate self-harm, AN and BN. Limited cognitive processing abilities and reduced social information processing abilities are also predictive of aggressive behaviors (Bettencourt et al., 2006). Personality traits, such as lower levels of agreeableness and higher levels of neuroticism and narcissism, relate to greater aggression; however, rumination tendencies are the most predictive of aggressive behaviors, (Bettencourt et al., 2006). Impulsivity predicted aggressive acts, specifically when a neutral stimulus provokes an individual (Bettencourt et al., 2006).

Overall, research appears to demonstrate that many urge-related behaviors might have an etiology stemming from urges (e.g., Battencourt et al., 2006; Courbasson et al., 2011). This is proposed because many of these urge-related behaviors are related to a desire to reduce distressful or negative feelings (e.g., Battencourt et al., 2006); therefore, when an individual experiences urges, which is likely a negative feeling, he or she will be more likely to engage in

urge-related behaviors. Additionally, the etiology of many of these urge-related behaviors has a relationship with impulsivity (e.g., Brown et al., 2011). Impulsivity is associated with a greater likelihood to experience urges (Sussman & Sussman, 2011) as well. Due to these factors, it is likely that individuals who engage in these behaviors will benefit from interventions that assist in reducing urges and coping with distressing feelings.

First-Wave Interventions for Urge-Related Behaviors

Numerous mental health interventions have been developed to reduce urge-related behavior; however, each is unique in its treatment modality. More specifically, first-wave interventions focus on changing an individual's behavior to assist in reducing urge-related behaviors. Currently, these interventions are typically brief in nature and conducted in conjunction with other interventions (e.g., second-wave). These interventions include: Contingency Management (CM), Cue Exposure (CE), and safety planning.

Description of First-Wave Interventions

In CM, the therapist, significant others (SOs), or parents reinforce the adolescent for desired behaviors and abstinence from engagement in an urge-related behavior. This could include providing \$2 every time the individual chews gum rather than smokes a cigarette. Key aspects of CM include ensuring that SOs have concrete, objective, evidence that the client is engaging in the desired behavior rather than a maladaptive one. SOs then provide tangible reinforcements (Krishnan-Sarin et al., 2006). It may also include removing reinforcement if the individual engages in an urge-related behavior (Krishnan-Sarin et al., 2006).

CE provides the individual with successive exposure to cues of an urge-related behavior. For example, an individual may be presented with sights and smells related to alcohol use. CE reduces how intensely individuals feel urges triggered by urge-related cues. It also increases the

likelihood they will resist engaging in the behavior in the future (Kavanagh et al., 2004). CE is effective through classical conditioning and learning techniques. The pairing of alcohol cues (i.e., neutral stimulus), such as bars or beer cans, when conducting CE no longer produces conditioned responses (e.g., urges) or unconditioned responses (e.g., salivation; Monti & Rohsenow, 1999). In general, an individual resists the urge to engage in the urge-related behavior after seeing urge-related behavioral cues. CE teaches behavioral resistance techniques (e.g., walking away, carrying a non-alcoholic beverage during a party) and how to reduce the likelihood that urge-related cues are present (e.g., going to a bar). CE is typically more effective with individuals who experience affect or engage in behaviors after the presentation of an urge-related cue.

Safety planning includes developing a list of coping strategies and interpersonal support to utilize when an individual experiences suicidal ideation (Stanley & Brown, 2012) or other high-risk urges. Safety planning teaches the individual to recognize signs of suicidal ideation, employ both internal (e.g., limit obsessive thoughts about negative variables) and external (e.g., social support, contact a mental health professional) coping mechanisms, and reduce the likelihood that he will have means to commit suicide (e.g., knives, pills, ropes). For example, the client creates a list of enjoyable activities and individuals to contact when he has thoughts of suicide. He is also encouraged to reduce the likelihood that stimuli to commit suicide (e.g., knives, medications, rope) will be available.

Effectiveness of First-wave Interventions

Behavioral treatments that only focus on behavior change can be effective to treat urge-related behaviors. For example, interventions that modify contingencies around urge-related behaviors, such as CM, reduce these behaviors. CM, in conjunction with CBT, was more

effective at reducing smoking behavior than CBT alone in a sample of adolescents (Krishnan-Sarin et al., 2006). Uniquely, this approach assessed high-risk situations, evaluated a client's ability to cope with cravings and urges through more appropriate coping techniques, and taught assertiveness skills. Using CM in conjunction with other treatments is common; therefore, research to evaluate the effectiveness of CM alone at reducing urge-related behaviors is limited. Overall, its utility must be researched more comprehensively.

CE, or conditioning techniques, is effective at reducing urge-related behaviors in adults as well. CE successfully reduced the likelihood that adults who abuse alcohol would engage in future alcohol use. CE was also more effective than a control intervention (i.e., relaxation training; Kavanagh et al., 2004) and as effective as CBT (Kavanagh et al., 2004).

Safety Planning includes modifying one's environment to reduce the likelihood for urge-related behaviors. Therefore, by utilizing a behavioral technique, Safety Planning reduces both negative thoughts (e.g., suicidal ideation) and behaviors (e.g., committing suicide). Safety Planning interventions, conducted with military veterans and adolescents who experience suicidal ideation, produce a reduction in imminent risks for suicidal urge-related behaviors (Stanley & Brown, 2012).

Overall, behavioral interventions are effective at reducing substance use and suicidal behaviors in adults and adolescents. Nevertheless, there is limited research on the effectiveness of many first-wave interventions when utilized separately, rather than in conjunction with second- or third-wave interventions. Additionally, there is limited research on their usefulness with a wide array of urge-related behaviors. Many of these interventions only focus on changing behaviors, and therefore do not attempt to change thoughts and feelings. For example, in Safety Planning, clients are instructed to change their behaviors by implementing different coping

strategies, such as exercise, obtaining social support, or going to a public place. These changes then assist in reducing suicidal thoughts, as well as feelings of sadness (Stanley & Brown, 2012). However, it is likely that many clients utilizing these treatments still have difficulties with the thoughts (e.g., urges) related to their negative behavior. Consequently, it appears that although these interventions are effective, they are missing the important component of cognition change and thus urge-related behaviors may resume.

Second-wave Interventions to Reduce Urge-Related Behavior

Recognizing the limitations of first-wave treatments helped establish second-wave treatments. Second-wave interventions focus more on changing thoughts and feelings, in conjunction with behaviors. These interventions include Cognitive Behavioral Therapy (CBT) and the Adolescent Community Reinforcement Approach (ACRA).

Description of Second-wave Interventions

CBT assists clients in examining the relationship between thoughts, feelings, and behaviors. It utilizes problem solving and goal development to improve mental health and reduce urge-related behaviors. CBT therapists believed that thoughts, feelings, and behaviors are directly related, and influence one another (Fruzzetti & Erikson, 2010). For example, an individual may experience anger about being ignored and therefore engage in an argument with his spouse or worse, end the relationship; in this case the feeling (anger) influences a behavior (argument/separation) and in turn that behavior (argument/separation) may influence a subsequent feeling (e.g., sadness).

Consequently, CBT purports that behaviors can change if thoughts change. Therapists work to modify maladaptive thoughts that lead to urge-related behavior engagement through interventions like thought-stopping and cognitive restructuring (Fruzzetti & Erikson, 2010). For

example, a CBT thought–stopping intervention may consist of having the client respond to a thought of wanting to smoke a cigarette by saying, “Stop!” and refocusing thoughts away from the urge to smoke a cigarette. CBT uses cognitive restructuring techniques to assist a client in recognizing that the thought, “I’m going to die if I don’t get a cigarette” is catastrophizing. It then assists in replacing urge-related thoughts with more accurate thoughts, such as, “If I don’t have a cigarette I will feel uncomfortable.” Consequently, this assists the individual in creating change in their behaviors (e.g., smoking less, coping with urges). Additionally, the clinician assists in teaching the client more positive coping mechanisms (e.g., exercise, listening to music; Duckworth & Freedman, 2012) to elevate mood and reduce the likelihood that urge-related behavior will occur (Fruzzetti & Erikson, 2010).

CBT is antecedent focused (Fruzzetti & Erikson, 2010), as the individual focuses on changing the precipitating urge rather than the resulting consequence of the action. For example, CBT teaches individuals to recognize and change thoughts related to an urge to smoke, rather than noticing the resulting health problems that lead to a desire to quit smoking. This is in contrast to other interventions that may focus on accepting the urge (e.g., realizing the urge is a thought and not reality) or the outcome of the urge-related behavior (e.g., Dennis et al., 2014; Fruzzetti & Erikson, 2010).

The Adolescent Community Reinforcement Approach (ACRA) combines both CBT and family therapy approaches to reduce the likelihood that adolescents will engage in risk behaviors. ACRA focuses on operant conditioning (e.g., determining how urge-related behaviors have been increased due to their consequences), skills training (e.g., identifying operationally defined and obtainable goals, problem solving), and behavioral change (i.e., replacing environmental contingencies that support urge-related behaviors with more prosocial activities, increasing

engagement in activities that focus on desirable behaviors). It also utilizes social reinforcement and caregiver only sessions to change urge-related behaviors. ACRA teaches communication skills and uses role-plays to assist clients in learning how to reduce urge-related behaviors (Dennis et al., 2004) as well. For example, ACRA may focus on having parents remove their liquor cabinet within the home. It may also teach parents active listening skills to assist in the reduction of fighting within the home and consequential alcohol use. It may also attempt to develop goals related to increasing behavior that is not compatible with urge-related behavior or reducing the reinforcement obtained after engaging in urge-related behaviors (Dennis et al., 2004). This could include creating goals to spend more time with family and create consequences (e.g., grounding, chores) when the child engages with negative peers.

Effectiveness of Second-wave Interventions

Understanding how thoughts and feelings relate to urge-related behavior is an imperative part of intervention services (Rector, 2010). Consequently, second-wave intervention techniques, such as CBT, were evaluated to determine their effectiveness in reducing various urge-related behaviors. Overall, they are efficacious with adolescents and adults.

CBT reduces substance use and other urge-related behaviors in both adolescents and adults. CBT was more effective at decreasing the severity of adolescent substance use in a randomized control trial from baseline to follow-up assessment when compared to an interactional treatment (i.e., focusing on interpersonal relationships and the present moment during group therapy, fostering insight, regulating self-care and affect, developing self-esteem; Kaminer et al., 1998). CBT also reduced adolescent marijuana use (Liddle et al., 2008) and the use of other psychoactive substances (e.g., cocaine, methamphetamine, alcohol; Waldron & Kaminer, 2004) both during treatment and when assessed at a 6-month follow-up. Compared to

treatment as usual, CBT reduced deliberate self-harm behaviors in individuals ages 15 to 35 through a 9-month follow-up period (Slee et al., 2008). CBT also had a moderate effect size at reducing aggressive behaviors in adolescents (Smeets et al., 2015).

Although CBT, and other first and second-wave interventions, have been found to be effective in treating adolescent urge-related behavior, utilizing CBT techniques can lead to future negative effects (Korn, 1997; Litvin et al., 2012). More specifically, when an individual discontinues using second-wave therapy cognition skills (e.g., thought stopping) they are more likely to demonstrate a rebound effect. This creates a greater frequency of negative thoughts, such as urges, than if the individual did not implement any skills (Litvin et al., 2012). For example, individuals who utilized suppression techniques were unable to tolerate future pain as well as those utilizing acceptance techniques (Korn, 1997). Utilizing these techniques for long periods also leads to a decrease in their effectiveness, as they are difficult to maintain over time (Litvin et al., 2012).

ACRA, when compared to other treatment approaches, is effective in reducing urge-related behaviors. When compared to both family therapy alone and an enhanced CBT approach, Dennis and colleagues (2004) found that ACRA assists adolescents in reducing their days of substance use. In this same study, ACRA also produced more abstinent clients than other intervention modalities (Dennis et al., 2004). Nevertheless, ACRA also suffers from similar negative effects as CBT, such as the rebound effect of urges (Litvin et al., 2012). This is because ACRA uses similar techniques to CBT, in which clients recognize, stop, and modify their urges and negative thoughts. However, participants who attempt to do this are more likely to experience a greater frequency of urges and be less likely to maintain these skills over time (Litvin et al., 2012).

Third-wave Interventions to Reduce Urge-Related Behaviors

Although many treatments may be efficacious at reducing urge-related behaviors in adolescents (e.g., CBT), some youth may not benefit from these interventions. Nearly 25% of youth who receive behavioral treatments do not improve and do not demonstrate changes in their presenting problem (Zack et al., 2014). It is possible that by focusing on cognitive changes (e.g., cognitive restructuring, thought stopping) therapists are emphasizing the wrong intervention techniques (Zack et al., 2014). Therefore, third-wave treatments that have modified CBT, and relied more on mindfulness-based techniques, were developed.

Mindfulness based interventions teach acceptance, non-judgment, and awareness (Vinci et al., 2014; Witkiewitz et al., 2013). Acceptance is when an individual is willing to experience things that occur without trying to change, block, or suppress the thoughts, behaviors, or feelings that result, leading to greater emotional regulation skills (Fruzzetti & Erikson, 2010). Acceptance focuses on simply observing thoughts as they come and go, rather than believing that individuals must act on these feelings (Ostafin & Marlatt, 2008). Mindfulness interventions emphasize awareness of the present moment (i.e., internal and external), rather than the future or the past; individuals learn to become purposefully aware with curiosity and acceptance (Fruzzetti & Erikson, 2010). The skills taught in these interventions are in contrast to interventions that focus on changing urges, thoughts, or feelings; additionally, it is also distinct from the natural tendency to utilize suppression (Fruzzetti & Erikson, 2010). There is emphasis on these skills even if experiences are unpleasant or uncomfortable (Brewer et al., 2014).

Mindfulness interventions can also encompass teaching clients about triggers for urge-related behaviors. Mindfulness interventions teach (e.g., via psychoeducation, awareness skills) clients that associative learning (i.e., physical and mental stimuli) and the environment cue urge-

related behaviors (Brewer et al., 2014). Consequently, an individual's thoughts, emotions, and physiological responses are cues that lead to urge-related behavior (Brewer et al., 2011). Mindfulness interventions then teach the individual to be more aware of urge-related behavioral cues (e.g., ads for alcohol use, people smoking around him) and to accept the urge-related thoughts and feelings (Witkiewitz et al., 2013). They are taught that one can experience an urge without having to act upon it, "an urge is just an urge." If an individual becomes skilled enough in awareness and acceptance (i.e., aware of automatic thoughts or urges, engage in mediation), it is believed that attitudes towards cues for the urge-related behavior are changed, rather than the urges, thoughts, and feeling surrounding the urge-related behavior (Courbasson et al., 2011).

Overall, third-wave interventions assist in reducing problems of previously developed interventions such as rebound effects and time-limited improvement (Gratz, 2010). These modalities typically focus on mindfulness skills (e.g., acceptance, awareness; Gratz, 2010) or meditation practices to assist the client (Witkiewitz et al., 2005). These interventions include Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Motivational Interviewing (MI). They can also include Mindfulness-Based Relapse Prevention (MBRP), Mindfulness Based Stress Reduction (MBSR), Mindfulness Based Cognitive Therapy (MBCT), Vipassana Meditation (VM), and other meditation based interventions (i.e., Sitting Meditation).

Description of Third-wave Interventions

Acceptance and Commitment Therapy (ACT) decreases clients' mental health concerns and reduces urge-related behavior engagement. ACT emphasizes openness and willingness towards feelings, thoughts, and experiences (i.e., acceptance); as well as the ability to be aware and focus on the present moment (e.g., throwing oneself into daily activities). ACT also

emphasizes the belief that an individual is not his or her thoughts (i.e., thought diffusion). For example, having the thought “I am stupid” does not make this true, rather it emphasizes that the individual is having a negative thought that can be noticed, accepted, and then de-emphasized (National Registry of Evidence-based Programs and Practices, 2015).

ACT also increases an individual’s cognitive flexibility. This includes an understanding that an individual’s thoughts are not reality and engaging in more effective problem solving. ACT encompasses a belief that individuals should behave in accordance with their values, such as honesty, kindness, or wealth (e.g., telling the truth even if it is more difficult than lying, doing well in one’s career so as to earn more money; Zack et al., 2014). In ACT, increased overall well-being is not a requirement for improved psychological functioning. This is due to the idea that overall well-being can be obtained through many avenues (e.g., career, relationships, living based on values), not just an improvement in mental health (Zack et al., 2014).

Similar to ACT, Dialectical Behavior Therapy (DBT) is a third-wave behavior intervention that can reduce urge-related behaviors. DBT emphasizes increasing a client’s mindfulness skills. This includes having participants engage in more proactive observation of their environment, as well as reducing judgments (e.g., that dress is ugly, you are stupid) through more neutral descriptions and full participation in actions. DBT focuses on obtaining more stable emotions and less reactivity to stimuli. It also attempts to assist clients in being able to tolerate distressing feelings and thoughts (e.g., exposure and response prevention), and improve self-control (Fruzzetti & Erikson, 2010; Zack et al., 2014) through self-monitoring (McCann & Ball, 2000). While learning skills in DBT, an individual may continue to have distressing symptoms (e.g., feelings of sadness, urges to engage in self-harm; Zack et al., 2014) similar to

ACT; however, the goal is to assist a client in obtaining a life worth living through a reduction in suffering.

More client-centered interventions were established to reduce urge-related behaviors. Motivational Interviewing (MI) assists the client in assessing and resolving ambivalence about engagement in an urge-related behavior. For example, a client assesses the positive and negative variables of experiencing urges and engaging in urge-related behavior. The therapist uses a collaborative approach towards communication, including open-ended questions and reflections (i.e., paraphrasing and restating client's words, thoughts, and feelings). This assists in the assurance that the expression of empathy and increased talk about change with the client occurs. MI also attempts to assist clients in assessing their self-talk (e.g., urges, self-deprecating ideas) in an attempt to accept negative thoughts about oneself and increase more positive talk. Therapists utilizing an MI modality attempt to meet the client where she is in her change process and does not force or underestimate change (e.g., make client stop smoking when the client feels only capable of reducing smoking behavior; Catley et al., 2012).

Mindfulness meditation practices are also a therapeutic technique for the treatment of urge-related behaviors, specifically substance use disorders. These interventions focus on meditation, awareness of emotions, and presence within the moment. More specifically, in Mindfulness-Based Relapse Prevention (MBRP) clients take a two-hour, eight-week, course in mindful meditation and then meditate at home for 30 minutes per day for six days a week there after. Individuals also continue with alcohol treatment with their usual provider (e.g., individual therapist, Alcoholics Anonymous). MBRP teaches clients how to be present in the moment; acceptance and non-judgment techniques; meditation practices (e.g., focus on breath, combination of emotion and logical mind); awareness of bodily sensations; psychoeducation

about automatic thoughts, triggers, and cravings; thought labeling; and problem solving for relapse prevention in high-risk situations (Witkiewitz et al., 2005; Zgierska et al., 2008). MBRP treatment can also focus on more behavioral components such as problem solving the pros and cons of abstinence; increased awareness of triggers; behavioral, cognitive, and affective reactions leading to relapse; and coping strategies for cravings (Lee, Bowen, & An-Fu, 2011). Another relapse based meditation intervention, Mindfulness Training for Smokers, focuses on developing strategies to manage relapse through recognizing triggers, becoming aware of strong emotions that cue relapse related thoughts, awareness of urges and withdrawal symptoms, guided meditation for 30 minutes per day, and awareness of social situations associated with smoking (Davis et al., 2013).

Mindfulness Based Stress Reduction (MBSR) is one of the most widely cited mindfulness based intervention practices in medicine (Zgierska et al., 2009) and focuses on assisting the client to develop a more mindful oriented life (Davis, Fleming, Bonus, and Baker, 2007). MBSR is a group practice that meets for two to three hours per week, for eight weeks, as well as a onetime seven hour mindfulness training day; each individual also conducts individual mindfulness practices for 45 minutes per day for six days a week. MBSR teaches clients to live life moment-to-moment (i.e., be present), remain non-judgmental, be aware of their thoughts and feelings (e.g., cravings, negative affect, withdrawal symptoms), and utilize meditation to decrease cravings and withdrawal symptoms (Zgierska et al., 2009). It also focuses on increasing cognitive and emotional flexibility (e.g., reduce rumination, limit acting on thoughts), as well as utilizing skills when facing challenges in everyday life (e.g., meditation, non-judgment; Davis et al., 2007). MBSR practices do not focus on change or fixing the individual's situation, rather the

intervention teaches clients to notice and accept discomfort or pain non-judgmentally (Fruzzetti & Erikson, 2010).

Mindfulness Based Cognitive Therapy (MBCT) can also be utilized to teach clients mindfulness-based skills in conjunction with CBT. MBCT combines meditation-based strategies (i.e., body scan, mindfulness meditation, walking meditation) and CBT approaches (i.e., cognitive restructuring; Zgierska et al., 2009). MBCT focuses on reducing goal based processes and assisting clients in reducing their attention on early signs of relapse (Fruzzetti & Erikson, 2010). MBCT can also include psychoeducation about mindfulness and cognitive based practices including remaining present in the moment, the role of perception, the mind and body association, developing inner coping skills, stress reactivity, and the wandering mind (Burke, 2009). MBCT teaches clients mindfulness practices (i.e., paying attention, on purpose, in the present moment) and how to think and act non-judgmentally (Zack et al., 2014).

Vipassana Meditation (VM) teaches mindfulness through acceptance and awareness techniques to reduce mental health concerns. VM uses mindfulness techniques that are objective and assist the client to become more detached in his or her self-observations; this reduces the amount of reactions and judgments, while increasing acceptance. Additionally, individuals are more likely to acknowledge their cognitions and affect as independent thoughts or dependent on the environment (i.e., cues around them, daily or life events) rather than a direct reflection of themselves. VM also focuses on the idea that events are impermanent and likely do not require action, allowing individuals to disconnect from thought patterns that may lead to suffering. VM has a specific focus on breathing, calming the body, and body scans (i.e., focusing on examining how one's body feels in the present moment, including physical, emotional, and mental responses within the present moment; Bowen et al., 2006).

Other mindfulness interventions focus on being present in the current moment, non-judgment, and awareness to assist in enhancing positive coping styles. In Sitting Meditation, clients do not move, rather they direct their attention to the present moment on purpose (e.g., breath, room they are in) to quiet their minds. Movement Meditation consists of focusing one's breath and other somatosensory events in the present moment when positioning the body in different ways to assist in awareness. When a client practices Guided Body Scan Meditation, current cues (e.g., auditory, olfactory) guide him through a systematic scan of various psychosomatic sensations felt within the body (Black, 2012). Mindfulness Meditation can include teaching clients to shift their attention from emotionally stimulating thoughts, events, or situations, to a neutral area of their body (e.g., foot; Singh, et al., 2007). Individuals learn to focus on the present moment and anchor their mind on a neutral body part; this stimulates calm rather than emotionally arousing thoughts or anxiety (Sing et al., 2007). In each of these interventions, maintaining focus on non-judgment of thoughts and feelings happens, as well as openness to the experiences.

Several third-wave interventions are available, each with their own skills that assist in reducing urge-related behaviors. Overall, they each focus on acceptance skills or mindfulness, self-awareness, and a re-evaluation of one's own behavior. Nevertheless, some rely on reducing judgment or focusing on values to assist in the reduction of behavior (i.e., ACT, DBT; Fruzzetti & Erikson, 2010; Zack et al., 2014). Some of these mindfulness-based interventions emphasize a prevention of relapse (i.e., MBRP, Mindfulness Training for Smokers; Davis et al., 2013; Witkiewitz et al., 2005; Zgierska et al., 2008). Other interventions focus more on meditation practices and developing a more mindful based life (MBSR; Davis et al., 2007). Interventions that focus on meditation, such as Sitting Meditation and Movement Meditation, assist individuals

in developing more positive coping techniques (Black, 2012). Although each of these interventions utilizes its own methods to assist clients in reducing individual suffering, each have been found to be efficacious at reducing urge-related behaviors (e.g., Zack et al., 2014).

Effectiveness of Third-wave Interventions

Behavioral therapy approaches suffer from negative consequences that are unlikely to occur when only utilizing mindfulness techniques. For example, suppression is difficult to continue for long periods; after an individual stops utilizing suppression skills, urges and motivation for the urge-related behavior becomes stronger. There can also be an increase in negative affect occurring when utilizing behavioral and cognitive treatments. Overall, treatments utilizing acceptance and mindfulness skills may not decrease urges; however, they will decrease the intensity and duration of these thoughts, as well as the likelihood to engage in the behavior due to awareness and acceptance skills (Litvin et al., 2012). Therefore, the most beneficial intervention approaches to reduce these types of behaviors may be to teach clients mindfulness-based skills.

Due to difficulties with second-wave, CBT, interventions (e.g., rebound effects), therapists developed new treatment modalities. These interventions extend the focus of second-wave interventions to include mindfulness components (e.g., acceptance, awareness). Overall, these treatments, even those just focusing on mindfulness, are effective at reducing urge-related behaviors (Korn, 1997).

Having greater mindfulness skills is effective at reducing substance use and mental health psychopathology. Mindfulness appears to play a large role in reducing urge-related behaviors and improving mental health symptoms (e.g., Dakwar, Mariani, & Levin, 2011; Fruzzetti & Erikson, 2010). For example, individuals with lower mindfulness scores are more likely to use

substances than individuals with higher mindfulness scores; individuals with lower mindfulness scores are also more likely to be poly-substance users than mono-substance users (Dakwar et al., 2012). In college students, lower mindfulness scores are associated with a greater likelihood to engage in lifetime drinking and marijuana use (Robinson, Ladd, & Anderson, 2014). During mindfulness and meditation practices, an increase in dopamine release occurs, demonstrating that the individual had reductions in negative affect and a reduced desire to engage in negative behaviors (Witkiewitz et al., 2005). Increasing an individual's mindfulness skills decreases pain, stress, anxiety, depression, and eating disorder behaviors (Fruzzetti & Erikson, 2010). Overall, utilizing these forms of treatment will be more effective at reducing the impact of negative thoughts (e.g., no rebound effects) and decreasing problem behaviors due to a change in thinking patterns.

Acceptance alone, or general mindfulness based intervention techniques (i.e., focusing on acceptance, awareness, non-judgment, presence within the moment), reduces alcohol and drug use behaviors (e.g., Brewer et al., 2014; Ostafin & Marlatt, 2008). When reading a script focusing on acceptance of tobacco cravings, participants reported experiencing less intense cravings than those who were provided a script focusing on suppression of these feelings (Litvin et al., 2012). Acceptance of thoughts is a moderator between automatic thoughts and drinking motivations or hazardous drinking in college students (Ostafin & Marlatt, 2008). Mindfulness based treatments, in general, have been shown to decrease a client's likelihood to use alcohol, drugs, or tobacco (Black, 2012; Brewer et al., 2014). In a study focusing on mindfulness training (e.g., teaching self-monitoring, awareness of triggers, relapse prevention, acceptance) a sample of adult smokers demonstrated a greater decrease in smoking behaviors than those in the behavioral intervention (e.g., identify triggers, behavioral modification, stress reduction) and

maintained these gains through follow-up (i.e., 6 weeks, 12 weeks, and 17 weeks; Brewer et al., 2011). In a sample of predominantly female substance using adults with various psychiatric disorders (e.g., depression, PTSD) who were seeking treatment for binge eating disorder, a mindfulness based treatment produced reductions in objectively reported binge eating episodes, weight scores, alcohol and drug use scores, and Beck Depression Inventory Scores (Courbasson et al., 2011).

ACT is efficacious in reducing urge-related behavior in both adolescents and young adults. For example, ACT demonstrated a small effect size when treating adolescents with depression, chronic pain, and risky sexual behavior (Zack et al., 2014); ACT was also effective in reducing symptoms of Anorexia Nervosa and externalizing disorder (e.g., oppositional defiant disorder, conduct disorder) behaviors in adolescents (Zack et al., 2014). ACT is more effective at increasing pain tolerance in college students when compared to a CBT thought suppression intervention (Korn, 1997) or a control group (e.g., imagery, breathing, body focusing; Hayes et al., 1999). Nevertheless, ACT has greater empirical support for reducing mental health symptoms and urge-related behaviors in adults than youth and adolescents (Zack et al., 2014); therefore, ACT may be more effective with individuals who have higher cognitive functioning levels.

DBT, as an acceptance and mindfulness intervention, is also an effective treatment for reducing various urge-related behaviors in adolescents and adults. DBT reduced deliberate self-harm behaviors (i.e., self-harm behaviors, urges to self-harm, non-suicidal self-injury), disordered eating behaviors, and oppositional defiant behaviors in adolescent samples (Zack et al., 2014). DBT was also effective at reducing urges for deliberate self-harm behaviors (i.e., urges to self-harm, Zack et al., 2014). DBT reduced behavioral engagement and urges for

trichotillomania with an adult both following treatment and 6-months after treatment (Keuthen & Sprich, 2011). In a forensic population, DBT assisted clients in monitoring their urge-related behaviors and creating prevention plans to reduce recidivism; it also helped clients develop empathy for their victims (McCann & Ball, 2000).

MI is effective at reducing urge-related behaviors in adults, specifically reducing substance use. In adult synthetic cannabis users, MI reduced depression and anxiety scores, produced abstinence from cannabis use, and decreased alcohol use 5-months after treatment (Dietz & Dunn, 2014). A MI treatment reduced alcohol consumption and the negative consequences from alcohol use in college students; these effects lasted through a 4-year follow-up (Pedrelli et al., 2013). After MI, a college student reduced her alcohol use by 50% and reported less depression symptoms (Pedrelli et al., 2013). In another case study, MI decreased deliberate self-harm behaviors in a young adult and decreased her urges to engage in deliberate self-harm behavior (Kress & Hoffman, 2008).

MBRP is effective at reducing substance use urges and mental health symptoms in adults. MBRP in adults was more effective at reducing cravings during both depressed and positive mood states than treatment as usual (i.e., 12 step program and psychoeducation); these craving reductions continued through follow-up and predicted a lower likelihood to relapse (Witkiewitz et al., 2013). MBRP increases mindfulness skills more than treatment as usual (e.g., acceptance, awareness, non-judgment; Witkiewitz et al., 2013) possibly leading to a reduction in cravings and relapse rates. MBRP does decrease mental health pathology as well; however, contradictory findings exist on MBRP's effect on urge reduction. MBRP was shown to decrease depression scores and increase perceptions of negative expectancies from substance use in a sample of adult males in a substance abuse treatment program; however, MBRP was not different from treatment

as usual in reducing positive expectancies from substance use or increasing self-efficacy scores for avoiding substance use (Lee et al., 2011). In a sample of adults with an alcohol dependence diagnosis, MBRP was shown to reduce mental health symptom severity, stress, alcohol use craving scores, and drinking behavior; however, at a 16-week follow-up participants reported an increase in their drinking habits (i.e., number of heavy drinking days, number of days abstinent; Zgierska et al., 2008). Consequently, after the intervention concluded follow-up booster sessions may have been necessary. MBRP decreased negative affect and increased positive affect in college student drinkers who scored in the at-risk range for consequences from drinking; however, participants did not report a reduction in urges to drink (Vinci et al., 2014). Similar to MBRP, a mindfulness-based program focused on relapse, (i.e., Mindfulness Training for Smoking), produced a greater number of smoking abstinent days after two weeks compared to a non-directive daily walking intervention (i.e., walking silently alone without music or a goal destination, weekly group instructions on walking, and weekly discussions with other smokers; Davis et al., 2013).

MBSR has also been shown to reduce negative psychopathology symptoms and substance use behaviors. MBSR was taught to adult smokers and 10 out of the 18 were able to obtain abstinence after 6-weeks; MBSR also reduced their mental health concerns demonstrated by SCLR-90 and decreased stress scores (Davis et al., 2007). MBSR decreased depressive and anxiety symptoms following an 8-week modified MBSR treatment program in a group of teenagers (Biegel et al., 2009). A MBSR and cognitive therapy program provided reductions in mental health concerns (e.g., worry, mental health distress), sleepiness, and substance use after 12-months in adolescents using marijuana and alcohol (Bootzin & Stevens, 2005); however, participants did not demonstrate substance use behavior improvements during treatment or

immediately after MBSR training. Consequently, the delay may be due to mediating factors not measured (Bootzin & Stevens, 2005). MBSR has also been found to enhance psychological well-being in samples of youth (Zack et al., 2014).

Limited research on MBCT is available; however, MBCT is effective at reducing psychopathology symptoms. MBCT reduced depression symptoms in adults by changing depressive cognitive patterns (Zack et al., 2014). MBCT increased attention scores immediately after the intervention and at an 8-week follow-up in a sample of 14 adolescents with externalizing behaviors; nevertheless, MBCT did not provide significant improvements on behaviors, goals, subjective happiness, or mindful awareness (Bogels, Hoogstad, van Dun, de Schutter, & Restifo, 2008). MBCT provided a reduction in anxiety and inattention in adolescents compared to those clients on a waitlist control; however, following the intervention there was no difference in behavioral problems (Zack et al., 2014). Overall, although MBCT does demonstrate effective reductions in mood symptomatology, it appears that more evaluations on this treatment modality are necessary.

VM and various mindfulness meditation techniques reduce mental health symptoms and substance use behaviors. In a group of inmates who used alcohol and substances before their arrest, a VM intervention reduced substance use and substance use consequence perceptions, improved reported ability for locus of control related to drinking, and reduced thought suppression (Witkiewitz et al., 2005). VM reduced substance use, and problems related to substance use, in a group of incarcerated adults (Bowen et al., 2006). A mindfulness meditation intervention utilized in conjunction with MI with young adult women was found to decrease reported marijuana use both during the intervention and at follow-up compared to a control group condition; however, there were no differences between the groups for abstinence at

follow-up (i.e., one month and three months; de Dios et al., 2012). In a group of young adult smokers and concurrent binge drinkers, those in a meditation group had a significantly reduced number of days smoking and drinking compared to those in a control group (Davis et al., 2013). In a group of male inmates taught mindfulness meditation, participants reported fewer impulses after treatment (Himelstein, Saul, Garcia-Romeu, & Pinedo, 2014). Mindfulness meditation substantially decreased externalizing behaviors (e.g., aggressive acts) in a sample of three teens with conduct disorder and each child was able to complete school with no threat of expulsion (Singh et al., 2007).

Overall, it appears that mindfulness based interventions can be effective at reducing psychopathology and urge-related symptoms. In a meta-analysis of the effectiveness of mindfulness meditation, participation in mindfulness therapies reduced substance use or prevented relapse with effect sizes ranging from small to large (Zgierska et al., 2009). The majority of research examined these interventions' effectiveness at reducing only substance use related behaviors (e.g., Dennis et al., 2004; Pedrelli et al., 2013). However, it also appears that treatments with a mindfulness and acceptance component have generalized effects. For example, these treatments have been shown to be efficacious in reducing substance use (Pedrelli et al., 2013), deliberate self-harm (Kress & Hoffman, 2008), trichotillomania (Keuthen & Sprich, 2011), aggressive behaviors (McCann & Ball, 2000), and depression (Zack et al., 2014). Additionally, MBRP and MBSR reduce mental health concerns (Biegel et al., 2009; Zgierska et al., 2008), as well as reduce cravings and urges for urge-related behaviors (Zgierska et al., 2008). VM and other mediation-based practices decrease urge-related behaviors (Bowen et al., 2006), therefore demonstrating the effectiveness of these interventions with urge-related behaviors.

Surf the Urge Intervention

Although mindfulness interventions are effective, many of these interventions are extremely lengthy and time consuming (e.g., Witkiewitz et al., 2013; Zgierska et al., 2008). Many of the mindfulness interventions, such as MBSR, include six to eight weeks of training. Consequently, reductions in extremely high-risk behaviors may not occur for several weeks, placing serious risk on the client's mental and physical health (e.g., overdose, infection, death) in the interim.

Therefore, interventionists developed a brief mindfulness intervention, Surf the Urge, to reduce substance use behaviors. The Surf the Urge intervention discussed by Bowen and Marlatt (2009) teaches clients to be aware of and accept their feelings, thoughts, and sensations in a non-judgmental manner. Similar to mindfulness practices, clients learn to remain present within the moment, become aware of their urges, and focus on accepting thoughts and feelings rather than suppressing or changing them (Bowen, 2008). Surf the Urge intervention utilizes visual imagery to assist clients in utilizing more acceptance skills (i.e., accepting feelings and thoughts rather than changing them). Additionally, within visual imagery the client imagines his urges as waves within the ocean and then imagines surfing the waves (e.g., ride out the urges, overcome the urges). This wave can fluctuate in intensity and the client is instructed to imagine riding the wave as it naturally increases and decreases in size rather than fighting the wave or giving into the ocean. Training takes approximately 10 to 20 minutes.

Fruzzetti and Erikson (2010) report that some Surf the Urge interventions also provide psychoeducation. Clients learn that urges will not last forever, similar to waves, always flowing back into the ocean; clients are also taught information about reinforcing urges. The interventionist explains that if clients do not reinforce urges (e.g., do not smoke when an urge to

smoke arises) they will eventual subside; however, reinforcing urges (smoke when an urge to smoke arises) will produce stronger urges. Consequently, therapists communicate the idea that when an individual gives in to his or her urges he or she is strengthening his or her addictive behaviors. However, the therapist also expresses that when the individual does not act on his or her urges, he or she is calming the ocean and conditioning acceptance and self-efficacy. Emphasis is placed on the belief that clients have the choice to refrain from engaging in urge-related behaviors (Bowen, 2008).

Only one study (a dissertation subsequently published) has been conducted on just the Surf the Urge intervention. Bowen (2008, Bowen & Marlatt, 2009) demonstrated that Surf the Urge reduced smoking behaviors in adult cigarette smokers. A sample of college students, provided with a cue exposure script to increase their urges to smoke cigarettes (e.g., open a pack of cigarettes, bring the cigarette to his or her lips, place the cigarette to his or her mouth but do not light it), were randomized to either the Surf the Urge condition or a control group. Individuals in the control group were informed to utilize previously effective strategies. Compared to the control group, individuals in the Surf the Urge intervention group had a significant reduction in the number of cigarettes smoked seven days following the intervention, demonstrating a medium to large effect size ($d = 0.64$). This difference remained significant after controlling for differences in gender and self-efficacy scores.

Although the Surf the Urge intervention was found to reduce the likelihood that individuals smoked, it was not found to reduce the intensity of urges to smoke at any assessment point (i.e., immediately after intervention, seven day follow-up). However, individuals who were more likely to suppress their thoughts actually experienced greater urges. Furthermore, negative affect predicted urge intensity only in the control group but not in the Surf the Urge group.

Overall, evidence exists demonstrating the effectiveness of the Surf the Urge intervention for reducing smoking behavior among college students. The Surf the Urge intervention reduced smoking behavior without influencing urge intensity. Therefore, it appears that this mindfulness intervention may be effective at reducing urge-related behaviors within a shorter duration than other mindfulness treatments. Nevertheless, research has only examined this intervention's effectiveness with one sample and one urge-related behavior; consequently, it is necessary to determine if it is efficacious in other samples and with other urge-related behaviors

Consumer Satisfaction of Clinical Interventions

Although mindfulness interventions are effective, it is imperative to determine if clients like these interventions. If clients do not like the intervention provided to them, there is a reduced likelihood that they will continue to use them (Duncan, Sparks, Miller, Bohanske, & Claud, 2006) and therefore improvement and reduction of urge-related behaviors is less likely. To assess client's enjoyment of specific clinical interventions, therapists utilize consumer satisfaction measures or client feedback tools (Duncan et al., 2006; Reese, Norsworthy, & Rowlands, 2009).

Obtaining feedback from clients about interventions assists both therapists and clients to obtain outcomes that are more beneficial. When clients provide systematic outcome feedback to therapists, productivity within the sessions increased and number of dropouts decreased (Duncan et al., 2006; Reese et al., 2009). For example, Schuman, Slone, Reese, and Duncan (2014) found that utilizing a feedback measure, increased patient stay throughout the duration of treatment (i.e., 5 sessions) in 23% more clients and produced a clinically significant mental health change (e.g., reduction in symptoms) in 13% of clients. Feedback measures were helpful to all clients; however, they were most beneficial (e.g., greatest reduction in self-reported distress, improved

interpersonal relationships) to clients that the therapists predicted would not obtain success in treatment. Additionally, providing clients feedback based on their own report of therapeutic progress (e.g., weekly assessment of how client feels, diary cards) provides better outcomes (e.g., reduction in mental health symptoms, higher reported self-esteem, better interpersonal relationships) for treatment and gives opportunities for transparent conversations about treatment. For example, when clients are able to report negative feelings about the therapist, or when they disagree with their therapist, they were able to maintain better interpersonal relationships (Schuman et al., 2014; Anker, Duncan, & Sparks, 2009).

Anker, Duncan, and Sparks (2009) reported that when clients utilize feedback outcome measures significant change within therapy happens more quickly. Clients who utilized feedback measures throughout therapy were found to reach critically significant change four times faster than those individuals that did not utilize these measures. In a couples therapy group, 47.6% of the individuals who utilized feedback measures at a 6-month follow-up reported significant changes in their relationships compared to 18.8% of those couples that did not use feedback measures. Additionally, those utilizing feedback measures had a 46% lower divorce rate and these changes occurred in significantly fewer sessions than for individuals within the control group. Support for the findings from Anker and colleagues (2009) is demonstrated in other studies. For example, individuals in a feedback condition reported significantly more treatment gains (e.g., reduction on problems that led them to therapy) and less deterioration than those that were not in the treatment condition (Reese et al., 2009). Nine out of 10 therapists reported that their clients made significant mental health improvements (e.g., decrease in mental health symptoms, improvement in interpersonal relationships) when they utilized client feedback measures (e.g., personal wellbeing, social relationships, therapeutic relationship); these clients

agreed with the therapists, reporting similar improvements in their mental health when these measures were employed (Anker, Duncan, & Sparks, 2009). Feedback measure scores correlate with client's self-reported symptoms and therapists' reports of client's symptomatology (Attkisson & Zwick, 1982).

Utilizing client feedback also improves clinical rapport. Sundet (2012) found that therapists that utilized client feedback reported sessions as being more fun, exciting, and safe. Additionally, utilizing client feedback provides an opportunity to mend therapeutic ruptures, reduce the processes of no change, and hear clients when they feel mistreated. Clients who utilized feedback tools reported that they had a better working relationship with their clinician and felt a stronger level of commitment to therapy (Cunningham, Duffee, Huang, Steinke, & Naccarato, 2009). Utilizing these measures increases rapport between the therapist and client, increases client motivation, and improves the working alliance between the two individuals (e.g., client collaboration and compliance; Cunningham et al., 2009) as well.

In general, consumer satisfaction measures assist the client in therapy and improve the therapist's ability to provide effective intervention. Measures that assess client feedback have been shown to significantly improve a client's mental health more rapidly than when these tools are not utilized (Duncan et al., 2006) and they have also been shown to improve therapeutic rapport (Cunningham et al., 2009; Sundet, 2012). Consequently, it is necessary to utilize these measures when conducting therapy, specifically when conducting a new form of treatment to determine if the treatment is beneficial, efficacious, and favorably perceived by the client.

CHAPTER 3
METHODOLOGY

Participants

Participants included 35 adolescent and young adult undergraduate students at the University of Nevada, Las Vegas (UNLV) completing lower division psychology course research requirements; these individuals were accessed through the psychology department's SONA system. Two additional participants were recruited from The Partnerships for Research, Assessment, Counseling, Therapy, and Innovative Clinical Education (The PRACTICE) at UNLV. The PRACTICE is a university department, community-based, mental health clinic. Clinicians are graduate students obtaining their degrees in clinical psychology, social work, school psychology, couples and family therapy, or mental health counseling. Clients at The PRACTICE include various individuals from the Las Vegas community who are typically of lower or middle socioeconomic status, as The PRACTICE provides sliding scale services. Both of the individuals recruited from The PRACTICE were current clients. This led to a total sample of 36 participants.

Participants were required to have engaged in (or experienced urges for) an urge-related behavior within the week before the consent meeting, as well as be between the ages of 14 and 24. This age restriction ensured that the findings were as representative of an adolescent sample as possible, as research demonstrates that risk behaviors (Santelli, Brener, Lowry, Bhatt, & Zabin, 1998; Windle, 2003) or risk perceptions (Johnson, McCaul, and Klein, 2002) are similar in adolescence and young adults.

The Co-Investigator (Dr. Lefforge) assisted in recruiting participants through The PRACTICE by examining the current client list and the waitlist, as well as incoming clients.

Names and phone numbers of individuals who met the age range restriction and had reported urge-related behaviors were provided to me. I then contacted the individual and read them information about the study (e.g., purpose, inclusion criteria, procedures). A description of the study on the Sona System website included the same data as the information provided to participants recruited through The PRACTICE. During the consent procedure, all participants were asked if they engage in an urge-related behavior; this could include: alcohol use, drug use, tobacco use, deliberate self-harm behaviors, trichotillomania, aggressive behavior (e.g., punching someone), and self-induced vomiting (See Appendix II for complete list). Only individuals who experienced urges, or engage in an urge-related behavior, a minimum of one time per week were included. Furthermore, if the participant reported experiencing more than one urge, or engaging in more than one urge-related behavior, he/she was cued to focus on the urge, or behavior, that was most frequent. If the child was a minor, this inquiry was conducted without the parent present.

Individuals recruited via Sona Systems received course credits based on the amount of study participation they completed. Participants recruited from The PRACTICE were offered a monetary incentive based on the amount of participation they completed in the study (e.g., \$5 for completing each weekly assessment). Overall, if they completed all required parts of the study, they could obtain a payment of \$50. The direct benefit they may receive from additional contact with a trained treatment provider was the only incentive received by all other participants.

Participants were predominately female ($N = 24$; 67%) with a mean age of 19.81 years ($SD = 1.75$). Participants identified as Caucasian ($N = 15$; 42%), Asian American ($N = 7$; 19%), Hispanic ($N = 6$; 17%), African American ($N = 4$; 11%), multiracial ($N = 3$; 8%), and other (i.e., Israeli; $N = 1$; 3%). Half of the participants reported that they were currently in a romantic

relationship ($N = 18$; 50%) with two-thirds of those individuals reporting that their partner does not engage in the same urge-related behavior ($N = 12$; 67%). Three participants (8%; including the two recruited from The PRACTICE) reported that they were currently receiving mental health services.

Participants reported various urge-related behaviors; however, this study only collected data related to their most frequently engaged in urge-related behavior. The highest frequency reported urge-related behavior included alcohol ($N = 13$; 36%) and marijuana ($N = 5$; 14%) use. See Table 1 in Appendix V for additional statistics on the frequency of individuals engaging in other (e.g., deliberate self-harm) urge-related behaviors.

Literature on randomized control trials report that an intention-to-treat analysis is the preferred method for data in studies evaluating intervention effectiveness (Herman, Botser, Tenebaum, & Checkick, 2009; Hollis & Campbell, 1999). Consequently, this method was utilized in the current study. An intent-to-treat analysis assists in ensuring that the intervention groups were analyzed exactly how participants were randomized (CONSORT: Transparent Reporting of Trials, n.d.). Additionally, this assists the researcher in remaining unbiased, and not overestimating, the reported effectiveness of the treatment. Intent-to-treat also maintains the power of the study by not reducing the sample size due to dropouts or noncompliance of participants (Gupta, 2011). To ensure that data from participants who drop out of the study could be utilized in future analyses, a last observation carried over data procedure was conducted.

Measures

There were 7 measures utilized in this study. See Appendix IV for each of the full measures. See Table 2 in Appendix V regarding which measures were provided at what points during the six week assessment schedule.

Pre-Intervention Assessment Measures

Demographics. A demographic questionnaire was included to assess how individual demographic characteristics relate to changes in urge-related behaviors. Individuals reported their gender, age, and ethnicity. Participants also indicated if they were currently receiving psychological services; if participants answered yes, they reported the location (e.g., The PRACTICE). Involvement in a romantic relationship was also determined; if the participant had a significant other, a question of whether their partner engages in the same urge-related behavior was included.

Mindfulness. The Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) assessed mindfulness skills. This self-report analysis of trait mindfulness consists of 39 items based on a 5-point Likert scales, ranging from 1 (Never or Very Rarely True) to 5 (Very Often or Always True). Questions assess five factors of mindfulness, including observing, describing, acting with awareness, non-judging of inner experiences, and non-reactivity to inner experiences. Examples of questions include, “I’m good at finding words to describe my feelings,” “I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted,” and “I watch my feelings without getting lost in them.” Possible scores on this measure can range from 39 to 195, with each subscale’s score ranging from 7 to 40. To ease the interpretation of scales that have varying numbers of items, the present study used mean total score and subscale scores. Higher scores on both the total scale and each subscale indicate a higher level of mindfulness.

This measure is one of the most widely utilized scales to assess trait mindfulness. The FFMQ demonstrates good face validity (Baer et al., 2006), predictive validity in its ability to predict psychological symptoms (Baer et al., 2006; Baer, et al., 2008), convergent validity (e.g.,

emotional intelligence, openness to experience; Baer et al., 2006), and discriminant validity (e.g., thought suppression, alexithymia; Baer et al., 2006). The FFMQ demonstrated acceptable to good internal consistency ($\alpha = .75 - .91$; Baer, Walsh, & Lykins, 2009)

Personality. The Multidimensional Personality Questionnaire-Brief Form (MPQ-BF; Patrick, Curtin, & Tellegen, 2002) evaluated personality characteristics. This self-report measure of personality consists of 155 True-False, items. This measure assesses 11 primary subscales of personality, with 12 items each, an Unlikely Virtues subscale that is 14 items, and 9 additional validity items (i.e., VRIN, TRIN). The subscales include: Wellbeing, Social Potency, Achievement, Social Closeness, Stress Reaction, Alienation, Aggression, Control, Harm Avoidance, Traditionalism, and Absorption. Examples of questions include, “I enjoy being in the spotlight.,” “My mood often goes up and down.,” and “When someone hurts me I try to get even.” *T* scores for each primary trait scale were used in all analyses. This measure is one of the most widely employed scales assessing personality. The MPQ-BF demonstrates acceptable internal consistency ($\alpha = .75 - .84$; Patrick et al., 2002). Correlations between the Multidimensional Personality Questionnaire and the MPQ-BF are strong, ranging from .92 to .98 (Patrick et al., 2002). The MPQ-BF has shown good convergent validity (e.g., Social Potency with Sociability subscale of the Emotionality-Activity-Sociability Temperament Survey; Patrick et al., 2002) and discriminant validity (e.g., Wellbeing with Manifest Anxiety Scale; Patrick et al., 2002). The MPQ-BF has good predictive and concurrent validity (Patrick et al., 2002) as well.

Intelligence. The National Adult Reading Test-Revised (NART-R; Nelson, 1982) assessed intelligence. This measure is comprised of a list of 50 words that increase in difficulty as the assessment progresses. The participant was required to read the list aloud, and the researcher recorded the number of errors made. This assessment evaluates the individual’s

intelligence (i.e., crystallized intelligence) based on his ability to correctly read and pronounce these 50 words. This measure was provided to determine if intelligence has an effect on an individual's ability to engage in mindfulness. Possible scores on this measure range from 0 to 50, with higher scores indicating fewer errors. The present study utilized total scale scores.

The unrevised National Adult Reading Test (NART) has good internal consistency ($\alpha = .90$), inter-rater reliability ($r = .96$), and test-retest reliability ($r = .98$; Baker-Collo et al., 2008). It also demonstrates good convergent validity with the WAIS/WAIS-R IQ quotients (Bright, Jaldow, & Kopeland, 2002). The NART shows good predictive validity with the WAIS full scale IQ, Verbal IQ, and performance IQ (Nelson, 1982) as well. Nonetheless, it is important to note that the NART may not be a sufficient assessment of intelligence in individuals whose second language is English or have less exposure to the traditional western (e.g., America, England) educational system. Consequently, when utilizing this measure as the only tool to evaluate intelligence in participants caution should be utilized.

Risk Taking. The Domain Specific Risk Taking Scale (DOSPERT; Blais & Weber, 2006) assessed risk taking. This measure consists of 30 items based on three 7-point Likert scales. The first scale asks participants how likely they are to engage in the behavior ranging from 1 (*extremely unlikely*) to 7 (*extremely likely*). The participant was then asked how risky that behavior appeared ranging from 1 (*not at all risky*) to 7 (*extremely risky*) and what the benefits were of that behavior from 1 (*no benefits at all*) to 7 (*great benefits*). This self-report measure assesses the likelihood that a person will engage in five domains of risk behaviors (i.e., ethical, financial, health and safety, recreational, and social), as well as how risky the person perceives these behaviors to be and what benefits the person perceives will come from these behaviors. The scale is further broken into three subscales including: risk taking, risk perception, and risk

benefits. Examples of questions include “Going down a ski run that is beyond your ability,” “Starting a new career in your mid-thirties,” and “Engaging in unprotected sex.” Possible sum scores on this measure range from 30 to 210, with each subscale’s sum score ranging from 6 to 42. To ease interpretation, the present study used both total DOSPERT and mean scale scores (i.e., risk taking and risk attitudes). Higher scores on the risk taking and risk benefits subscales indicate greater risk taking behavior and risk attitudes, while lower scores on the risk perception subscale indicates the same information.

The DOSPERT demonstrates acceptable internal consistency, with risk taking scores ranging from .71 to .86 and risk attitude scores ranging from .74 to .83 (Blais & Weber, 2006). An assessment of the original DOSPERT (i.e., 40 items long) indicates that it has acceptable to good test-retest reliability ($r = .42 - .80$) after one month, with the lowest test-retest reliability representing scores on the financial risk attitude subscale (Weber, Blais, & Betz, 2002). The original DOSPERT has good discriminant and convergent validity, as well as concurrent validity (Weber et al., 2002).

Impulsivity. The Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency Impulsive Behavior Scale (UPPS-P; Whiteside & Lynam, 2001) evaluated participant impulsivity. Specifically, this measure assesses personality characteristics that lead to various impulsive like behaviors (e.g., Sensation Seeking’s relationship with Extraversion). This measure consists of 59 items based on a 4-point Likert scales, ranging from 1 (*Agree Strongly*) to 4 (*Disagree Strongly*). This measure assesses impulsivity based on dimensions of the Five Factor Model of Personality and includes five sub-scales (i.e., Negative Urgency, Positive Urgency, [lack of] Premeditation, Sensation Seeking, and [lack of] Perseverance). Examples of questions include “I have trouble controlling my impulses,” “When I

am very happy, I can't seem to stop myself from doing things that can have bad consequences,” and “Unfinished tasks really bother me.” Possible sum scores on this measure can range from 54 to 216, with subscale sum scores ranging from 10 to 56. To ease interpretation, the present study used mean scores and mean sub-scale scores. Higher scores on the total measure and its subscales indicate greater impulsivity.

The UPPS-P demonstrates good internal consistency (i.e., $\alpha = .85-.93$; Carlson, Prithchard, & Dominelli, 2013). The UPPS-P demonstrates good discriminate validity, predicting group membership between a control group and those in a psychopathy group (Whiteside, Lynam, Miller, & Reynolds, 2005). The UPPS-P also shows good construct validity, as (lack of) Premeditation and Sensation Seeking are associated with disinhibition (Carlson et al., 2013). Additionally, reward sensitivity correlates with each of the sub-scales of the UPPS-P (Carlson et al., 2013).

Change Assessment Measures

Administration of the following measures occurred every week, for six weeks, and assessed psychological change through the duration of the study.

Wellbeing. The Depression, Anxiety, and Stress Scale-21 (DASS-21: Lovibond & Lovibond, 1995) evaluated participant wellbeing. This measure consists of 21 items based on a 4-point Likert scales, ranging from zero (*Never or Did Not Apply to Me at All*) to 3 (*Almost Always or Applied to Me Very Much, or Most of the Time*). This measure assesses wellbeing based on the three primary domains of a person's life: depression, anxiety, and stress; consequently, breaking this assessment into three subscales. Each subscale measures various domains of that construct; for example, the depression scale includes an assessment of dysphoria, hopelessness, and anhedonia. Examples of questions from the three subscales include “I

couldn't seem to experience any positive feeling at all," "I was close to panic," and "I found it difficult to relax." Possible sum scores on this measure range from 0 to 63, with each subscale's score ranging from 0 to 21. Authors have indicated severity index scores for each subscale; for example, a summed item score of 7 to 10 on the depression subscale indicates a moderate score (corresponding to a mean score of 1 to 1.43 across all items on the depression scale). To clarify interpretation, the present study used both mean DASS-21 total scores and mean subscale scores; thus, ranges for both total scale and subscale scores were from 0 to 3. Higher scores on the total measure, and its subscales, indicate reduced levels of wellbeing (e.g., greater depression).

The DASS-21 demonstrates good internal consistency ($\alpha = .81 - .88$; Osman et al., 2012). The DASS-21 has also demonstrated good convergent validity with other mood assessment measures (e.g., Mood and Anxiety Symptom Questionnaire; Antony, Bieling, Cox, Enns, & Swinson, 1998; Ng. et al., 2007; Osman et al., 2012). The DASS-21 has demonstrated concurrent validity as well (Antony et al., 1998). The DASS-21 also has predictive validity (Ng. et al., 2007).

Urges. A newly developed measure described throughout as the Urges for Urge-Related Behavior Questionnaire (UQ) assessed urges for urge-related behavior. Modifying two widely used valid and reliable measures created this measure. These measures include the extensively utilized Alcohol Urge Questionnaire (AUQ; Bohn, Krahn, Staehler, 1995) and Cocaine Craving Questionnaire (CCQ; Sussner et al., 2006). These measures have been shown to have test-retest-reliability (e.g., AUQ, $r = .78$ after 1 week; Bohn et al., 1995), internal consistency (AUQ $\alpha = .91$, Bohn et al., 1995; CCQ $\alpha = .90$, Sussner et al., 2006), construct validity (AUQ, Bohn et al., 1995; CCQ, Sussner et al., 2006), concurrent validity (CCQ, Sussner et al., 2006), and convergent validity (AUQ, Bohn et al., 1995). These two measures ask similar questions such as

“I want cocaine/alcohol so bad I can almost taste it,” or “nothing would be better than having a drink/using coke right now.”

The UQ left “a drink” and “cocaine/coke” blank. This allowed me to fill in the blank with the necessary urge-related behavior (e.g., alcohol, illicit substance, cutting) for each participant assessed. There were 8 items included within this measure. A slight modification of this measure’s response scale occurred. Rather than a check mark along a line with a 0 (*Strongly Agree*) to 100 (*Strongly Disagree*) based on the AUQ and CCQ, responses were based on a 7-point Likert Scales ranging from 0 (*Strongly Agree*) to 7 (*Strongly Disagree*). This measure assessed urges for numerous urge-related behaviors. Possible item sum scores on this measure range from 0 to 56. To ease interpretation, item mean total scores were used. Higher scores on the measure indicate greater urges for urge-related behaviors.

Urge-Related Behavior. A newly developed measure described throughout as the Urge-Related Behavior Engagement Questionnaire (URB) assessed how often a participant engaged in urge-related behaviors. The measure was developed by modifying similar approaches utilized in previous research assessing whether mindfulness interventions reduced an urge-related behavior (e.g., smoking cessation; Bowen, 2008; Davis et al., 2013). Participants answered, “How many times have you engaged in [urge-related behavior] during the past week?” I filled in the blank (i.e., [urge-related behavior]) with the participant’s unique urge-related behavior (e.g., alcohol use, illicit drug use, deliberate self-harm) disclosed during the consent procedure. This ensured that each participant was asked the same question about his or her unique urge-related behavior. Responses were based on a 6-point Likert scale. The response options included 0) not at all, 1) one to two times, 2) three to four times, 3) once per day for all 7 days, 4) more than once per day, but not for all 7 days, 5) more than once per day, on all 7 days. I used a similar response

procedure in my thesis (Wrzeciona, 2012). Higher scores on the measure indicate greater engagement in urge-related behaviors.

Post-Intervention Assessment Measures

Previously utilized intervention measures were re-administered at the end of the assessment period to further assess change. These included: FFMQ, DOSPERT, UPPS-P, DASS-21, URB, and UQ. An assessment of intervention satisfaction was also administered during this time.

Intervention Satisfaction. The Client Satisfaction Questionnaire-8 (CSQ-8: Larsen, Attkisson, Hargreaves, & Nguyen, 1979) evaluated intervention satisfaction. This measure consists of 8 items based on a 4-point Likert scales. Each item has a different range 4-point Likert scale response. For example, ranging from 1 (*Poor*) to 4 (*Excellent*) or 1 (*No, Definitely*) to 4 (*Yes, Definitely*). This measure assessed how satisfied a client was with treatment, including whether the treatment provided was similar to what the participant expected or wanted. Questions also asked participants how they would rate the services they received and their overall satisfaction with the intervention. Possible scores on this measure range from 8 to 32. For ease of interpretation, the present study used mean item total CSQ-8 scores. Higher scores on the measure indicate greater satisfaction with the intervention provided.

The CSQ-8 demonstrates good internal consistency ($\alpha = .93$; Attkisson & Zwick, 1982). The CSQ-8 also demonstrates good concurrent validity, indicating that greater symptom change indicates greater satisfaction with treatment (Attkisson & Zwick, 1982). It also has good convergent validity with behavioral outcome measures, such as number of sessions in one month and dropout (Attkisson & Zwick, 1982).

Procedure

Before any participants were seen, a training session was held with an additional therapist who agreed to provide the interventions; I held this training. A review of the interventions, as well as role-plays, occurred. The therapist learned when to administer the interventions and how to conduct adherence checks of her own work (e.g., check off intervention steps completed, sum number of steps completed). She was also informed that video of her performance administering the interventions would be reviewed for integrity. Instructions included directions to immediately end the interventions should the participant express a desire to discontinue participation in the study. This therapist was previously trained to provide counseling services, respond to crises, and adhere to professional ethics such as confidentiality. Due to scheduling conflicts, this therapist was never utilized and therefore I completed all of the intervention sessions.

Participants were recruited via UNLV's Partnership for Research, Assessment, Counseling, Therapy and Innovative Clinical Education clinic (The PRACTICE), as well as Sona Systems (i.e., psychology course credit requirement to engage in research studies). See Appendix I for a participant recruitment chart. The Co-Investigator assessed the current client list, as well as the waitlist, and provided me with names and phone numbers of individuals eligible for the study. I then contacted all clients at The PRACTICE who meet the age inclusion criteria (i.e., age 14 to 24) to determine their interest in participation. If the client was a minor, his or her parents were contacted. Recruitment included clients seen through The PRACTICE's tele-mental health clinic. A standardized procedure was utilized when participants, and their parents, obtained recruitment and engagement information. This included instructing participants on the study goals, involvement requirements, participation incentives (i.e., monetary compensation up to

\$50), and study inclusion requirements. If participants agreed to participate, I scheduled a 20 to 30 minute consent meeting at The PRACTICE.

Because a large portion (i.e., 60%) of the sample was not obtained within 60 days of the start of recruitment, a description of the study was also placed on Sona Systems. The same standardized information that was provided to The PRACTICE participants during the recruitment and engagement call was provided in this description. The only exception was that communication about participation incentive was modified to include information about obtaining Sona course credit, rather than monetary payment. If students wished to participate, they registered for a consent meeting with me at The PRACTICE via Sona Systems.

The consent procedure began once the participant arrived at The PRACTICE. Upon arrival, participants once again were provided study information (e.g., procedure, purpose) and asked about their engagement in an urge-related behavior. If they continued to demonstrate interest in participation, they were provided with consent forms. If the participant was a minor, they were provided with an assent to participate form and their parent(s) were provided with a parent permission form. Both parties had to consent to participate. If the minor's parents were divorced, only one parent's permission for participation was necessary; however, proof of custody was required before participation could begin. If the participant was over 18, he or she received a consent form. Because tele-mental health participants could not be seen in person, these participants were immediately provided with further information about the study (e.g., risks, benefits), asked if they engage in an urge-related behavior, and provided with engagement and recruitment information. If they desired to participate, they were then sent an email link to complete the consent forms. These participants then scheduled a phone meeting with me to confirm that the forms were completed properly and any questions were answered.

All consent meetings were conducted similarly, as I followed a consenting script (See Appendix III). The consenting session included two reminders of confidentiality, an inquiry about the participant's urge-related behavior, and a step-by-step review of the consent form. If the child was a minor, inquiries about urge-related behavior engagement were conducted without the presence of a parent. Participants were also told during the consent procedure that the study was examining the effectiveness of a brief Surf the Urge intervention. An additional statement was included that all participants were required to answer questions and discuss topics surrounding subjects that may make them uncomfortable.

Clients also completed the pre-assessment measures during the consent meeting. They completed each of these measures alone. Participants were informed that I would be in a pre-determined room in The PRACTICE if any questions arose. Pre-assessment measures included the UQ, URB, DOSPERT, UPPS-P, MPQ-BF, FFMQ, NART-R, and DASS-21.

During the consent meeting, as participants were completing the consent forms and pre-assessment measures, I randomly assigned them to either the 2-week or 4-week intervention group. Participants were quasi-randomly assigned via their participant identification number: Participants with odd identification numbers were assigned to the 2-week intervention group, and those with even identification numbers were assigned to the 4-week intervention group. This occurred during the consent procedure to ensure that participants were aware of the time of their intervention meeting. I conducted all intervention sessions. All appointments were scheduled within the 2- or 4-week period (i.e., Monday through Friday of the 2nd or 4th week after the consent meeting).

After participants completed the consent procedure and pre-assessment measures, they were sent home. Participants then completed the DASS-21, UQ, and URB each week until their

intervention meeting. Email or text message reminders were sent weekly to assist in completion of these measures.

Participants were sent a reminder email or text message to remind them of their intervention meeting 24 hours in advance. Upon arriving at their intervention meeting, participants were led to a private meeting room at The PRACTICE. For tele-mental health clinic participants, all sessions were held with each person in a private intervention room. The therapist was located at The PRACTICE and the client was located at a local high school in Elko County. All sessions were video recorded to ensure therapists provided the interventions properly; video recordings began before the client arrived in the room.

For the first 10 to 20 minutes, a cue exposure intervention was conducted. This included reading a script to increase the participant's desire to engage in the urge-related behavior, assessed feelings and thoughts the participant was experiencing, and determined how the participant typically feels when engaging in the urge-related behavior. See Appendix III for the Cue Exposure Protocol. This intervention assisted in ensuring that participants were experiencing a strong urge to engage in the urge-related behavior and consequently the Surf the Urge intervention could be utilized appropriately.

Next, the brief Surf the Urge mindfulness based intervention was conducted for approximately 10-20 minutes. This included instructing participants to accept feelings, sensations, or thoughts that arise in a mindful, nonjudgmental, fashion. They were instructed to pay close attention to whatever thoughts, sensations, or urges arose, and practice allowing themselves to be present without needing to change these feelings or get rid of them. It was suggested that they could experience whatever feelings arose and still make the choice to refrain from engaging in the urge-related behavior. They were given the suggestion to picture the urges

as waves growing in intensity, and then naturally subsiding, as the feeling will not last forever, similar to an itch that goes unscratched. They were also instructed to imagine riding these waves as they naturally ebb and flow. See Appendix III for the Surf the Urge Protocol. After the two interventions, participants were allowed to ask any questions and provided with resources for various outpatient services within the community (e.g., The PRACTICE, The Center for Individual and Family Counseling).

Immediately after the intervention session, and for the remaining weeks of the study (i.e., 4- or 2- weeks), participants received an email or text message to complete the DASS-21, UQ, and URB. On the final week of the study (i.e., 6), participants completed a post-assessment battery including the UQ, URB, DOSPERT, UPPS-P, MPQ-BF, FFMQ, DASS-21, and the CSQ-8. If a participant ever failed to complete a measure within 24 hours, a reminder message was sent. Reminder messages were sent every 24 hours for 96 hours.

Several strategies were employed to ensure treatment implementation integrity. I marked off steps completed on separate protocols for each participant. I also documented the techniques used during my sessions on these protocols. Finally, I reviewed the video of each session to ensure that at a minimum of 95% of the protocol steps were completed.

Statistical Plan

Initial randomization checks were conducted using independent samples t tests that compared personality and demographic variables between the intervention groups (2-week intervention group = 2, 4-week intervention group = 4). Dependent variables included demographic variables (i.e., age, gender, ethnicity, relationship status, obtaining other psychological intervention), the 11 personality subscales from the MBQ-BF, the risk attitudes and risk taking subscales from the DOSPERT, and three UPPS-P subscales of impulsivity related

to urge-related behaviors (i.e., negative urgency, positive urgency, and [lack of] premeditation). These three aspects of impulsivity relate to urge-related behavior. Both positive and negative affect influence urges and behavior engagement; additionally, lacking forethought about behavior engagement or consequences has also been linked to urge-related behaviors (Delfino et al., 2001; Drobles et al., 1994; Sussman & Sussman, 2011; Tiffany, 1990).

The change in UQ and URB scores from pretest to week 2 (prior to intervention for both groups) was also assessed to ensure groups did not differ in their rates of spontaneous remission of urge-related behavior or experience. Variables with group differences were included as independent variables in regression analyses assessing hypotheses one through four. These analyses ensured that differences between the two intervention groups did not influence changes in urge-related behaviors. The critical alpha level for all analyses was set at 0.05.

The efficacy of the Surf the Urge intervention was assessed with two mixed-model 2 (intervention Group) x 2 (Time: week of intervention, 2 weeks after intervention) ANOVAs in which Group served as the between-subjects factor and Time as the within-subjects factor. One ANOVA used URB scores as the dependent variable to assess changes in urge behavior; the other used UQ scores to assess changes in subjective urge levels. Planned comparisons were examined to determine whether each group showed significant changes in URB and UQ scores from the week of the intervention to two weeks after the intervention. This assessed whether the intervention altered levels of urge-related behavior and urge intensity in accordance with the first part of Hypothesis 1. The difference scores from these comparisons were used as outcome variables in subsequent analyses to test further hypotheses. A significant Group x Time interaction provided evidence for the second part of Hypothesis 1.

A multiple regression analysis was conducted to examine which personality and process variables influence changes in urge-related behavior. One included the difference between scores on the URB 2 weeks post-intervention minus those at the intervention as the outcome variable. Effect sizes were also be determined and reported. The following predictors were entered simultaneously for analyses of Hypotheses 2 through 4: intervention group, theoretically relevant baseline UPPS-P subscale scores (i.e., negative urgency, positive urgency, lack of premeditation), FFMQ baseline score, FFMQ change score (i.e., post-intervention FFMQ score minus baseline FFMQ score), DASS-21 subscale change scores (i.e., post-intervention DASS-21 subscale score minus baseline DASS-21 subscale score, resulting in three subscale scores), and CSQ-8 scores. These analyses demonstrated whether any of these variables predicted changes in urge-related behavior above and beyond other predictors.

To further assess Hypothesis 3, a linear regression analysis was conducted to determine if changes in mindfulness skills from pre- to post- assessment predicts higher satisfaction ratings of the Surf the Urge intervention. Participant satisfaction ratings of the intervention (i.e., CSQ-8 scores) was the outcome variable and mindfulness change scores (i.e., post-intervention FFMQ score minus baseline FFMQ score) was entered as a predictor. Alpha levels for significant were set at 0.05.

To assess compliance with Hypothesis 5, I assessed whether 95% of the steps were completed on the Cue Exposure and Surf the Urge checklists provided in Appendix III. I also assessed the percentage of steps I marked as completed in both the intervention session and video review. A 95% agreement rate for the Cue Exposure and Surf the Urge interventions must be obtained, for a total of 65 out of 68 and 35 out of 37 steps completed, respectively.

CHAPTER 4

RESULTS

Assumptions

Before analyzing the data, the distributions of each variable were assessed using Shapiro-Wilk tests and descriptive statistics, which are reported in Table 3 within Appendix V. Overall, participants reported a moderate frequency of urge-related behavior engagement, with most individuals endorsing urge-related behavior engagement one to two, or three to four, times a week. Data that had both skewness and kurtosis > 1 were modified through a natural logarithmic transformation to normalize score distributions in further statistical analyses. A natural logarithmic transformation was chosen to minimize the distortion of scores when transformed (Osborne, 2002).

Dependent variables. The distributions of urges were essentially normal at each time point ($W(35)s > .93, ps > .03$). In contrast, the score distributions for urge-related behaviors at each week violated the assumption of normality, $W(35)s < .84, ps < .001$. Additionally, skewness was > 1.4 and kurtosis was > 2 for each time point except the first, which had a skewness of 0.89. Because these score distributions were positively skewed with many outliers, I used a natural logarithmic transformation to normalize the distributions of urge related-behavior scores (by reducing their positive skewness and stabilizing their variance) before analyzing those data. However, though this transformation improved the normality of these variables, it failed to completely normalize the distributions of urge-related behavior frequencies, $W(35)s < .90, ps < .005$.

Specifically, after these transformations, the skewness and kurtosis for these variables were as follows: urge-related behavior frequency change from pre-assessment to second week of

the study (skewness = 1.07, kurtosis = 2.08), urge-related behavior frequency during the week of the intervention (skewness = 0.17, kurtosis = 1.50) and two weeks post-intervention (skewness = 0.18, kurtosis = -0.16), and the behavior frequency change from the date of the intervention session to two weeks later (skewness = 0.02, kurtosis = 1.06).

In all further analyses, the transformed data for the frequency of a participant's urge-related behaviors were used; this includes the dependent variables in analyses of the initial randomization checks and hypotheses one through four.

Predictors. The results from the Shapiro-Wilk assessment found that five of the subscales from the Multidimensional Personality Questionnaire – Brief Form (MPQ-BF), including social potency ($W(35) = 0.93, p = .03$), achievement ($W(35) = 0.91, p = .01$), social closeness ($W(35) = 0.93, p = .03$), aggression ($W(35) = 0.93, p = .02$), and absorption ($W(35) = 0.93, p = .02$) departed from normality. However, none of these variables had a $|\text{skewness}|$ greater than one or kurtosis greater than one, indicating that these departures did not substantially violate the assumptions of normality. Thus, I elected to analyze the untransformed scores for all predictor variables in the regressions testing Hypotheses 2-4. Additional variables that remained untransformed included DOSPERT subscale scores (i.e., Risk Taking, Risk Perception, and Risk Benefits), pre-test total scale mean FFMQ scores, UPPS-P subscale scores (i.e., Negative Urgency, Positive Urgency, Premeditation), and NART scores.

Initial Randomization Check

As reported in Table 4 through 6, within Appendix V, independent samples t tests were conducted across both intervention groups to compare their demographic characteristics; NART (intelligence) scores; MPQ (personality), UPPS-P (impulsivity), and DOSPERT (risk taking) scores; each week's urges; and each week's frequency of urge-related behavior engagement.

This ensured that both groups were equivalent on each of these variables and differences in future urge-related behavior or urges could be attributed to the Surf the Urge intervention effects, rather than these factors. The results indicated that there were no significant differences for any of these variables (with small to medium effect sizes, on average) between the two-week and four-week intervention groups: $|t|$ s ranged from 0.01 to 1.76 (mean $|t| = 0.70$), p s ranged from .088 to .992 (mean $p = .533$), and Hedges's $|g|$ s ranged from 0.00 to 0.58 (mean $|g| = 0.23$).

Results before Log Transformations

Hypotheses 1 through 4 were first assessed utilizing the untransformed urge data, as I had not prespecified any criteria for using log transformed scores instead of raw scores. In the two mixed-model 2 (intervention group) x 2 (time) ANOVAs testing Hypothesis 1, no effects were statistically significant using the untransformed scores. This included the main effect of time, $F(1,33) = 2.82, p = .10, \eta_p^2 = .08$, and interaction between time and intervention group, $F(1,33) = 0.05, p = .82, \eta_p^2 = .00$, when assessing urge-related behavior frequency. Furthermore, there was no significant main effect of time, $F(1,33) = 0.26, p = .61, \eta_p^2 = .01$, and no significant interaction between time and intervention group, $F(1,33) = 0.21, p = .65, \eta_p^2 = .01$, when analyzing urge frequency. Likewise, the regression testing hypotheses two through four did not predict changes in subjective urge-related behavior, adjusted $R^2 = -.145, F(11,23) = 0.61, p = .802$ [all $|\beta|$ s $< .41, |t|(33)$ s $< 1.3, p$ s $> .2$]. Consequently, these results demonstrate that prior to transforming the data, with analyses utilizing positively skewed data for the urge-related behavior frequencies, results from hypotheses 1 through 4 were not significant.

Hypotheses

Confirmatory Descriptive Hypothesis 1

The Surf the Urge intervention decreased urge-related behaviors, $F(1,33) = 4.29, p = .046$,

$\eta_p^2 = .11$. The interaction between intervention group and time was not significant, $F(1,33) = 0.31, p = .584, \eta_p^2 = .01$, indicating that the timing of the intervention did not affect the decrease in urge-related behavior. In contrast, when analyzing the frequency of urge feelings, there was no significant main effect of time, $F(1,33) = 1.97, p = .170, \eta_p^2 = .06$, and no significant interaction between time and intervention group, $F(1,33) = 0.16, p = .690, \eta_p^2 = .00$. Thus, hypothesis one was supported, as the Surf the Urge mindfulness intervention decreased participants' urge-related behaviors without decreasing their urge feelings, regardless of when the intervention was delivered.

Exploratory Descriptive Trend Analyses to Clarify Hypothesis 1

To further examine the change in urge-related behavior over the course of the study, additional mixed-model Group x Time ANOVAs were conducted using different time points in the analyses. Polynomial contrasts were used to assess different patterns of expected reactivity. Linear contrasts model the process of consistent spontaneous remission throughout the study. Other polynomial contrasts (or the lack of any substantial effect) would suggest mechanisms other than spontaneous remission affected urge-related behaviors. Contrast models were evaluated based on the inspection of Figures 1 and 2. These figures indicated the decrease in the frequency of urge-related behaviors and urges, respectively, by intervention group throughout each week of the study's duration.

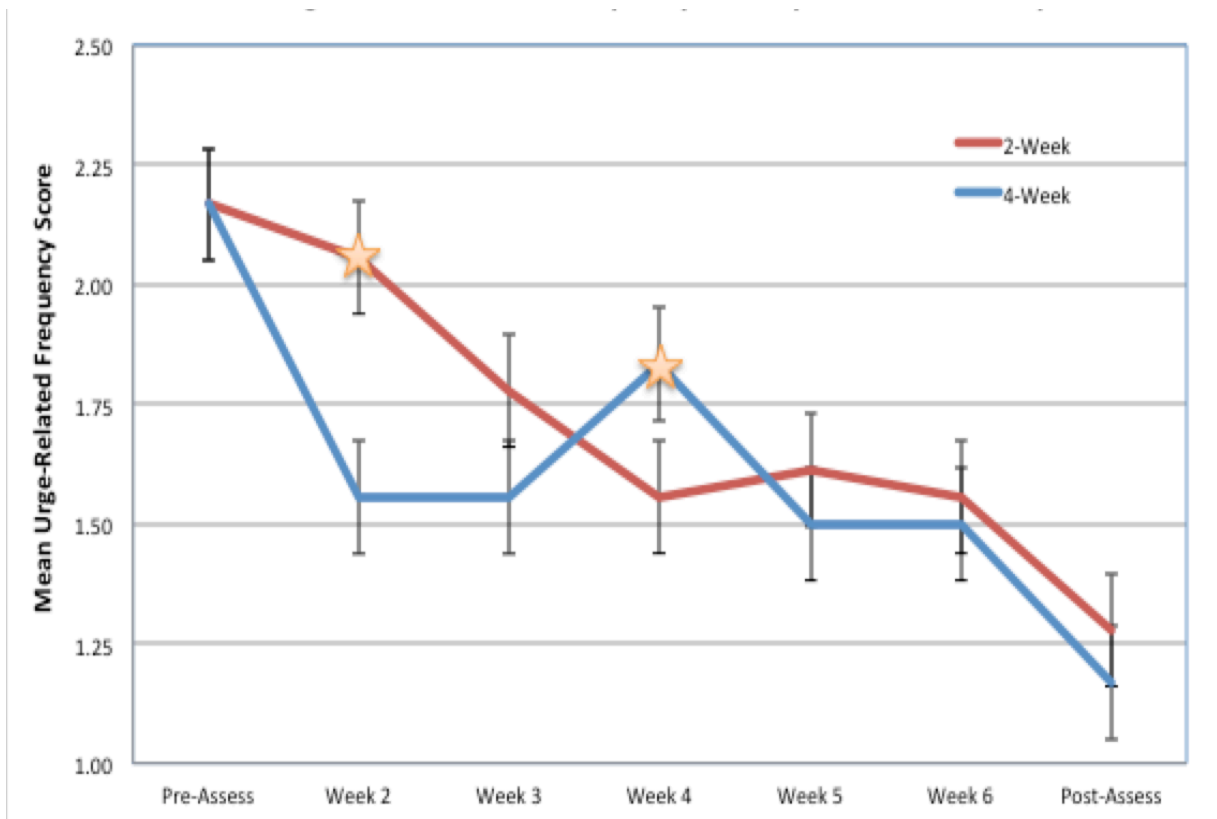


Figure 1. Mean Urge-Related Behavior frequency scores by intervention group. Error bars represent the standard error of each mean. The stars denote when the Surf the Urge intervention was provided to that intervention group.

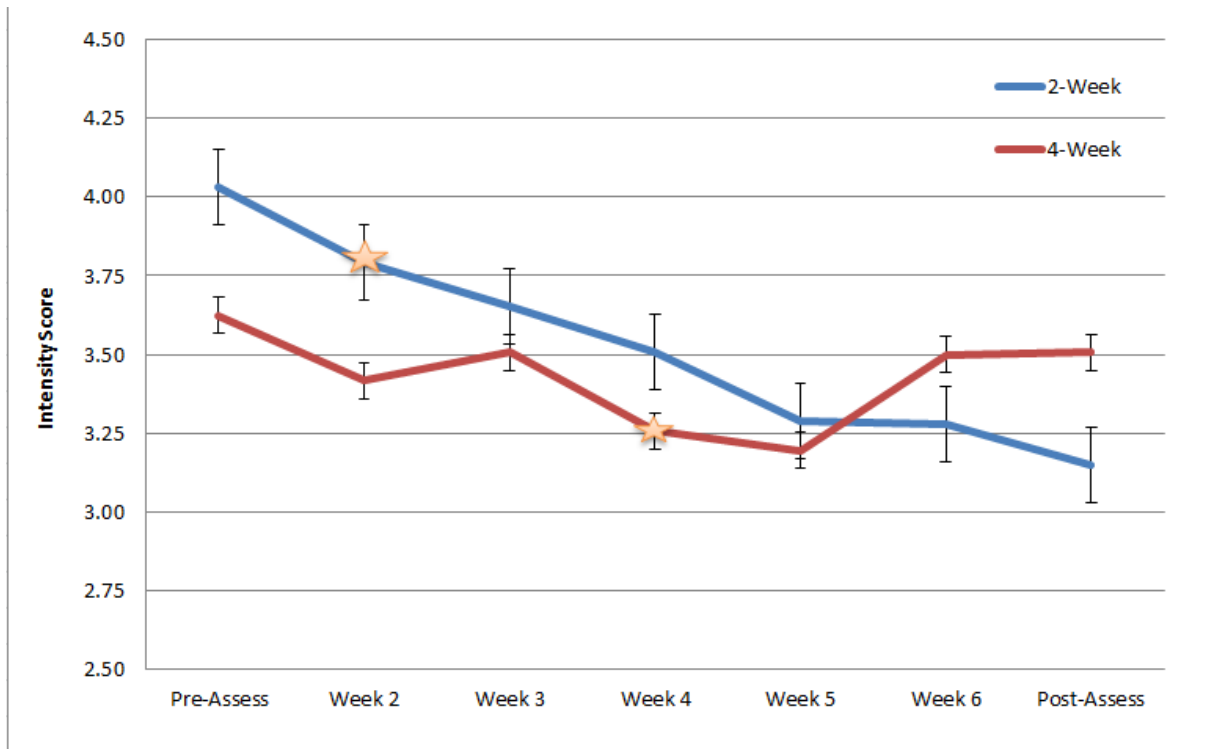


Figure 2. Mean Urges for Urge-Related Behavior intensity scores by intervention group. Error bars represent the standard error of each mean. The stars denote when the Surf the Urge intervention was provided to that intervention group.

Could these findings be due to spontaneous remission? In an ANOVA using all 7 time points, participants' urge-related behavior declined linearly throughout the study, $F(1,33) = 16.3$, $p < .001$, $\eta_p^2 = .33$. There was no Group x Time interaction, $F(4.00,104) = 1.09$, $p = .363$, $\eta_p^2 = .03$ [all polynomial $F(1,33)s < 1.9$, $ps > .15$, $\eta_p^2s < .06$], indicating that both groups' urge-related behavior declined similarly during the course of the study. In this light, the changes in urge-related behavior from intervention week to the two-week follow-up may have reflected an ongoing decline in urge-related behavior consistent with spontaneous remission. However, this pattern does not comport with the numerical rebound of urge-related behavior immediately

before the intervention in the four-week intervention group.

Did the groups differ in their urge behavior patterns pre-to-post intervention? In an ANOVA using the week before the intervention, the week of the intervention, and the week immediately after the intervention as the time factor, there was no effect of time on urge-related behaviors, $F(1.98, 65.4) = 1.95, p = .151, \eta_p^2 = .06$. There was also no Group x Time interaction, $F(1.98, 65.3) = 0.51, p = .600, \eta_p^2 = .02$ [all polynomial $F(1,33)$ s $< 0.7, p$ s $> .4, \eta_p^2$ s $< .02$]. When considering each group separately, participants who received the intervention at week 2 tended to have a linear decline in urge-related behaviors, $F(1,33) = 3.64, p = .075, \eta_p^2 = .19$ (quadratic $F(1,33) = 0.62, p = .444, \eta_p^2 = .04$). The group that received the intervention at week 4 did not show any statistically significant effects, though the quadratic trend for time, $F(1,33) = 1.88, p = .188, \eta_p^2 = .10$, was numerically stronger than that for the linear trend, $F(1,33) = 0.07, p = .795, \eta_p^2 = .00$.

Thus, the effect sizes for the polynomial contrasts of time assessing the different patterns of urge-related behavior progression in each group were similar to that for the focal test of urge-related behavior reduction in Hypothesis 1. However, they were underpowered relative to the focal test of Hypothesis 1. As a result, spontaneous remission cannot be ruled out as an explanation for the primary findings, though it is not likely the sole mechanism through which urge-related behaviors reduced in this study.

Confirmatory Mechanistic Hypotheses 2-4

To evaluate whether individual participant characteristics (e.g., mindfulness, satisfaction from Surf the Urge intervention) predicted changes in urge-related behavior frequency or satisfaction from the intervention provided, a regression analysis was conducted. Overall, it was hypothesized that initial mindfulness scores, and changes from pre- to post-assessment scores in

this skill, would predict changes in urge-related behaviors. Additionally, satisfaction ratings for the Surf the Urge intervention were hypothesized to be both 1) predicted by greater mindfulness skills and 2) predictive of change in urge-related behavior.

The overall regression model predicting changes in urge-related behavior frequency from mindfulness (both initial and change over the study), client satisfaction, and impulsivity and DASS symptom change covariates was not significant, adjusted $R^2 = -.082$, $F(11,23) = 0.76$, $p = .670$. Consistent with the findings for the overall model, none of the coefficients for the theoretically relevant covariates were significant, $|\beta|s < .48$, $|t|(33)s < 1.4$, $ps > .18$. Furthermore, the coefficients for initial mindfulness scores [$\beta = -0.42$, $t(33) = -1.37$, $p = .184$], change in mindfulness scores [$\beta = 0.04$, $t(33) = 0.16$, $p = .877$], and client satisfaction [$\beta = -0.02$, $t(33) = -0.11$, $p = .912$] were all nonsignificant. The same pattern of results obtained when only the variables central to testing hypotheses 2-4 were included [overall adjusted $R^2 = -.047$, $F(3,31) = 0.50$, $p = .688$; initial mindfulness scores $\beta = -0.11$, $t(33) = -0.57$, $p = .576$; change in mindfulness scores $\beta = -0.07$, $t(33) = -0.36$, $p = .711$; client satisfaction $\beta = -0.17$, $t(33) = -0.93$, $p = .358$], indicating that multicollinearity was not responsible for the null results above. These results indicate that participant characteristics, including mindfulness skills, impulsivity, and overall wellbeing were not predictive of changes in urge-related behaviors. Additionally, how enjoyable a participant rated the Surf the Urge intervention as being also did not indicate a greater change in urge-related behavior. Finally, change in mindfulness scores were not associated with client satisfaction scores for the Surf the Urge intervention, $r(33) = -.113$, $p = .520$.

Overall, none of the mechanistic hypotheses regarding the change in urge-related behaviors were supported. Additionally, these results indicate that changes in urge-related

behaviors were not associated with changes in other forms of psychopathology (e.g., depression).

Similar results arose when examining the change in self-reported urges [adjusted $R^2 = -.224$, $F(11,23) = 0.43$, $p = .924$; all $|\beta|s < .30$, $|t|(33)s < 1.1$, $ps > .29$]. Consequently, these same individual participant characteristics (i.e., mindfulness scores, wellbeing, impulsivity, rating of Surf the Urge intervention satisfaction) did not predict changes in participant self-reported urge frequencies.

Furthermore, the negative adjusted R^2 values across analyses reflect the penalty put on adjusted R^2 when adding many predictors with poor predictive power to regression analyses (rather than typographical errors). In other words, these findings indicate that participant characteristics were not only poor predictors of urge-related behavior change, but a poor overall model to predict change in urge-related behaviors.

Adherence to Protocol: Hypothesis 5

To ensure that participant's obtained the same treatments within both the Surf the Urge and Cue Exposure intervention, and that each were provided with accuracy, adherence rates and percentage agreement rates were calculated. I determined adherence rates for each intervention protocol by marking each step I completed within the intervention scripts as I provided both treatments to each participant. After all data had been collected, I watched the recordings of each intervention session with every participant. By utilizing the Cue Exposure and Surf the Urge scripts, I was capable of evaluating those steps that were completed during each intervention throughout these sessions. Of note, a conservative approach regarding intervention adherence was taken within this study. Overall, if I did not prompt the participant regarding the protocol step (i.e., inquired about the step myself), that step was not marked as completed. In other words, if a participant spontaneously completed a protocol intervention-step themselves (e.g.,

physiological feeling related to seeing or smelling alcohol), that protocol step was not marked as completed. This occurred within both the Cue Exposure and Surf the Urge intervention scripts. This approach was taken, as the procedure for rating protocol adherence prior to the completion of data collection was not reviewed and agreed upon by all researchers involved. To obtain percentage agreement rates, I then compared which intervention steps were checked at both the time I delivered the intervention and when I reviewed the intervention via videotape. I tallied the instances when I agreed that a step was completed during both the intervention session and time of review, this was considered adherence to the intervention. The amount of agreement (i.e., adding the number of steps where both the intervention and review protocols agreed that a step was completed) for all steps on the intervention protocols was then calculated. I then divided the summed number of steps that I agreed occurred during the intervention session and upon the tapes review by the total number of protocol steps during both sessions (i.e., intervention meeting, seen during review of tape) to create a percentage agreement score.

For both the Cue Exposure and Surf the Urge interventions, at least 95% agreement rates were obtained for all sessions. Perfect agreement was obtained for 61% ($N = 22$) of the Cue Exposure and 92% ($N = 33$) of the Surf the Urge intervention scripts. Of a total of 68 steps on the Cue Exposure Script, the range of missed protocol steps for this intervention was 12 to 29, with the mean number of steps missed for all participants being 18 (median = 17). The range of agreement scores for all participants on the Cue Exposure script was 95% to 100%, with an average agreement score of 99% ($SD = 0.02$). Of a total of 37 steps on the Surf the Urge Intervention script, the range of missed protocol steps for this intervention was 0 to 5, with the mean number of steps missed for all participants being 0.71 (median = 0). The range of agreement scores for all participants on the Surf the Urge Intervention script was 95% to 100%,

with an average agreement score of 100% ($SD = 0.01$). For additional information see Table 7 and Table 8 in Appendix V.

Typically, items most often skipped within the Cue Exposure script included cueing for physiological feelings related to the environment (e.g., smells within the home) or body (i.e., where certain feelings were occurring). In particular, initial participants often expressed irritation at the repetitive nature of the physiological prompts, and several reported things such as “I already said that” or provided the same answer over and over. Consequently, I only provided these prompts once as the study progressed. Additionally, within this script, several prompts were urge-related behavior specific (e.g., describe obtaining paraphernalia to use illicit substances), and these steps were not completed when not relevant to the participant’s behavior.

As previously mentioned, a conservative approach was taken when completing intervention adherence and thus when completing the Surf the Urge intervention, I most often failed to indicate the completion of a step within the protocol due the participant spontaneously initiating the step themselves, rather than requiring therapist prompting. As a result, I believed the participant typically did not need additional prompting to further understand or benefit from the intervention. Because no additional therapists conducted the intervention sessions, an evaluation of whether there was a statistically significant difference in adherence rates between me and other clinically trained researchers was not conducted.

Descriptive Data about Specific Urges

Due to a lack of power to conduct statistical analysis regarding individual urge-related behaviors, the change in frequency scores for urge-related behavior engagement separated by each individual behavior was diagrammed in Figure 3. This preliminary data shows that high frequency behaviors, alcohol use and deliberate self-harm, were largely responsible for the

observed decreases in urge-related behavior. Alcohol use decreased from a mean of 1.92 at the beginning of the study to 1.23 at the end. Additionally, illicit drug use and aggressive behaviors decreased from a pre-assessment mean of 2.17 and 1.67, respectively, to 1.33 and 0.67, respectively, when evaluated at post-assessment.

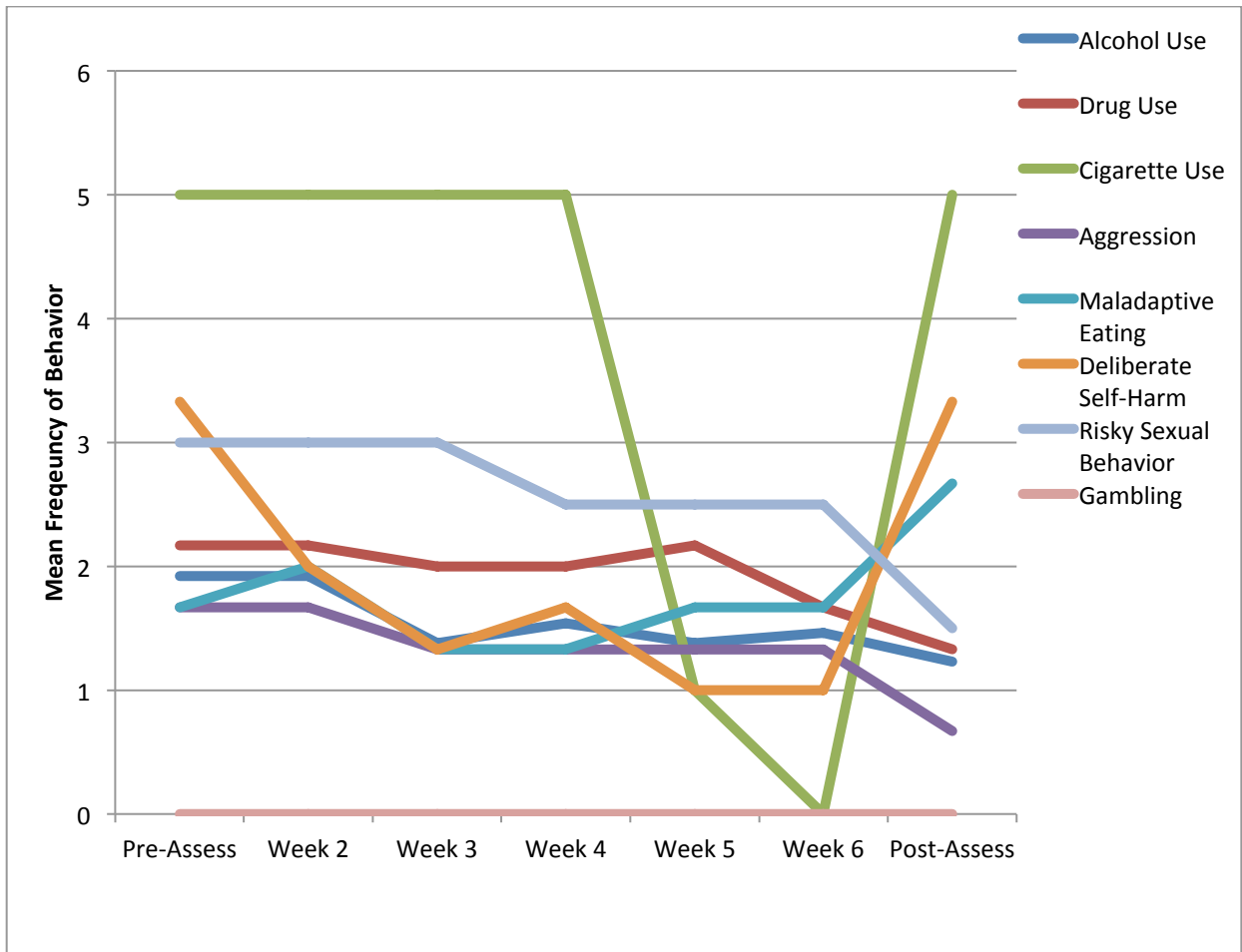


Figure 3. Mean frequency of Urge-Related Behavior scores by type of urge-related behaviors. See Table 1 in Appendix V for information regarding number of participants engaging in each behavior.

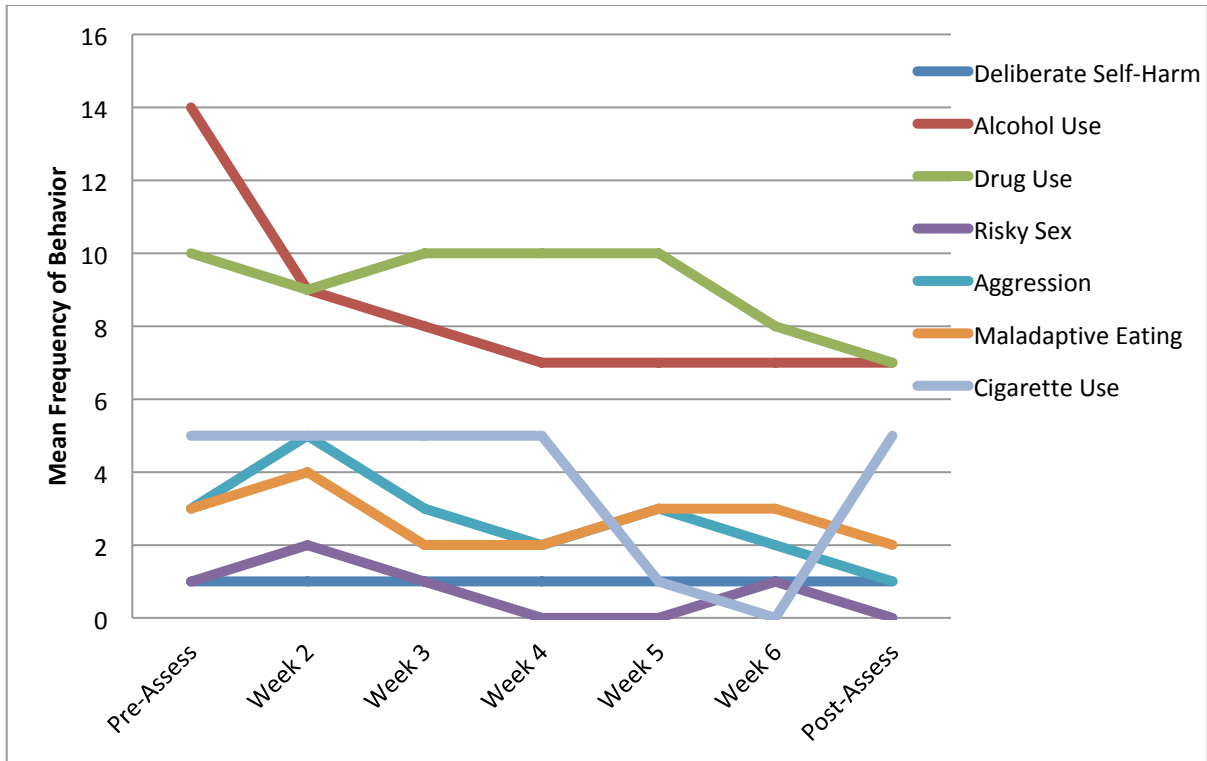


Figure 4. 2-week intervention group. Mean frequency of Urge-Related Behavior scores by type of urge-related behaviors. See Table 9 for 2-week intervention Urge-Related Behavior numerical frequency scores.

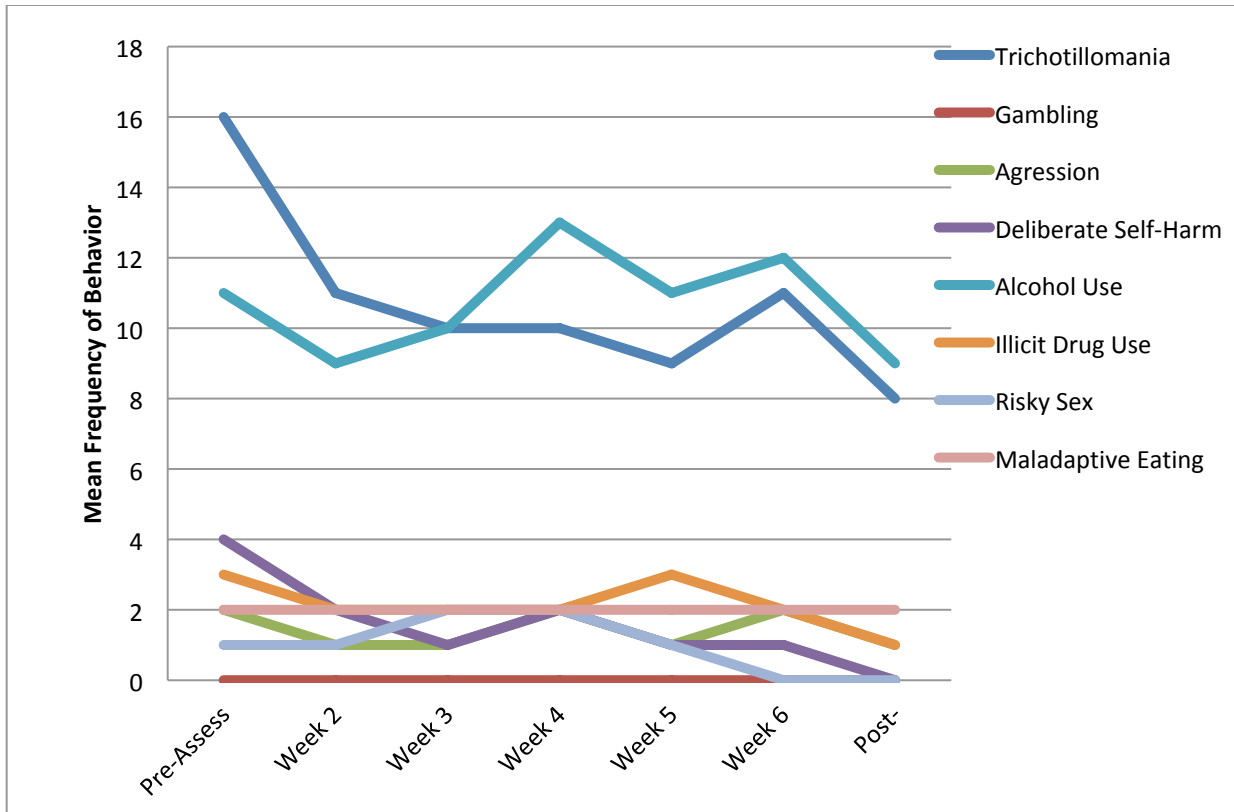


Figure 5. 4-week intervention group. Mean frequency of Urge-Related Behavior scores by type of urge-related behaviors. See Table 10 for 2-week intervention Urge-Related Behavior numerical frequency scores.

CHAPTER 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion of Results

The aim of the present study was to evaluate the effectiveness of the brief Surf the Urge intervention to reduce urge-related behaviors in a high-risk and underserved sample. While the Surf the Urge intervention has been shown to be effective in reducing cigarette smoking with college students (Bowen & Marlatt, 2009; Marlatt & Donovan, 2005), its efficacy has not been assessed with young adults who engage in a wide range of urge-related behaviors. Consequently, this study evaluated whether the Surf the Urge intervention was capable of reducing a wide array of urge-related behaviors, as well as the urges for these behaviors, in a sample of young adults. Additionally, this study aimed to determine whether participant characteristics (e.g., mindfulness skills, wellbeing) modified the impact of the intervention.

Consistent with Hypothesis 1, urge-related behaviors declined when assessed two-weeks after the Surf the Urge intervention was provided, regardless of when (i.e., 2- versus 4-week) the therapy session was provided; this same effect was not found for self-reported urges. Contrary to Hypotheses 2 through 4, mindfulness skills did not predict a change in urge-related behaviors or a greater likelihood to report satisfaction after the Surf the Urge intervention was delivered. Similarly, how satisfied a participant was with the Surf the Urge intervention was not associated with a decline in urge-related behavior engagement. Finally, consistent with Hypothesis 5, the Surf the Urge intervention was delivered with a minimum of 90% fidelity to all participants, with 61% of the Cue Exposure scripts being rated with perfect agreement and 92% of participants' Surf the Urge intervention sessions rated with perfect agreement.

Surf the Urge Intervention Effectiveness

Similar to previous findings (Bowen & Marlatt, 2009; Marlatt & Donovan, 2005), the present study found support for the effectiveness of the Surf the Urge intervention at reducing urge-related behaviors but not urges. A recent randomized control trial found that the Surf the Urge intervention was

an effective treatment to reduce the quantity and frequency of alcohol use in a sample of 14 to 18 year old students (Harris, Stewart, & Stanton, 2017). Taken together, these findings draw support for the efficacy of the Surf the Urge intervention, demonstrating that shorter, more time- and cost-effective, therapies may be effective at reducing high-risk urge-related behaviors experienced by young adults.

Within the past two decades, researchers have begun to place stronger emphasis on evaluating the effectiveness of single-session therapy treatments (SST) to improve mental health problems. As the cost for mental health treatment increases, it is imperative that more cost-effective and efficient interventions are evaluated (Harper-Jaques & Foucault, 2014; Hindo & Gonzalez-Prendes, 2011; Toneatto, 2016). SST have been found to reduce internalizing problems such as anxiety (Ghafoori, Fisher, Korosteleva, & Hong, 2016; Hindo & Gonzalez-Prendes, 2011; Perkins, 2006), overall distress (Harper-Jaques & Foucault, 2014), and depression (Ghafoori et al., 2016) in adults and children, as well as externalizing problems like gambling (Toneatto, 2016). Utilizing SST, including the Surf the Urge intervention, could provide substantial usefulness in reducing high-risk behaviors sooner in therapy, thus reducing negative consequences that could accumulate despite treatment if this behaviors are not directly addressed.

Regression to the mean. This study hypothesized that the Surf the Urge intervention would be successful at assisting individuals to reduce the frequency of their urge-related behavior engagement. Additionally, it was believed that participants who received the intervention earlier (i.e., week two versus week four), would demonstrate a reduction in these behaviors sooner. Overall, the Surf the Urge intervention assisted participants in reducing their urge-related behaviors, but there was no significant impact of time of intervention delivery on behavior change. Participants in both the two- and four-week intervention groups also decreased their urge-related behavior engagement after the initial meeting and before the intervention was delivered (see Figure 1). Therefore, it is likely that the intervention was not solely responsible for the observed change in participant's engagement in their urge-related behavior.

Regression to the mean (RTM) has been shown to have a significant impact on psychology research (Fitzmaurice, 2000; Furby, 1973; Shephard, 2003; Zhang & Tomblin, 2003), including clinical trials (Kraemer, Wilson, Fairburn, & Agras, 2010). RTM is the phenomenon in which participant's scores

at pre-assessment move closer to that variable's mean score from the population during any subsequent evaluations (Yu & Chen, 2015). In other words, a participant's scores when initially measured will change at the time of any later assessment, becoming closer to that average individual's scores, even without any intervention or treatment. This is important when evaluating high-risk behaviors or more severe symptoms, as RTM suggests that participants will likely demonstrate a reduction in difficulties without any impact from a researcher or therapist (Yu & Chen, 2013). RTM is most likely to occur when researchers obtain samples who demonstrate extreme scores at an initial assessment (e.g., severe symptomatology of mental health disorders, high levels of substance abuse or risky behaviors; Shephard, 2003; Zhang & Tomblin, 2003) and these types of participants are typically chosen to evaluate the impact of clinical interventions due to their ability to meet inclusionary criteria (Fitzmaurice, 2000). Overall, due to RTM effects, it is unlikely that a researcher can determine if a participant's change in the assessed variable (e.g., urge-related behaviors or mental health symptoms) is due to an intervention provided or the natural tendency for RTM unless specific study criteria are implemented (e.g., placebo or control group).

RTM research has demonstrated that this effect can impact research related to high-risk behavior engagement, including those driven by urges. For example, RTM was found to account for decreases in substance use frequency when evaluating the effectiveness of a treatment utilized to reduce this high-risk behavior (Finney, 2007). Within this study, the researchers indicated that this likely occurred due to a sample containing individuals reporting significantly high levels of substance use behaviors when compared to the average individual in the population.

Overall, the current study utilized participants that reported engagement in urge-related behaviors. Additionally, it is also possible that individuals chose to participate in this specific study, when compared to other options within the course research opportunities, due to their own desire to seek treatment for mental health symptoms or urge-related behaviors. Therefore, similar to other literature regarding RTM, this study chose a sample that would predispose the results to the impact of this phenomenon. However, it is important to note that this study did not aim to recruit individuals that were engaging in a substantially greater level of urge-related behaviors (i.e., outliers). For example, it is likely that many of the individuals

in this study were engaging in level of alcohol intake similar to average college student. Nevertheless, due to not having a control or placebo group for comparison, this study cannot determine if the change in a participant's engagement in their urge-related behavior was due to RTM or intervention effects.

Consequently, future studies could benefit from this comparison.

Demand characteristics. Demand characteristics (DC) have been shown to have a powerful effect on behavior change (Davis, Doherty, & Moser, 2014; Orne, 2002; Poinhos, Oliveira, & Correia, 2015). DC is the tendency to for a participant to respond in a manner they believes is consistent with the researcher's hypotheses (Orne, 2002). DC have significantly predicted self-reported attitudes and behavior estimates, including sobriety efficacy scores, as well as alcohol and drug related attitudes (Davis et al., 2014). Self-reported demand characteristic scores have also been shown to be strongly negatively associated with alcohol and drug use, as well as psychiatric symptom severity (Zemore, 2012). Overall, it is possible that DC may explain the immediate high-levels of in urge-related behavior upon initiation of this study; however, if they were fully responsible for the findings of this study, it would be likely that participants would continue to report high frequency engagement in these behaviors until the intervention session. Nevertheless, urge-related behavior frequencies began declining by week two of the study in both intervention groups. Additionally, due to participants not also reporting a significant decline in self-reported urges it is likely that DC do not fully account for participants reporting a change in the frequency of their urge-related behaviors.

Observation effects. In addition to RTM and DC, observation effects (OE) may have influenced this studies ability to demonstrate the total efficacy of the Surf the Urge intervention. The theory of OE states that individuals will change their behavior due to either: 1) an awareness of being observed by others or 2) increased self-observation or introspection. This includes the idea that clients may improve over time, not due to the intervention, but because they complete a weekly record of their mental health symptoms or behavior frequency. The task of recording information increases awareness to symptoms or problem behavior, as well as the feelings associated with these concerns (e.g., shame due to continuing to

engage in the behavior, guilt for not improving as fast as one desires). Improvements, whether realistic or overestimated by the individual, then typically occur (McCarney et al., 2007; Zwane et al., 2011).

Researchers have evaluated the impact of OE on behavior change through observing the relationship between food and exercise diaries with weight loss behavior outcomes. In a study evaluating the efficacy of a weight loss program, 88% individuals that kept a food diary were shown to lose 5% or more of their body weight compared to only 23% of individuals that did not keep a food diary (Wang, Fetzer, & Wang, 2012). Food diaries have also been shown to affect weight, as well as body fat percentage and waist circumference (Burke et al., 2011; Burke, Wang, & Sevick, 2011). Overall, food and exercise dairies accounted for an average of 16% and 12% of the variance for weight loss, respectively, for both men and women (Johnson & Wardle, 2011).

Researchers have also evaluated the impact of OE on other behaviors, including those related to interpersonal relationships. Reynolds, Robles, and Repetti (2016) evaluated the effect of daily diaries recording parent-child interaction data. Findings demonstrated that as more diary records were made, the amount of conflict reported within the parent-child relationship decreased, and this change was most significant for those individuals who reported the lowest baseline of conflict. Researchers argued that the parents who felt more shame and guilt when reporting conflict with their children, demonstrated by lower self-reported levels of conflict at baseline, continued to report lower conflict throughout the duration of the study due to OE.

Additional studies have also assessed whether OE can assist with intervention techniques to change client's thinking and behavior. A study evaluating the effects of dairy entries on thought distortions in women with chronic pain found that participants who entered three daily diaries about their awareness and reflections of their pain experiences reported less catastrophizing; this continued to be demonstrated at a 5 month follow-up (Krristiansdottir et al., 2013). In an evaluation of whether a dosimeter and dairies would influence sun-related behaviors (e.g., sunscreen use, reducing sun exposure), 16% of participants reported that being monitored changed their behaviors (Koster et al., 2016).

Furthermore, OE using diaries has assisted with interventions to reduce urge-related behaviors, including

cigarette use (Singh & Leung, 1988), alcohol use (Hufford, Shields, Shiffman, Paty, & Balabanis, 2002), risky sex (Glick, Winer, & Golden, 2013).

Placebo effects. Placebo effects (PE) have also been shown to impact or change a participant's behaviors. PE are described as the effect of a participant's expectations on a treatment outcome. For example, an individual's perception that a medication or therapy will work will impact how effective that treatment will be, regardless of how efficacious the intervention actually is (Dar, Stronguin, & Etter, 2005). The effect of a placebo (i.e., harmless pill or treatment) also relates to a participant's perception of what type of treatment they are receiving (i.e., placebo, effective drug treatment; Dar et al., 2005; Geers & Miller, 2014; Sliwinski & Elkins, 2013). Importantly, PE is different from OE, because in OE the participant is changing his or her behavior due to being observed by someone else or themselves (i.e., self-introspection); however, PE is behavior change based on the impact of the participation's expectations regarding the treatment. Thus, PE could be due to no observation or examination, rather a participant's thoughts only. Overall, research has shown that PE have a strong influence on participants' behavior change or beliefs that an intervention works.

Overall, researchers have found that placebos can be effective at changing behaviors as significantly as drug or evidence-based therapies. In one study, a placebo was found to be almost equally effective as a nicotine patch in reducing a participant's smoking behavior (Dar et al., 2005). A placebo intervention (i.e., relaxation training) was also shown to be more effective than no treatment at reducing anxiety symptoms (Trexler & Karst, 1972). Thus, it is possible that a participant's thoughts regarding the treatment they are obtaining are as effective at changing his or her behavior as the treatment itself, even when these behaviors are psychologically or physiologically addictive.

Variables impact with the Surf the Urge Intervention. The present study aimed to determine the efficacy of the Surf the Urge intervention in reducing a wide array of urge-related behaviors with adolescents and young adults. The intervention was found to be effective at reducing urge-related behavior frequency from the week of the intervention to two weeks post-intervention. No significant effect was found to demonstrate that participants who received the intervention during the second week of

the study reduced their urge-related behavior sooner than those who received the intervention during the fourth week. Of note, participants' urge feelings were not significantly reduced throughout the duration of this study. Consequently, the Surf the Urge intervention appears to be effective at reducing urge-related behavior but not self-reported experiences of the urges that trigger these activities. Interestingly, if SD, OE, or PE accounted for the change in participant's behavior, it would be likely that participant's would also indicate changes in their own experiences of urges. Nonetheless, participants in the 4-week intervention group did not indicate an overall decrease in the frequency of their urges from the pre-assessment to post-assessment evaluations, or from the intervention session to the post-assessment evaluation (see Figure 2). As participants were not informed of the hypotheses or aims of this research study, they likely perceived that the Surf the Urge intervention, and this study as a whole, aimed to assist them in changing their high-risk behaviors and the triggers that impacted them. Consequently, additional research should further evaluate these factors when determining the effectiveness of the Surf the Urge intervention, and other therapies, to ensure confirmation of these assumptions.

Impact of Mindfulness Skills on Urge-Related Behaviors

This study found that greater skills in mindfulness did not relate to a reduction in urge-related behaviors. Therefore, the current study does not support the finding that greater mindfulness skills lead to a reduction in high-risk behavior engagement. This finding contradicts previous research that demonstrated self-reported mindfulness skills leads to a greater reduction in urge-related behaviors. For example, individuals with less mindfulness skill before treatment reported a higher frequency of impulsive behaviors when compared to individuals who scored high in mindfulness skill's practices (Dakwar et al., 2012; Robinson et al., 2014; Witkiewitz et al., 2005). Furthermore, an increase in using mindfulness coping skills was correlated with a greater reduction in urge-related behaviors (Black, 2012; Brewer et al., 2014; Fruzzetti & Erikson, 2010; Ostafin & Marlatt, 2008). Nevertheless, the current study was unable to find similar results. Neither initial nor change (i.e., pre- to post-assessment) mindfulness scores were significant predictors of the frequency of urge-related behavior.

There may be several explanations regarding why this study did not find that mindfulness skills scores and the frequency urge-related behavior engagement were related. This could include the impact of a participant's level of socially desirable responding, as a participant may have modified their assessment answers regarding their level of urge-related behavior engagement to please the researcher or maintain a positive image. Importantly, however, participants were not aware of the researcher's interest in mindfulness. On the other hand, these finding may result from participants lacking in their own self-awareness regarding their mindfulness skills, thus leading to inaccurate assessment reports (Baer et al., 2006; Bergomi, Tschacher, & Kupper, 2013; Park, Reilly-Spong, & Gross, 2013; Ou, Dasborough, Todorova, 2015; Sauer et al., 2012). Nevertheless, a more likely alternative explanation is that other factors, such as the effect of the Surf the Urge intervention or observation effects (i.e., participants reporting a reduction in their urge-related behavior due to greater self-awareness or being required to record this behavior; McCarney et al., 2007; Zwane et al., 2011), led to the change in participants engagement in their urge-related behavior, rather than mindfulness skills.

Intervention Satisfaction

Intervention satisfaction is imperative when providing both brief and long-term treatment services to clients, as treatment will be more effective if clients are satisfied with the services they are provided. Previous research has demonstrated that when clients do not enjoy learning an intervention or coping skills, there is a reduction in the likelihood that they will utilize them (Duncan et al., 2006); this will lead to continued maladaptive behavior engagement and negative consequences. Additionally, when feedback about treatment satisfaction is provided, productivity within therapy increases, drop-out rates decline, better therapeutic rapport is established, treatment goals are achieved more quickly, and greater mental health symptom change is produced (Anker et al., 2009; Duncan et al., 2006; Reese et al., 2009).

Within the current study, participant satisfaction with the Surf the Urge intervention was collected during the post-assessment evaluation to assist in determining whether participants believed this treatment was enjoyable and helpful. Overall, results found that more than half of the participants rated the Surf the Urge intervention as “mostly” or “very” satisfying. More importantly, on the item asking participants

whether they believed this intervention helped them more effectively cope with their urge-related behavior, 66% indicated that “it helped” ($M = 2.84$, $SD = 0.81$, Range = 1 – 4) and 75% of participants indicated that they would recommend the intervention to a friend experiencing similar concerns ($M = 3.03$, $SD = 0.74$, Range = 1 – 4). Supporting these findings, only 11% ($N = 4$) individuals dropped out of the research study, with each one doing so after their consent meeting but before their intervention session. Overall, these findings indicate that participants likely believed that the Surf the Urge intervention was enjoyable and effective at reducing their urge-related behaviors through teaching them more effective coping skills. Thus, providing further evidence that the change in participant’s behavior is likely due to intervention success rather than extraneous or confounding variables.

Mindfulness and intervention satisfaction. Previous research demonstrated that participant acceptance and application of an intervention modality (e.g., cognitive-behavioral model, mindfulness), as well as attending to the present (Currell, Christodoulides, Siltarien, & Dudley, 2016), predicts client intervention satisfaction ratings. Therefore, the present study hypothesized that those individuals who showed the greatest improvement in mindfulness skills from the pre- to post-assessment evaluations would rate the Surf the Urge intervention as more enjoyable. Nonetheless, findings were unable to support this hypothesis; no difference was found in intervention satisfaction ratings based on participant’s change in mindfulness scores from baseline to post-assessment.

Rather than focusing on mindfulness skills, recent research has concentrated on screening for urge-related behavior frequency, specifically substance use, to determine specific treatment types and promote greater client satisfaction. As the current study was unable to determine that intervention satisfaction was related to change in urge-related behavior, evaluating what types of treatments will be most effective and enjoyable by clients will be imperative to assist in engaging client’s more effectively. As previously mentioned, if clients are engaged in the treatment being provided and believe they are being assisted, they are more likely to experience significant behavior change (e.g., Sliwinski & Elkins, 2013). Consequently, utilizing additional resources to determine what treatments will be most engaging,

and thus effective, for a client will be imperative for treatment providers looking to deliver short and cost-effective, yet efficacious, interventions in reducing high-risk behaviors.

Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence-based treatment method utilized to determine what type of intervention will be the most effective and satisfying with individuals engaging in substance use. SBIRT was developed by the Substance Abuse and Mental Health Services Administration to assist individuals in reducing substance use and the resulting consequences. SBIRT screens clients in an effort to determine the appropriate fit for brief or more long-term interventions; typically, Motivational Interviewing is the chosen therapy modality. An additional goal of SBIRT is to assist in enhancing treatment services and expanding the continuum of care. SBIRT was designed to be most effectively utilized by the general medical community, including hospitals, emergency rooms, and community health centers, as well as school-based health clinics and mental health professionals (Bray, Del Boca, McRee, Hayashi, & Babor, 2017).

SBIRT is effective at reducing substance use behaviors, including alcohol and illicit drug use. In an evaluation of approximately 172,000 patients, 69% were referred to a brief intervention. Of those participants, results showed that the number of days alcohol was used decreased by 36% and illicit drugs were used decreased by 50% (Aldridge, Linford, & Bray, 2017). A second study evaluating about 460,000 participants, with 23% screening positive for substance use, found that those referred to treatment through SBIRT reported a significant decline in self-reported drug use between baseline and a six-month follow-up. Improvements were also shown at the six-month follow-up in employment rates, self-perception of overall health status, self-reported arrests, homelessness, and mental health symptoms (Madras et al., 2009). In samples of adolescents, SBIRT has been shown to reduce marijuana use, days drinking alcohol, binge drinking frequency, drinks per occasion, cigarette use, and illicit substance use (Mitchell, Gryczynski, O'Grady, & Schwartz, 2013).

In addition to being effective, participants rate SBIRT as a highly satisfying screening and intervention tool. Participants in an emergency room were provided SBIRT screening and referral services; the qualitative feedback regarding the intervention indicated that 90% of participants rated the

intervention as “excellent” overall and 78% of stated it was “extremely” useful. Within that same study, 85% of participants rated their counselor as “excellent” and 95% of individuals stated they would be “very likely” to recommend the treatment to others (Boudreaux, Haskins, Harralson, & Bernstein, 2015). An additional study demonstrated that 89% of participants reported that SBIRT was enjoyable. Ninety-three percent of the same sample stated a belief that others would be helped by SBIRT and 83% endorsed that the information was useful (Murphy, Bijur, Rosenbloom, Bernstein, & Gallagher, 2013). Eighty-eight percent of women endorsing substance use and involvement in a domestic violence relationship reported being “very satisfied” with a SBIRT intervention at a 3-month follow-up evaluation (Gilbert et al., 2015).

Clinical Implications

Current popular intervention services for adolescents typically focus on cognitive and behavioral aspects, yet alternatives (e.g., integrate acceptance and mindfulness) that are more efficacious may be available. These more popular interventions utilizing cognitive and behavioral techniques can also be difficult to implement due to cost and time constraints (Harper-Jaques et al., 2011; Toneatto, 2016; Zack et al., 2014). Typically these interventions, such as Cognitive Behavioral Therapy or Acceptance and Commitment Therapy, require long-term treatment lasting anywhere from three months to one year, with weekly one-hour individual sessions. Dialectical Behavior Therapy, which utilizes mindfulness-based practices, is similar in duration, and also includes additional weekly group therapy sessions, lasting approximately one to two hours (Chapman, 2006). Other mindfulness-based interventions, such as Mindfulness-Based Relapse Prevention (MBRP), require clients to take a two-hour, eight-week course in mindful meditation and then meditate at home for 30 minutes per day for six days a week thereafter (Witkiewitz et al., 2005). In addition to the timely cost of providing these more intensive interventions, psychologists or mental health providers (e.g., Licensed Clinical Social Worker), who require years (e.g., 3 to 6) of training to obtain the appropriate skills necessary to effectively treat patients, are the only individuals capable of providing these interventions. Most importantly, even with the significant cost and time necessary to implement these treatments, not all clients will benefit (Zack et al., 2014).

On the other hand, shorter (e.g., interventions that can be delivered in 30 minutes) interventions would be particularly useful, if effective, to ensure that a greater number of individuals are assisted. Previous findings have demonstrated the effectiveness of single-session treatments, including decreasing psychopathology both post- intervention and one month later (Harper-Jaques & Foucault, 2014; Perkins, 2006), as well as reducing high-risk behaviors up to one year later (Toneatto, 2016). Brief treatments (i.e., one or two sessions), possibly followed by a later booster session several weeks later (Ballesteros, Gonzalez-Pinto, Querejeta, & Arino, 2004; Barkham, Moorey, & Davis, 1992), have also been shown to decrease high-risk behaviors. Thus, it may be possible to treat urge-related behaviors with shorter, more cost-effective, treatments. This would allow treatment to reach a broader range of clients (e.g., lower socioeconomic status, individuals unwilling to commit to long-term treatment) and reduce societal costs (e.g., \$5.4 billion in yearly medical costs for juvenile underage drinking, \$180.8 billion in costs for drug abuse in 2002; Gabbay, 2005; Jansen et al., 2013; Miller, Levy, Spicer, & Taylor, 2006; Morgan, Crane, Moore, & Eggett, 2013).

Interventions like the Surf the Urge treatment can be implemented in approximately 30 minutes (Bowen, 2008), thus reducing the excessive time that clients would be required to engage treatment aimed to reduce maladaptive behaviors. Furthermore, given that the Surf the Urge treatment is brief, it is less complex in its delivery than other more intensive therapies with multiple components and skills taught. More specifically, the Surf the Urge intervention can be described in a simple two to three page protocol. Various health care providers, such as doctors and nurses, as well as mental health clinicians, may then be capable of utilizing this protocol to help their patients reduce urge-related behaviors. Consequently, future researchers may benefit from evaluating whether other professionals can be effective at implementing the Surf the Urge treatment with clients as well.

It is likely that the Surf the Urge intervention can be a useful intervention for integrated care settings. This is imperative, as there is a shift within medical settings for behavioral health professionals to service individuals with mental health concerns within integrated settings (e.g., primary care medical offices; Manderscheid & Kathol, 2014; Hunter, Hunter, & Kesler, 2014; Summergrad & Kathol, 2014).

Within integrated care settings, clients typically have short-duration appointments (e.g., no more than 30 or 60 minutes) and are required to review numerous health concerns. Patients specifically seen in medical settings (e.g., primary care doctor's office) may also never revisit the same doctor's office in the future (Summergrad & Kathol, 2014). Thus, due to its short duration and ease of implementation, the Surf the Urge intervention may be incorporated into these appointments. Future researchers would benefit from evaluating if it can be effectively used in a medical setting, during medical appointments (e.g., medication management, check-up), to assist patients in reducing high-risk, urge-related, behaviors. Through providing this intervention with other treatments and in multiple settings, clinicians may be more capable of reaching a wider range of clients (e.g., college student mental health clinics, community clinics, inpatient psychiatric hospitals) with broader presenting problems (Substance Abuse and Mental Health Services Administration, 1999).

Furthermore, given that the Surf the Urge intervention is more time-efficient, clinicians will have time to use it with other treatments and assist individuals with other mental health concerns. Previous researchers have demonstrated the effectiveness of eclecticism in clinical intervention delivery (Kinderman & Tai, 2007; Perez & Phil, 199; Wren, 1996), as it is argued that combining treatment from two or more modalities will more effectively treat a client's presenting problem. As the Surf the Urge intervention was shown to be efficacious at reducing high-risk and high-consequence behaviors, clinicians may benefit from combining this treatment with other empirically supported, well-tolerated, interventions (e.g., CBT, DBT, MI) in an attempt to reduce both these behaviors and additional mental health concerns. More specifically, clinicians could provide services for urge-related behaviors within the first session or two and then utilize other treatments to focus on additional symptoms (e.g., depression, trauma). This additional, more long-term, treatment may then assist clients in producing a generalization of their mindfulness skills gained during the Surf the Urge intervention.

In addition to the Surf the Urge intervention being effective, it is also likely that tracking urge-related behaviors may be an effective tool in reducing them. The present study found that the two-week intervention group demonstrated a steady decline in the frequency of their urge-related behavior

engagement, whereas the four-week intervention group fluctuated their behavior frequency, showing a decline during the week of the intervention (See Figure 1). It may be that the effects on urge-related behavior change shown in the two-week intervention group were due to the study's requirement of participants to report on their behavior and urge frequency each week. Similar findings have been demonstrated in previous research (Burke et al., 2011; Reynolds et al., 2016; Wang et al., 2012), in which participants improved with their presenting problems after tracking these behaviors or keeping a diary.

Additionally, it is likely that this consistent reporting of behavior could act similarly to parental involvement for adolescents or young adults who engage in high-risk behaviors. Previous research has demonstrated that adolescent delinquency is strongly related to, and can be predicted by, parental involvement, control, and warmth (Fletch, Steinberg, & Williams-Wheeler, 2004; Harris-McKoy & Cui, 2013; Walters, 2013). Overall, the current study demonstrated similar findings, as, within the present sample, 25% of participants reported zero urge-related behavior engagement at post-assessment after tracking their behaviors and urges weekly; thus, it is possible that there was an additional impact of participants tracking their behaviors on reducing their urge-related behavior frequency. Consequently, therapists will need to utilize multiple means, which may include interventions and diary keeping or behavior tracking, to assist clients in reducing these behaviors.

Limitations

The present study demonstrated that the Surf the Urge intervention was effective at reducing the frequency of several urge-related behaviors in a sample of young adults. Nevertheless, as a whole, this research was developed as a pilot study to evaluate the effectiveness of the Surf the Urge intervention with a wide range of urge-related behaviors and a younger sample. Thus, researchers should take caution in generalizing this study's findings to other evaluations of the Surf the Urge intervention or a more widespread interpretation of the efficaciousness of brief mindfulness-based interventions to reduce high-risk behaviors. Beyond this, the study also included several limitations that should be considered when evaluating its findings.

Assessment measures. Without external observations of behavior, this study cannot be certain that the Surf the Urge intervention produced the self-reported changes found in the frequency of urge-related behavior engagement. Participants reported that they reduced their engagement in urge-related behaviors throughout the duration of the study; nevertheless, without some form of authentication (e.g., drug testing or collateral reports), this information cannot be guaranteed in accuracy. For example, the findings could be due to participants providing inaccurate information (e.g., lying, malingering) or having memory errors in reporting the frequency of their urge-related behavior. More specifically, if an individual was engaging in a behavior several times daily, they likely had more difficulty recalling the frequency of this behavior throughout the entire week than an individual who drank once at a weekend party.

The present study would have also benefited from the addition of several assessment measures evaluating extraneous variables. Research has demonstrated that the Transtheoretical Model (TTM) of Change has been shown to significantly predict behavior change (Hardcastle et al., 2012; Morchari-Greenberger et al., 2010). Thus, a measure of what stage of change a participant was in throughout the duration of the study should be added to future research about urge-related behavior and intervention effectiveness. Evaluating TTM of Change could provide additional information about responsiveness to the intervention, as well as data regarding what other treatment factors to target to assist in making the Surf the Urge intervention more effective.

As this study was unable to demonstrate any significant effect of mindfulness on behavior change or intervention satisfaction, it is possible that the mindfulness measure chosen did not fully evaluate this construct. Although the Five Facet Mindfulness Questionnaire is one of the most widely utilized mindfulness self-report measures to assess trait mindfulness, demonstrating good predictive, convergent, and discriminant validity (Baer et al., 2006) and internal consistency (Baer et al., 2009), some researchers have argued that most self-report mindfulness measures are poorly constructed or do not assess their target construct. Without an agreed upon operational definition of mindfulness, researchers argue that these self-report measures are ambiguous and inaccurate in measuring this trait or skill. Furthermore, they

propose that individuals may believe they engage in these behaviors; however, such individuals may lack the ability to do so (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Bergomi, Tschacher, Kupper, 2013; Park, Reilly-Spong, & Gross, 2013; Qu, Dasborough, & Todorova, 2015; Sauer, Walach et al., 2012). As with all self-report measures, future research needs to determine how self-report mindfulness assessment scores can be corroborated (e.g., collateral evidence, behavioral observations) and if researchers can ensure that participants are aware of the study's construct's operational definition (e.g., awareness, nonjudgment).

Pilot study. As previous research has not evaluated the Surf the Urge intervention with a wide range of samples and presenting concerns, this study was developed as a pilot test to assess a broader range of individuals. Nevertheless, as a pilot study, the sample was small. Due to the limited number of participants, the statistical power to assess the effect of the Surf the Urge intervention on each individual urge-related behavior was not possible. Furthermore, all participants received the intervention from the same therapist. While having the same therapist provide treatment to all participants assists in ensuring that therapist effects are not responsible for the study's findings, it is also necessary to ensure that other treatment providers can provide the Surf the Urge intervention in an efficacious manner with a wide range of individuals. Finally, as this study was only a pilot evaluation of the Surf the Urge intervention, assessment of the effectiveness of the treatment was only conducted two to four weeks after the intervention session. Consequently, the long-term effects of this intervention were not evaluated. Future researchers would benefit from determining whether the Surf the Urge intervention can impact changes in the frequency of urge-related behaviors over long-term periods, such as months or years.

Comparison group. Most clinical trial researchers utilize a control or placebo condition to ensure the effects of their studied intervention can be compared to the effect of no treatment. In an effort to ensure the ability to evaluate the true effect of the Surf the Urge intervention, the present study created two intervention groups. This allowed participants to receive the intervention at one of two time points, either the second or fourth week of the study's duration. I was then capable of evaluating when participants received the intervention and the point at which the most change in urge-related behavior

occurred. Nevertheless, the study did not include a comparison group to determine whether the Surf the Urge intervention was more effective at reducing urge-related behaviors than a placebo (e.g., sugar pill), alternative treatment, or control (i.e., no intervention). It is thus unclear whether this intervention is more effective than other treatments, or no intervention, at reducing urge-related behaviors. Participants may have demonstrated equally significant behavior change just due to alternative study factors (e.g., SD, OE, regression to the mean). Future studies would therefore benefit from evaluating the Surf the Urge intervention in comparison with a placebo treatment to determine its true effect on changing behavior.

Recruitment difficulties. Recruitment in controlled clinical trials is problematic due to the time-consuming nature of these studies. Previous research has demonstrated that participant variables impact recruitment rates and have been shown to be a barrier to the retention of participants. Examples can include: lack of telephone access, transportation difficulties, scheduling conflicts, family stress, a comorbid chronic physical health problem, mistrust, stigma, religious barriers, or socioeconomic status have also been shown to impact recruitment rates and be a barrier to the retention of participants (Brown, Marshall, Bower, Woodham, & Waheed, 2014; Kanuch et al., 2011).

The present study suffered many of the similar difficulties, as participant recruitment was more challenging than initially expected. When developing this study, the Principal Investigators and I imagined that recruitment would likely take approximately 6 months. Nonetheless, to obtain a large enough sample, I was required to prolong recruitment for 11 months. It is believed that many participant barriers were present, leading to such an extensive time-delay. This included scheduling conflicts, transportation difficulties, and stressors.

While two modes of recruitment were utilized (i.e., The PRACTICE and SONA), significant difficulties arose in recruiting participants through a community mental health clinic, The PRACTICE, as only two individuals were recruited from The PRACTICE. Due to initial difficulties, I proposed and implemented various modifications in my recruitment strategies within this portion of the sample. These problem solving ideas included offering cash incentives for participation to individuals recruited from The PRACTICE, as well as contacting these individuals via phone a minimum of two times prior to

withdrawing their name from the possible sample pool. Nevertheless, even with these modifications, very few recruitment calls were returned. Additionally, while several consent appointments were made with clients from this clinic, many did not present to that initial meeting.

Overall, it is believed that individuals from The PRACTICE likely experienced more difficulties with participation than those recruited through the university. This includes participant characteristics, like lower socioeconomic status, leading to greater difficulties with transportation and scheduling obligations. Additionally, as almost all of the participants contacted from The PRACTICE were adolescents, participation was necessary by both the participant (i.e., adolescent) and his or her parent. This increased the factors limiting participation opportunities (e.g., scheduling concerns), as it necessitated the recruitment of two individuals rather than one.

The majority of individuals were obtained through the university's psychology department (i.e., SONA). Qualitatively, it appeared that throughout the duration of the study, SONA participants appeared more engaged. It is likely that this was due to their motivation to obtain course credit through completing the study. Furthermore, these individuals likely presented to the university's campus one or more times per week; therefore, attending the study's sessions was a minimal inconvenience.

Due to all of these difficulties, the sample of this study was not as diverse as proposed. All participants were between the ages of 18 and 24, with 83% being between the ages of 18 and 21. Additionally, 94% of participants were college students, as 98% were recruited from college courses on the university's campus. Future clinical trial research may benefit from evaluating recruitment strategies for multiple populations, including younger adolescents, as well as what incentives may mitigate some of these challenges.

Dropout rates. High drop-out rates within clinical trial research is prevalent; nevertheless, the present study did not appear to suffer significantly from this difficulty. Overall, the present study had few participants drop-out ($N = 4$, 11%), with almost 90% of the sample completing the full assessment battery and treatment session. Previous researchers have indicated that reasons for drop-out rates include that participants may feel that they are not receiving benefit from the treatment, as they are unaware of the

study's outcome while enrolled in treatment (Adams, 2013). Researchers may also misrepresent information regarding the study to participants (Howard, de Salis, Tomlin, Thornicroft, & Donovan, 2009). As it is possible that some of the individuals that dropped out of this study perceived that they were not improving in their mental health or high-risk behavior engagement, or perceived that the intervention was not effective, future researchers should attempt to follow-up with these individuals to determine what triggered their exit from the research study.

Recommendations for Future Research

Future research evaluating the Surf the Urge, or similar brief mindfulness, interventions should examine the effectiveness of these treatment methods with adolescents (i.e., 13 to 17) and children to determine whether their efficacy can be generalized to additional populations. Mindfulness training in adolescents with Attention-Deficit Hyperactivity Disorder was shown to assist these individuals with reducing externalizing behavior problems, behavior regulation, and attention problems; these differences were found to be maintained when assessed at an 8-week follow-up (van de Weijer-Bergsma et al., 2012). Additionally, as this study was conducted to initially evaluate the Surf the Urge's overall effectiveness in reducing urge-related behaviors in adolescents, it is necessary for future research to assess what produces greater difficulties in recruiting and keeping adolescents, and their parents, enrolled in clinical treatment research. Previous studies have found that recruitment of families for research with children is difficult due to scheduling and time constraints; however, if the family believes the benefits outweigh the costs, they will likely participate (Brown, Schiff, & van Sluijs, 2015; Chadwick, 2005). Nevertheless, while the benefits of this study were presented to parents, further difficulties prevented parents and adolescents from participating. Overall, it will be imperative for future researchers to evaluate the effect of this treatment with younger individuals, so they may assess what roadblocks hinder parents and teens from participating (e.g., lower socioeconomic status, scheduling, low incentive).

Furthermore, due to this study's small sample size, individual differences between various urge-related behaviors were not evaluated (e.g., marijuana use versus deliberate self-harm). Determining which behaviors are most impacted by mindfulness interventions, specifically the Surf the Urge intervention,

will be imperative to assist in producing greater effectiveness in mindfulness interventions. Although this study was capable of demonstrating qualitatively that substance use appeared most impacted by the Surf the Urge treatment, greater recruitment of individuals with other high-risk behaviors would be helpful to further assess both brief and mindfulness interventions. Additionally, this study only evaluated one urge-related behavior per participant; however, it is possible that some of individuals engaging in high-risk behaviors experience urges for several urge-related behaviors (e.g., substance use and deliberate self-harm). Consequently, future research may benefit from evaluating how this intervention impacts multiple urge-related behaviors and a wide variety of urges in the same participant.

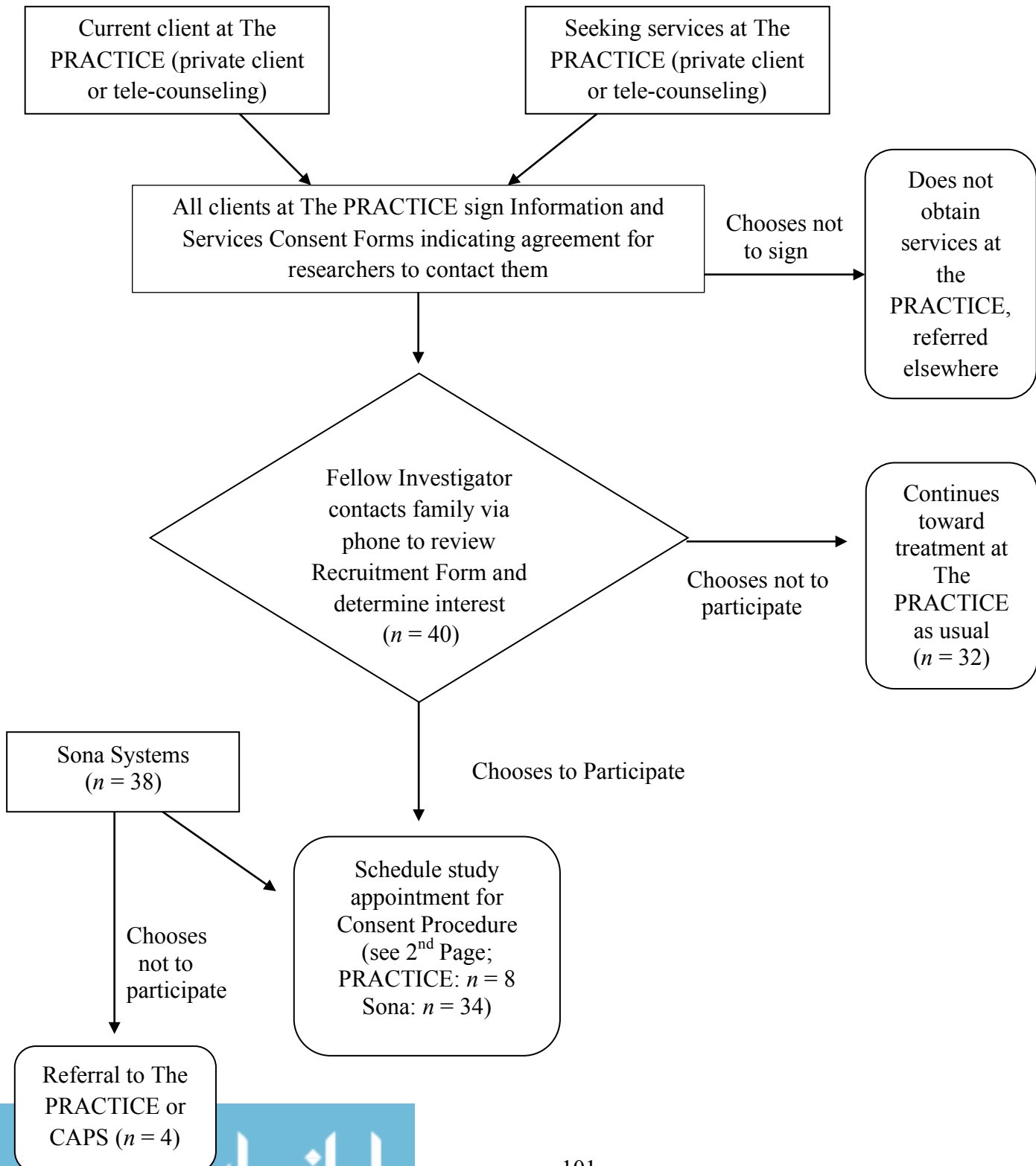
Additional individual characteristics should also be examined in future research. As this study was unable to determine that any of the individual characteristics evaluated produced an impact on the effectiveness of the Surf the Urge intervention, clinicians would benefit from examining what additional variables may impact the level of progress an individual will obtain from the Surf the Urge intervention, or other brief mindfulness therapies. This could include an assessment of additional coping skills utilized in addition to the intervention (e.g., deep breathing, distraction techniques), interpersonal support, or stage of change. Further examinations of the variables utilized in this study (e.g., mindfulness, personality) could also be conducted with different measures or larger sample sizes.

Finally, researchers would benefit from continuing to assess brief therapies, including the Surf the Urge intervention, to determine their impact in the field and ability to assist clients. Psychologists may be better capable of serving clients by evaluating the efficacy of short-term or brief therapy solutions for high-risk behaviors or those that result in high-level consequences (e.g., jail, death). With mental health care professionals receiving pressure from payment providers to provide the most effective (yet shortest) intervention for mental health concerns that are most prevalent (e.g., depression) and may produce severe consequences, brief interventions are likely one arena in which the field needs to future evaluate. As this study was able to determine that the Surf the Urge intervention was effective, future researchers would also benefit from comparing its efficacy with other treatments that are commonly utilized (e.g., CBT, DBT, MI). Clinicians would benefit from understanding which are the most effective treatments and

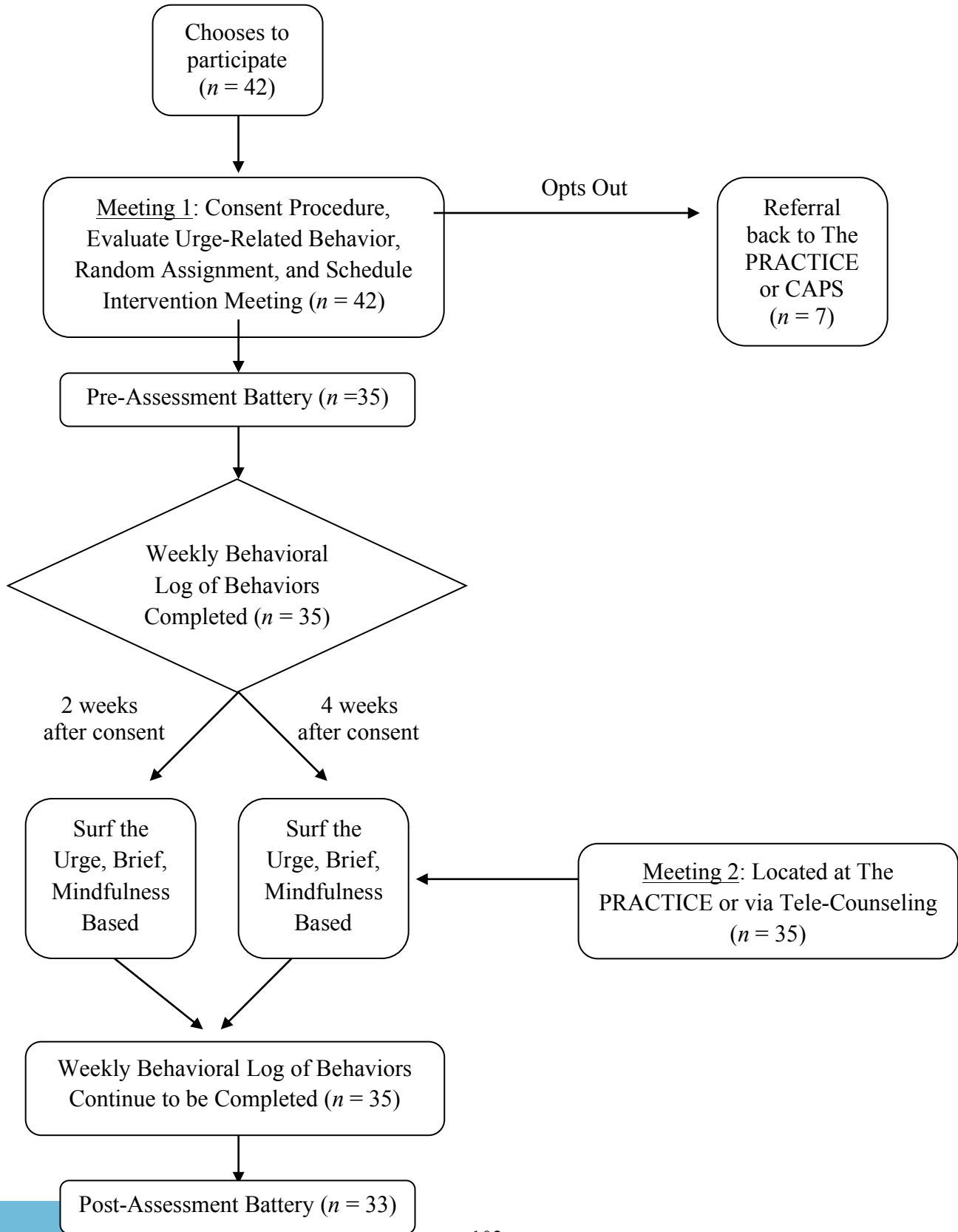
which produce the greatest long-term impact. Furthermore, will these treatment effects be strengthened if both treatments are utilized together? A better understanding of which treatments are the most effective with urge related behaviors will assist clinicians in better serving most clients, as well as guide future research into forensic rehabilitation, mental health treatment of high-risk behaviors, and treatment efficacy.

APPENDIX I

Recruitment & Initial Contact Flow Chart



Participant Activity Flow Chart



APPENDIX II

List of Urge-Related Behaviors

- Smoking Cigarettes
- Drinking Alcohol
- Using any sort of drug or substance (this includes prescription drugs not prescribed to you or using more than what is prescribed)
- Gambling in person or online
- Experiencing a sense of losing control when eating
 - Binge eating episode
- Self-induced vomiting
- Aggressive behavior
 - Arguing with people, punching people, throwing things, yelling at someone, punching walls, etc.
- Cutting yourself
- Pulling out your hair
- Taking things from stores without paying
- Risky sexual behaviors

APPENDIX III

Consenting Script

If PRACTICE or SONA participant: all meetings will be held at The PRACTICE

If Communities in School (CIS; Elko/tele-counseling) participant: all meetings will be conducted over the phone, unless otherwise specified by participant or parent. Consequently, the initial step for Elko participants will be to go to a private area (either within Fellow Investigators home or within a therapy room at the PRACTICE) and call the participant and his/her parents. If participant or parent desire this meeting to be conducted over video conferencing this will be done in a private tele-conferencing room via the PRACTICE and a private tele-counseling room in an Elko school.

1. Introduce self to participant, and his/her parent(s), as Fellow Investigator
 - a. Include name and qualifications
2. Lead participant, and his or her parent(s), to private therapy room
 - a. If CIS participant, skip this step as this will all be conducted over the phone, unless otherwise specified by participant or parent.
3. Describe that this the consent meeting for the study
 - a. Report that the participant, and his/her parent(s), must agree to participate before beginning the study
 - b. During this meeting we will review the study's procedure, confidentiality, risks and benefits, and any questions they may have
4. Participants will be asked if they engage in an urge-related behavior in a close-ended question format
 - a. Parents will be asked to briefly leave the room
 - b. Participants will then be asked: "Before we begin, we want to ensure that you are eligible to be in the study. However, we do want to review that everything that is discussed will remain confidential."
 - i. Ensure they know what confidentiality means.
 1. Have participant describe definition of confidentiality first and if they cannot, provide the definition.
 - c. Describe that: "Nevertheless, I must break this confidentiality if you report that you are harming yourself or someone else. This could include child abuse, elder abuse, wanting to kill yourself, or something else. If you do report something of this nature I will discuss it with you first but then I will have to tell a third party which could include child protective services or the police."
 - i. Ensure they understand
 - d. "Therefore, do you engage in any urge-related behaviors? Please only answer yes or no. This could include [read the list of urge-related behavior]."
 - i. See List Of Urge-Related Behavior attached

5. If the participant answers yes, continue with consenting procedure and this script. Additionally, as the parent of the minor to return to the therapy room.
 - a. If the participant answers no, clarify that they do not engage in any of the listed behavior or any behavior that may be similar.
 - b. Then state something similar to: “Because you do not engage in any of these behaviors you do not qualify for the study. Therefore, we cannot go any further in our discussion today. Thank you so much for your time.”
 - i. Inform participants that no information will be kept about them.
 - ii. If CIS participant and they requested to conduct meeting via tele-counseling report that the video will be immediately deleted after the session is over

6. Describe the purpose of the study
 - a. You are being invited to participate in a study that will examine a brief therapy intervention for teens and young adults who engage in urge-related behaviors. This could include substance use, deliberate self-harm, or stealing.
 - b. We need your help to determine if this intervention is helpful.

7. Describe who the participants will be
 - a. Any adolescent or young adult between the ages of 14 and 24
 - b. Obtains services at the PRACTICE or is enrolled in a psychology 101 course at UNLV
 - c. Reports having some urge, desire, or feeling to engage in a behavior that could be risky or harmful

8. Briefly describe the procedure
 - a. Immediately after this discussion, you will complete several questionnaires, alone in this room, on the computer. These questions will ask you about your mood, behaviors, and feelings.
 - i. This will take approximately 40 minutes
 - b. You will then complete weekly questionnaires via the internet for several weeks. These questionnaires will take about 10 minutes. These questions will ask you about your mood, behaviors, and feelings.
 - c. You will then come back to the PRACTICE [have a video conferencing meeting] for a brief intervention session with myself or another researcher.
 - i. This meeting will be videotaped but only members of the research team will be able to watch the video
 - ii. You may have to discuss things that make you uncomfortable during this meeting
 - d. After the meeting you will go back home and have to complete some more questionnaires. This will occur for several more weeks. All the questionnaires will be completed via the internet.
 - i. They will take you about 10 minutes to complete.
 - ii. Once again they will be about your moods, feelings, and behaviors.
 - e. In the last week of the study, you will complete a final set of questionnaires.
 - i. This will take a longer amount of time, similar to the first week.

- ii. It will be about your mood, feelings, and behaviors again.
- f. You will only have to meet with a researcher one time.
- g. You will be reminded to complete the assessment measures by email or text message.
- h. The total duration of the study is 6 weeks

9. Review benefits and risks

- a. Direct benefits to you are possible, but not guaranteed.
 - i. The intervention may help you change your behavior and assist you in responding to your urges and feelings better.
 - ii. You may also learn new things and help others that are similar to you
- b. However, there are some risks as well
 - i. Some of the things that we ask you about during the intervention or in the questionnaires may make you uncomfortable or be difficult to discuss.
 - ii. Some of the things we discuss could even be illegal or dangerous; therefore, you may worry that we will talk to others.
 - 1. Everything you provide to us is confidential unless you talk about wanting to hurt yourself or hurt someone else.
 - a. This is to help protect you.
 - iii. You may also want to engage in some of the behaviors more after answering the questions or talking to the researcher.
 - 1. Talking to the researcher about this will help.
 - 2. You should also talk to your parents or a trusted adult if this occurs.
 - 3. If this does occur, and you are not already engaged in services, we will do our best to get you a therapist as soon as possible

10. Review Cost and Compensation

- a. There will be no financial cost
- b. There is a time commitment which will be approx.. 2 to 3 hours over a 6 week period
- c. There will be no compensation
- d. If you are enrolled through SONA, you will obtain course credit for your participation based on the pro-rated amount of your participation time
 - i. You will only receive credit after your scheduled study completion time has ended

11. Discuss Contact Information

- a. You may discuss any concerns with me
 - i. Indicate phone number on consent form
- b. You may also contact the Office of Research Integrity-Human Subjects for questions regarding the rights of research subjects, with any complaints or comments, or if you do not feel comfortable speaking with me
 - i. Indicate where their contact information is

12. Review Voluntary Participation

- a. Your participation in this study is voluntary.
 - i. That means that you are not required to be involved and can leave at any time
 - ii. If you do not want to be in this study, you do not have to participate.
- b. You may refuse to participate in the whole study or any part at any time
- c. You are encouraged to ask questions
- d. You are not required to answer any questions that make you feel uncomfortable
 - i. You may discuss anything that makes you feel uncomfortable with me or any other researcher within this study
- e. You do not need to answer anything that you do not understand
- f. We can refer you to The PRACTICE or CAPS if you do not wish to participate so you may obtain treatment services
- g. Your participation in this study, or refusal to participate, will not affect your treatment at the PRACTICE

13. Review Videotaping

- a. It is necessary to videotape the researcher's ability to provide the intervention
- b. The video will be assessed by another individual, who does not know your identity
- c. Only members of the research team will have access to the video
- d. If you believe any member on the research team (indicate on form the names of these people and review them with participant) may know you please inform us so that these individuals will not have access to the video

14. Review Confidentiality

- a. The information you provide during this study will remain confidential
 - i. Include assessment measure information and the information discussed during your interventions session
- b. Because you will be completing the assessment items online we cannot guarantee your confidentiality of these answers
 - i. However:
 1. The online program we are using is HIPAA compliant
 - a. It is more secure in protecting your answers and follows national security standards.
 2. Please answer the questions in a safe, private, and quiet place
 3. The only people who will have access to your answers after you send them to us is the research team
- c. If you consent to SONA credits it is possible that the administrator of SONA will know you are enrolled in this study
 - i. Will not know your answers or what was discussed in the session
 - ii. If you are concerned we do not need to provide you with credits
- d. All information obtained will be de-identified and stored in a locked cabinet for 4 years
 - i. Only available to research team members
 - ii. Coded with a number that represents you and not stored with your name

- iii. The only documents with your name will be this form and your contact information
- iv. After the four years, everything will be destroyed.
- v. We will keep data files indefinitely but these files will be de-identified
 - 1. We will disseminate the finding to the research community although your identity will not be linked to anything published
- e. We will only disclose information to a third party during the following situations
 - i. If you discuss wanting to harm yourself or others as all researchers are mandated reporters.
 - ii. If we learn about abuse of a child or elderly person
 - 1. We will report this information to the police and child protective services
 - 2. We will talk to you first before we talk to anyone else
 - a. Some of the behaviors we talk about in your session will be related to harming yourself, such as cutting yourself. However, we will only discuss these things with your parents or a third party if we believe you are in danger of harming yourself.
 - b. For example, if you report that your are cutting yourself daily it is important that your parents know this information to keep you safe and ensure that you obtain therapy services if you are not already enrolled; however, the police will not get involved.
 - i. However, if you state that you are going to go home and kill yourself, and you are serious, your parents and the police will likely become involved.

15. Review Consent

- a. Confirm that they have understood and read the consent form
- b. Ask for any questions
- c. Have both the parent (if minor) and participant sign the document

16. If consented, have parent leave to the room. The next part of the procedure should be conducted with the participant alone.

17. Obtain Urge-Related Behavior

- a. Ask participant more specifically about their urge related behavior
- b. Bring up previous conversation where they endorsed urge related behavior engagement and state that I would like to obtain more information
- c. Ask: “What urge-related behavior or behaviors do you engage in?”
- d. Provide them with the list of urge related behaviors
- e. Determine frequency of urge-related behavior engagement, or urge experiences
 - i. Ensure the urge-related behavior, or urges, occurs at a minimum of one time per week
- f. Determine if they engage in more than one urge-related behavior, or experience more than one urge

- i. If report several urge-related behaviors, or urges, determine which occurs most frequently
 - 1. That which occurs most frequently will be utilized within this study
 - g. If necessary provide empathy if participant appears distressed/uncomfortable
18. Have participants complete pre-assessment battery

Cue Exposure Script

**Every place it states [urge-related behavior], the participant's specific, and/or most frequent, urge-related behavior will be substituted.

___ I am going to read you a script to increase your desire to engage in [urge-related behavior]. This is so the exercise we will complete later can be more helpful when you go home. First, I want you to tell me:

___ When you have been answering the questions on the computer during the past few weeks, what urge-related behavior have you been using?

___ How much you want to engage in [urge-related behavior] on a scale from 0 (not at all) to 100 (I cannot stop myself). Think of it as a percentage.

___ As I read the script, sit back and close your eyes. As I read, imagine that the situation is *really* occurring. Take yourself through each step.

___ For example, if I stated you took a sip of water, imagine that you picked up a glass of ice cold water with condensation (water that drips down the outside of the glass) dripping down the outside of the glass. The condensation feels cold and wet on your hands. Picture in your mind lifting the glass and raising it towards your mouth. Imagine touching it to your lips and tilting it so that the water slowly flows into your mouth. Feel the water on your lips, teeth, tongue, and throat.

___ Imagine how the glass feels in your hands and how the water feels in your mouth

___ Now, if I asked you to imagine washing your hands tell me what you would visualize.

___ [Take the participant through each step, having him/her tell you each step and inserting any missing step for him/her → walking to a bathroom or sink, turning on the water, how the water feels on his/her hands, putting soap on his/her hands, scrubbing hands together, rinsing hands]

___ You are at home alone. You are sitting in your living room, on your couch. You have just had a long day of school and homework. You got into a fight with your best friend during school today. Imagine some of the feelings and thoughts you would be having after this fight.

___ How are you feeling?

___ What thoughts are you having?

___ What is your body feeling like?

___ As you sit on the couch feeling [insert words they described (worried, angry, sad)], you have thought to [urge-related behavior].

___ Describe the behavior to me [ensure that they describe the behavior in EXTREME detail].

___ Where are you?

- ___ What are you doing?
 - ___ Hands
 - ___ Legs
 - ___ Feet
 - ___ Had to get drug paraphernalia
 - ___ Had to get self harm paraphernalia
 - ___ How do you engage in this behavior
- ___ What are you using?
- ___ What sounds do you hear?
- ___ What do you smell?

___ You think about what it has been like to [urge-related behavior] in the past.

- ___ Describe that to me
 - ___ Where were you
 - ___ What were you doing
 - ___ Hands
 - ___ Legs
 - ___ Feet
 - ___ Had to get drug paraphernalia
 - ___ Had to get self harm paraphernalia
 - ___ How do you engage in these behaviors
 - ___ What are you using?
 - ___ What sounds do you hear?
 - ___ What do you smell?
 - ___ What does your body feel like?
 - ___ Sensations in arms, legs, face, chest?
 - ___ How do your muscles feel?
 - ___ EX: Where are your muscles tight?
 - ___ How are you breathing?
 - ___ How is your heart beating?
 - ___ What do your palms feel like?
 - ___ Are you sweating?

___ How have you felt when you [engaged in urge-related behavior]?

- ___ Describe that to me
 - ___ What has your body felt like?
 - ___ Sensations in arms, legs, face, chest?
 - ___ How do your muscles feel?
 - ___ EX: Where are your muscles tight?
 - ___ How are you breathing?
 - ___ How is your heart beating?
 - ___ What do your palms feel like?
 - ___ Are you sweating?
 - ___ What were you thinking when you engaged in urge-related behavior?
 - ___ [If drug use, what does [drug] taste like?]
 - ___ How do you feel after completing [urge-related behavior]

____ Less stress? Less anxiety? Excitement? Enjoyment?
Happiness? Relief? Worried? Anxious? Frustrated? Fear?

____ You imagine how much better you would feel if you [urge-related behavior]. You go into the [room most likely engage in urge-related behavior] and [use words they used to describe how they engaged in urge-related behavior]

____ (ex: go into the bathroom; turn on the shower faucet; wait until the shower becomes warm but not hot; you step into the shower; you grab your razor and slide it hard enough, but not too hard, across your thigh; blood slowly drips down your thigh).

____ You feel [describe feelings described after urge-related behavior is complete]

____ Now that we have discussed this, how much would you like to engage in [urge-related behavior] on a scale from 0 (not at all) to 100 (I could not stop myself)?

____ Ensure the rating has gone up

____ If the rating has not increase go through the script again from them describing engaging in [urge-related behavior]

Total Steps = 66

____ Clinician: Intervention Adherence

____ Trainer: Intervention Adherence

____ Number of steps not agreed upon by both clinician and trainer

Surf the Urge Protocol

*** Every place it states [urge-related behavior], the participant's specific, and/or most frequent, urge-related behavior will be substituted.

___ We often act on urges to do/say things, similar to the urges discussed a second ago
___ Now we are going to practice noticing urges and what to do about them
___ You can observe urges without acting on them and eventually they will go away, even if they, or you, are uncomfortable

___ Sit up in chair, shoulders back, arms in lap or folded
___ Eyes closed if would like

___ Notices the urges you are having
___ Urge to engage in behavior
___ Urge to move/change position
___ Urge to scratch

___ Experience whatever is happening, including urges you may be feeling
___ Just because you are experiencing these feelings, doesn't mean you must act on them → You can choose to resist the urge to engage in these behaviors, such as moving or scratching
___ This also includes urges to engage in behaviors we just discussed → [urge-related behavior]
___ You have an desire, however strong, to engage in [urge-related behavior]; nonetheless, you can choose to resist the urge to engage in that behavior just like not moving in the chair

___ Notice where you feel the urge → where do you feel it
___ Stomach, chest, feet

___ Observe what it feels like → what does it feel like
___ Tightness, tickling, itching
___ How intense is it (rate it on a scale of 0 – 10; 0 I don't feel it at all to 10 the most intense urge I've ever experienced)

___ How long does the feeling last
___ Sit with feeling
___ Let feeling pass → It will pass/not last forever

___ You can choose to resist the urge and instead describe it in words
___ Urges are not good or bad (judgment) → rather describe how you feel

____ They are feelings and these are not positive or negative; rather they occur and describe them as such

____ This allows you to treat yourself more gently

____ I was yelling and not allowing the other person to complete his sentences RATHER THAN I was being a bitch

____ Urges may come and go, like waves

____ Imagine the urge like a wave

____ Let the urge pass through your body, like a wave going over you

____ *Describe the urge as a wave flowing through body*

____ Some waves/urges may be strong, and feel like they are succumbing you or drowning you; however, the wave always goes back into the ocean not being over you forever

____ While others waves/urges are weaker, less overpowering, allowing you to stand the whole time, as it is gentle and flows over you

____ All waves/urges will pass over you and go back into the ocean

____ You can ride the wave, like a surfer, without trying to change (e.g., suppress, reduce) the wave/urge

____ *Describe how you would ride the wave/urge*

____ Let the urge go until it subsides independently without engaging in [urge-related behavior] or otherwise trying to change the urge behavior (e.g., reduce it) or eliminate it in any way

____ Urges, similar to an itch, will not last forever → just like a wave will not be over you forever

____ Describe observations, thoughts, feelings about exercise

Total Steps = 37

____ Clinician: Intervention Adherence

____ Trainer: Intervention Adherence

____ Number of steps not agreed upon by both clinician and trainer

APPENDIX IV

Urge-Related Behavior Engagement Questionnaire

“How many times have you engaged in [urge-related behavior] during the past week?”

The Fellow Investigator will fill in the blank (i.e., [urge-related behavior]) with the participants urge-related behavior disclosed during the consent procedure.

This will ensure an accurate assessment of each participant's urge-related behavior.

The following responses will be available: 0) not at all, 1) one to two times, 2) three to four times, 3) once per day for all 7 days, 4) more than once per day, but not for all 7 days, 5) more than once per day, on all 7 days.

Urges for Urge-Related Behavior Questionnaire

1. All I want to do now is engage in [urge-related behavior]
2. It would be difficult to turn down engage in [urge-related behavior] right this minute
3. Engaging in [urge-related behavior] would make things seem just perfect
4. I want to engage in [urge-related behavior] I can almost taste/feel it
5. Nothing would be better than engaging in [urge-related behavior] right now
6. If I had a chance to engage in [urge-related behavior], I don't think I would do it
7. I crave engaging in [urge-related behavior] right now
8. I have no desire for [urge-related behavior] right now

In the current study, “a drink” and “cocaine/coke” will be left blank (i.e., “urge-related behavior”) and the Fellow Investigator will be capable of filling in the blank with the necessary urge-related behavior (e.g., alcohol, marijuana, deliberate self-harm) for each participant assessed. Responses will be based on a 7-point Likert Scales ranging from 0 (Strongly Agree) to 7 (Strongly Disagree).

Depression, Anxiety, and Stress Scale-21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all - NEVER

1 Applied to me to some degree, or some of the time - SOMETIMES

2 Applied to me to a considerable degree, or a good part of time - OFTEN

3 Applied to me very much, or most of the time - ALMOST ALWAYS

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (e.g., in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

Domain-Specific Risk-Taking (Adult) Scale – Risk Taking

For each of the following statements, please indicate the **likelihood** that you would engage in the described activity or behavior if you were to find yourself in that situation. Provide a rating from *Extremely Unlikely* to *Extremely Likely*, using the following scale:

1	2	3	4	5	6	7
Extremely Unlikely	Moderately Unlikely	Somewhat Unlikely	Not Sure	Somewhat Likely	Moderately Likely	Extremely Likely

1. Admitting that your tastes are different from those of a friend. (S)
2. Going camping in the wilderness. (R)
3. Betting a day's income at the horse races. (F/G)
4. Investing 10% of your annual income in a moderate growth diversified fund. (F/I)
5. Drinking heavily at a social function. (H/S)
6. Taking some questionable deductions on your income tax return. (E)
7. Disagreeing with an authority figure on a major issue. (S)
8. Betting a day's income at a high-stake poker game. (F/G)
9. Having an affair with a married man/woman. (E)
10. Passing off somebody else's work as your own. (E)
11. Going down a ski run that is beyond your ability. (R)
12. Investing 5% of your annual income in a very speculative stock. (F/I)
13. Going whitewater rafting at high water in the spring. (R)
14. Betting a day's income on the outcome of a sporting event (F/G)
15. Engaging in unprotected sex. (H/S)
16. Revealing a friend's secret to someone else. (E)
17. Driving a car without wearing a seat belt. (H/S)
18. Investing 10% of your annual income in a new business venture. (F/I)
19. Taking a skydiving class. (R)
20. Riding a motorcycle without a helmet. (H/S)
21. Choosing a career that you truly enjoy over a more secure one. (S)
22. Speaking your mind about an unpopular issue in a meeting at work. (S)
23. Sunbathing without sunscreen. (H/S)
24. Bungee jumping off a tall bridge. (R)
25. Piloting a small plane. (R)
26. Walking home alone at night in an unsafe area of town. (H/S)
27. Moving to a city far away from your extended family. (S)
28. Starting a new career in your mid-thirties. (S)
29. Leaving your young children alone at home while running an errand. (E)
30. Not returning a wallet you found that contains \$200. (E)

Note. E = Ethical, F = Financial, H/S = Health/Safety, R = Recreational, and S = Social.

Domain-Specific Risk-Taking (Adult) Scale – Risk Perceptions

People often see some risk in situations that contain uncertainty about what the outcome or consequences will be and for which there is the possibility of negative consequences. However, riskiness is a very personal and intuitive notion, and we are interested in **your gut level assessment of how risky** each situation or behavior is.

For each of the following statements, please indicate **how risky you perceive** each situation. Provide a rating from *Not at all Risky* to *Extremely Risky*, using the following scale:

1	2	3	4	5	6	7
Not at all Risky	Slightly Risky	Somewhat Risky	Moderately Risky	Risky	Very Risky	Extremely Risky

Domain-Specific Risk-Taking (Adult) Scale – Expected Benefits

For each of the following statements, please indicate **the benefits** you would obtain from each situation. Provide a rating from **1 to 7**, using the following scale:

1	2	3	4	5	6	7
No benefits At all			Moderate Benefits			Great Benefits

Client Satisfaction Questionnaire

Please help us improve our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative.

Please answer all of the questions. We also welcome your comments and suggestions. Thank you very much; we really appreciate your help.

Circle your answer:

1. How would you rate the quality of service you have received?

4	3	2	1
Excellent	Good	Fair	Poor

2. Did you get the kind of service you wanted?

1	2	3	4
No, definitely	No, not really	Yes, generally	Yes, definitely

3. To what extent has our program met your needs?

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5. How satisfied are you with the amount of help you have received?

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6. Have the services you received helped you to deal more effectively with your problems?

4	3	2	1
Yes, they helped a great deal	Yes, they helped	No, they really didn't help	No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the service you have received?

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

8. If you were to seek help again, would you come back to our program?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

Five Facet Mindfulness Questionnaire

Description:

This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness as it is currently conceptualized. The five facets are observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. More information is available in:

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1: never or very rarely true; 2: rarely true; 3: sometimes true; 4: often true; 5: very often or always true

- _____ 1. When I'm walking, I deliberately notice the sensations of my body moving.
- _____ 2. I'm good at finding words to describe my feelings.
- _____ 3. I criticize myself for having irrational or inappropriate emotions.
- _____ 4. I perceive my feelings and emotions without having to react to them.
- _____ 5. When I do things, my mind wanders off and I'm easily distracted.
- _____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- _____ 7. I can easily put my beliefs, opinions, and expectations into words.
- _____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
- _____ 9. I watch my feelings without getting lost in them.
- _____ 10. I tell myself I shouldn't be feeling the way I'm feeling.
- _____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- _____ 12. It's hard for me to find the words to describe what I'm thinking.
- _____ 13. I am easily distracted.
- _____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
- _____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- _____ 16. I have trouble thinking of the right words to express how I feel about things.
- _____ 17. I make judgments about whether my thoughts are good or bad.
- _____ 18. I find it difficult to stay focused on what's happening in the present.
- _____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
- _____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
- _____ 21. In difficult situations, I can pause without immediately reacting.
- _____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.
- _____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.
- _____ 24. When I have distressing thoughts or images, I feel calm soon after.
- _____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

- _____ 26. I notice the smells and aromas of things.
- _____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.
- _____ 28. I rush through activities without being really attentive to them.
- _____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
- _____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.
- _____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
- _____ 32. My natural tendency is to put my experiences into words.
- _____ 33. When I have distressing thoughts or images, I just notice them and let them go.
- _____ 34. I do jobs or tasks automatically without being aware of what I'm doing.
- _____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
- _____ 36. I pay attention to how my emotions affect my thoughts and behavior.
- _____ 37. I can usually describe how I feel at the moment in considerable detail.
- _____ 38. I find myself doing things without paying attention.
- _____ 39. I disapprove of myself when I have irrational ideas

Multidimensional Personality Questionnaire- Short Form

In this booklet you will find a series of statements a person might use to describe her/his attitudes, opinions, interests, and other characteristics. Most of these statements are followed by two choices: "A" and "B". The meaning of these two different choices is given below: True or False.

Some statements include two possible endings, marked (A) and (B). For these statements, choose one of these two

Answers: Alternative A or Alternative B.

Read each statement and decide which choice describes you best. Then make your answer by completely blackening the appropriate circle.

Please answer every statement, even if you are not completely sure of the answer.

1. It is easy for me to become enthusiastic about things I am doing
2. I am quite effective at talking people into things.
3. Some people say that I put my work ahead of too many other things.
4. I have occasionally felt discouraged about something.
5. I usually like to spend my free time with friends rather than alone.
6. Often I get irritated at little annoyances.
7. Many people try to push me around.
8. When I get angry I am often ready to hit someone.
9. I like to stop and think things over before I do them.
10. I am often nervous for no reason.
11. I might enjoy riding in an open elevator to the top of a tall building under construction.
12. I don't like to see religious authority overturned by so-called progress and logical reasoning.
13. I can be deeply moved by a sunset.
14. My table manners are not always perfect.
15. I enjoy being in the spotlight.
16. I set very high standards for myself in my work.
17. When I am unhappy about something, (A) I tend to seek the company of a friend, (B) I prefer to be alone.
18. My mood often goes up and down.
19. I know that certain people would enjoy it if I got hurt.
20. When someone hurts me, I try to get even.
21. I am more likely to be fast and careless than to be slow and plodding.
22. It might be fun and exciting to be in an earthquake.

23. Strict discipline in the home would prevent much of the crime in our society.
24. When listening to organ music or other powerful music, I sometimes feel as if I am being lifted into the air.
25. I have always been extremely courageous in facing difficult situations.
26. I often feel happy and satisfied for no particular reason.
27. I often keep working on a problem even if I am very tired.
28. I am usually happier when I am alone.
29. I suffer from nervousness.
30. People often try to take advantage of me.
31. I admit that I sometimes enjoy hurting someone physically.
32. Basically I am a happy person.
33. I often prefer to "play things by ear" rather than to plan ahead. ID:
34. Of these two situations I would dislike more: (A) Having a pilot announce that the plane has engine trouble and it may be necessary to make an emergency landing, or (B) Working in the fields digging potatoes.
35. The best way to achieve a peaceful world is to improve people's morals.
36. Sometimes thoughts and images come to me without any effort on my part.
37. At times I have been envious of someone.
38. I live a very interesting life.
39. People find me forceful.
40. I am a warm person rather than cool and distant.
41. I often find myself worrying about something.
42. People often say mean things about me.
43. I see nothing wrong with stepping on people's toes a little if it is to my advantage.
44. When faced with a decision I usually take time to consider and weigh all possibilities.
45. I usually do not like to be a "follower."
46. I would enjoy trying to cross the ocean in a small but seaworthy sailboat.
47. I am opposed to more censorship of books and movies because it would go against free speech.
48. If I wish I can imagine (or daydream) some things so vividly that it's like watching a good movie or hearing a good story.
49. My opinions are always completely reasonable.
50. Every day I do some things that are fun.
51. When I work with others I like to take charge.
52. People say that I drive myself hard.
53. I am too sensitive for my own good.

54. My "friends" have often betrayed me.
55. I enjoy a good brawl.
56. I am very level-headed and usually have both feet on the ground.
57. Of these two situations I would dislike more: (A) Having to walk around all day on a blistered foot,
(B) Sleeping out on a camping trip in an area where there are rattlesnakes.
58. It is a pretty unfeeling person who does not feel love and gratitude toward her/his parents.
59. Sometimes I can change noise into music by the way I listen to it.
60. If I have a humiliating experience I get over it very quickly.
61. I have at times eaten too much.
62. I usually find ways to liven up my day.
63. In most social situations I like to have someone else take the lead.
64. I am not a terribly ambitious person.
65. I am more of a "loner" than most people.
66. I would be more successful if people did not make things difficult for me.
67. Sometimes I hit people who have done something to deserve it.
68. I almost never do anything reckless.
69. Of these two situations I would dislike more: (A) Being out on a sailboat during a great storm at sea, (B) Having to stay home every night for two weeks with a sick relative.
70. I would prefer to see: (A) Stricter observance of major religious holidays, (B) Greater acceptance of nontraditional families, like single-parent families.
71. I can often somehow sense the presence of another person before I actually see or hear her/him.
72. I have always been completely fair to others.
73. People rarely try to take advantage of me.
74. Most mornings the day ahead looks bright to me.
75. I am very good at influencing people.
76. I enjoy putting in long hours.
77. For me one of the best experiences is the warm feeling of being in a group of good friends.
78. Occasionally I have strong feelings (like anxiety or anger) without really knowing why.
79. I would rather turn the other cheek than get even when someone treats me badly.
80. I often act on the spur of the moment.
81. Of these two situations I would dislike more: (A) Being at the circus when two lions suddenly get loose down in the ring,(B) Bringing my whole family to the circus and then not being able to get in because a clerk sold me tickets for the wrong night.
82. Higher standards of conduct are what this country needs most.

83. The sound of a voice can be so fascinating to me that I can just go on listening to it.
84. I have at times been angry with someone.
85. Most days I have moments of real fun or joy.
86. I often act without thinking.
87. When it is time to make decisions, others usually turn to me.
88. I often keep working on a problem long after others would have given up.
89. I prefer to work alone.
90. Minor setbacks sometimes irritate me too much.
91. People often just use me instead of treating me as a person.
92. I don't like to start a project until I know exactly how to do it.
93. Of these two situations I would dislike more: (A) Riding a long stretch of rapids in a canoe, (B) Waiting for someone who's late.
94. I am disgusted by dirty language.
95. Some music reminds me of pictures or changing patterns of color
96. I always tell the entire truth.
97. I often feel sort of lucky for no special reason.
98. I do not like to be the center of attention on social occasions.
99. I work just hard enough to get by without overdoing it.
100. I have few or no close friends.
101. I sometimes get very upset and tense as I think of the day's events.
102. Some people are against me for no good reason.
103. I can't help but enjoy it when someone I dislike makes a fool of herself/himself. 104. I seldom feel really happy.
105. Of these two situations I would dislike more: (A) Being chosen as the "target" for a knife-throwing act, (B) Being sick to my stomach for 24 hours.
106. No decent person could ever think of hurting a close friend or relative.
107. I can so completely wander off into my own thoughts while doing a routine task that I actually forget that I am doing the task and then find a few minutes later that I have finished it.
108. Sometimes I'm a bit lazy.
109. Every day interesting and exciting things happen to me.
110. I am quite good at convincing others to see things my way.
111. I push myself to my limits.
112. I am happiest when I am with people most of the time.
113. I am often troubled by guilt feelings.
114. I know that people have spread false rumors about me on purpose.

115. I like to watch a good, vicious fight.
116. Before I get into a new situation I like to find out what to expect from it.
117. I perform for an audience whenever I can.
118. I am not at all sorry to see many of the traditional values change.
119. I can sometimes recall certain past experiences in my life so clearly and vividly that it is like living them again, or almost so.
120. Never in my whole life have I taken advantage of anyone.
121. In my spare time I usually find something interesting to do.
122. In social situations I usually allow others to dominate the conversation.
123. I like to try difficult things.
124. I prefer not to "open up" too much, not even to friends.
125. My mood sometimes changes from happy to sad, or sad to happy, without good reason.
126. I have often been lied to.
127. Sometimes I just like to hit someone.
128. I am a cautious person.
129. Of these two situations I would dislike more: (A) Being in a flood, (B) Carrying a ton of bricks from the backyard into the basement.
130. At times I somehow feel the presence of someone who is not physically there.
131. I have sometimes felt slightly hesitant about helping someone who asked me to.
132. My feelings are hurt rather easily.
133. For me life is a great adventure.
134. I do not like to organize other people's activities.
135. I find it really hard to give up on a project when it proves too difficult.
136. I often prefer not to have people around me.
137. I often lose sleep over my worries.
138. When people are friendly they usually want something from me.
139. When people insult me, I try to get even.
140. I usually make up my mind through careful reasoning.
141. Of these two situations I would dislike more: (A) Being seasick every day for a week while on an ocean voyage, (B) Having to stand on the window ledge of the 25th Floor of a hotel because there's a fire in my room.
142. People should obey moral laws more strictly than they do.
143. I have never felt that I was better than someone else.
144. I always seem to have something exciting to look forward to.
145. I don't enjoy trying to convince people of something.

146. I like hard work.
147. Never in my whole life have I wished for anything that I was not entitled to.
148. I am rather aloof and maintain distance between myself and others.
149. There are days when I'm "on edge" all of the time.
150. I have had a lot of bad luck.
151. Sometimes I seem to enjoy hurting people by saying mean things.
152. I generally do not like to have detailed plans.
153. It might be fun learning to walk a tightrope.
154. High moral standards are the most important thing parents can teach their children.
155. Sometimes I am so immersed in nature or in art that I feel as if my whole state of consciousness has somehow been temporarily changed.

UPPS-P

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree with the statement. If you **Agree Strongly** circle **1**, if you **Agree Somewhat** circle **2**, if you **Disagree somewhat** circle **3**, and if you **Disagree Strongly** circle **4**. Be sure to indicate your agreement or disagreement for every statement below. Also, there are questions on the following pages.

1. I have a reserved and cautious attitude toward life.
2. I have trouble controlling my impulses.
3. I generally seek new and exciting experiences and sensations.
4. I generally like to see things through to the end.
5. When I am very happy, I can't seem to stop myself from doing things that can have bad consequences.
6. My thinking is usually careful and purposeful.
7. I have trouble resisting my cravings (for food, cigarettes, etc.).
8. I'll try anything once.
9. I tend to give up easily.
10. When I am in great mood, I tend to get into situations that could cause me problems.
11. I am not one of those people who blurt out things without thinking.
12. I often get involved in things I later wish I could get out of.
13. I like sports and games in which you have to choose your next move very quickly.
14. Unfinished tasks really bother me.
15. When I am very happy, I tend to do things that may cause problems in my life.
16. I like to stop and think things over before I do them.
17. When I feel bad, I will often do things I later regret in order to make myself feel better now.
18. I would enjoy water skiing.
19. Once I get going on something I hate to stop.
20. I tend to lose control when I am in a great mood.
21. I don't like to start a project until I know exactly how to proceed.
22. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.
23. I quite enjoy taking risks.
24. I concentrate easily.
25. When I am really ecstatic, I tend to get out of control.
26. I would enjoy parachute jumping.
27. I finish what I start.
28. I tend to value and follow a rational, "sensible" approach to things.
29. When I am upset I often act without thinking.
30. Others would say I make bad choices when I am extremely happy about something.
31. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.
32. I am able to pace myself so as to get things done on time.
33. I usually make up my mind through careful reasoning.
34. When I feel rejected, I will often say things that I later regret.

35. Others are shocked or worried about the things I do when I am feeling very excited.
36. I would like to learn to fly an airplane.
37. I am a person who always gets the job done.
38. I am a cautious person.
39. It is hard for me to resist acting on my feelings.
40. When I get really happy about something, I tend to do things that can have bad consequences.
41. I sometimes like doing things that are a bit frightening.
42. I almost always finish projects that I start.
43. Before I get into a new situation I like to find out what to expect from it.
44. I often make matters worse because I act without thinking when I am upset.
45. When overjoyed, I feel like I can't stop myself from going overboard.
46. I would enjoy the sensation of skiing very fast down a high mountain slope.
47. Sometimes there are so many little things to be done that I just ignore them all.
48. I usually think carefully before doing anything.
49. Before making up my mind, I consider all the advantages and disadvantages.
50. When I am really excited, I tend not to think of the consequences of my actions.
51. In the heat of an argument, I will often say things that I later regret.
52. I would like to go scuba diving.
53. I tend to act without thinking when I am really excited.
54. I always keep my feelings under control.
55. When I am really happy, I often find myself in situations that I normally wouldn't be comfortable with.
56. I would enjoy fast driving.
57. When I am very happy, I feel like it is ok to give in to cravings or overindulge.
58. Sometimes I do impulsive things that I later regret.
59. I am surprised at the things I do while in a great mood.

North American Reading Test

- | | | |
|-------------------|----------------|----------------|
| 1. Debt | 22. Recipe | 43. Colonel |
| 2. Gist | 23. Paradigm | 44. Radix |
| 3. Topiary | 24. Abstemious | 45. Cidevant |
| 4. Debris | 25. Gouge | 46. Subpoena |
| 5. Corps | 26. Façade | 47. Aeon |
| 6. Caveat | 27. Beatify | 48. Epergne |
| 7. Aisle | 28. Heir | 49. Placebo |
| 8. Hors d' Oeuvre | 29. Cellist | 50. Epitome |
| 9. Superfluous | 30. Gaoled | 51. Vivace |
| 10. Reign | 31. Subtle | 52. Procreate |
| 11. Sieve | 32. Indict | 53. Equivocal |
| 12. Leviathan | 33. Demesne | 54. Talipes |
| 13. Depot | 34. Catacomb | 55. Psalm |
| 14. Hiatus | 35. Détente | 56. Reify |
| 15. Prelate | 36. Syncope | 57. Synecdoche |
| 16. Simile | 37. Bouquet | 58. Banal |
| 17. Gauche | 38. Impugn | 59. Indices |
| 18. Quadruped | 39. Ennui | 60. Rarefy |
| 19. Lingerie | 40. Gauge | 61. Assignate |
| 20. Zealot | 41. Capon | |
| 21. Sidereal | 42. Drachm | |

APPENDIX V

Table 1
Demographic Characteristics of Participants

	<i>N</i>	<i>Percent</i>
Age		
14-16	0	0%
17-19	18	50%
20-22	15	42%
23-24	3	8%
Gender		
Female	24	67%
Male	12	33%
Ethnicity		
Caucasian	15	42%
Asian Decent	7	19%
Hispanic	6	17%
African American	4	11%
Multiracial	3	8%
Other (i.e., Israeli)	1	3%
Relationship Status		
Single	18	50%
In a Relationship (e.g., dating, married)	18	50%
Currently Receiving Therapy Services		
Yes	3	8%
No	33	92%
Partner's Engagement in Urge-Related Behavior		
Partner Engages in Same Urge-Related Behavior	4	25%
Partner Does Not Engage in Urge-Related Behavior	12	33%
Urge-Related Behavior		
Alcohol Use	13	36%
Marijuana Use	5	14%
Aggression	3	8%
Problematic Eating Behaviors (i.e., Binge Eating, Self-Induced Vomiting)	3	8%
Trichotillomania	3	8%
Skin or Nail Picking or Biting	1	3%
Deliberate Self-Harm	3	8%
Risky Sex	2	6%
Cigarette Use	1	3%
Prescription Drug Use	1	3%
Gambling	1	3%

Note: *N* = 36

Table 2
Overview of Measures

Pre-Intervention	Change Measures (weekly)	Post-Intervention
Demographics (Participant Characteristics)	DASS-21; Wellbeing	FFMQ; Mindfulness
Five Facet Mindfulness Questionnaire (FFMQ; Mindfulness)	UQ; Urges	DOSPERT; Risk Taking
The Multidimensional Personality Questionnaire-Brief Form (MPQ-BF; Personality)	URB; Urge-Related Behavior Frequency	UPPS-P; Impulsivity
The National Adult Reading Test-Revised (NART-R; Intelligence)		DASS-21; Wellbeing
The Domain Specific Risk Taking Scale (DOSPERT; Risk-Taking)		UQ; Urges
The Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency Impulsive Behavior Scale (UPPS-P; Impulsivity)		URB; Urge-Related Behavior Frequency
The Depression, Anxiety, and Stress Scale-21 (DASS-21; Wellbeing)		Client Satisfaction Questionnaire-8 (CSQ-8; Intervention Satisfaction)
Urges for Urge-Related Behavior Questionnaire (UQ; Urges)		
Urge-Related Behavior Engagement Questionnaire (URB; Urge-Related Behavior Frequency)		

Table 3
Descriptive Statistics

	Pre-intervention				Post-intervention			
	Mean	SD	Min	Max	Mean	SD	Min	Max
MPQ-BF (T-Scores)								
Wellbeing	45.77	11.07	22	64	-	-	-	-
Social Potency	56.31	3.50	49	62	-	-	-	-
Achievement	53.54	8.31	31	69	-	-	-	-
Social Closeness	46.60	3.68	40	55	-	-	-	-
Stress Reaction	57.80	8.86	37	71	-	-	-	-
Alienation	63.03	8.71	43	78	-	-	-	-
Aggression	54.69	8.22	38	78	-	-	-	-
Control	45.91	5.78	34	59	-	-	-	-
Harm Avoidance	41.63	5.15	27	52	-	-	-	-
Traditionalism	43.37	6.09	32	59	-	-	-	-
Absorption	58.31	7.93	43	73	-	-	-	-
NART-R	35.58	7.83	18	48	-	-	-	-
FFMQ	3.20	0.45	2.33	4.41	3.16	0.41	2.59	4.26
Observing	3.66	0.77	2.00	4.88	3.35	0.76	1.38	4.75
Describing	3.35	0.82	1.88	5.00	3.44	0.68	2.38	5.00
Acting with Awareness	3.08	0.69	1.50	4.63	3.12	0.75	1.25	4.63
Non-Judging	2.94	0.74	1.38	4.25	2.95	0.68	1.25	3.88
Non-Reactivity	2.97	0.67	1.71	4.29	2.91	0.63	1.43	4.29
DOSPERT-Engagement	3.44	0.86	2.03	5.00	3.56	0.81	1.87	4.90
Ethical	14.23	5.68	0.75	3.50	14.97	5.94	0.75	4.25
Financial	14.89	7.69	0.75	4.13	16.79	7.25	0.75	3.88
Health/Safety	21.91	7.70	0.88	4.75	21.91	6.98	0.75	4.75
Recreational	22.29	10.85	0.75	5.25	23.00	10.72	0.75	5.25
Social	29.77	5.36	2.50	5.13	30.52	5.98	1.88	5.13
DOSPERT-Perception	4.83	0.76	2.67	6.27	4.67	0.81	2.40	5.80
Ethical	29.77	4.64	1.50	5.00	15.58	4.86	1.88	4.63
Financial	34.00	6.13	2.25	5.25	17.73	10.01	1.75	5.25
Health/Safety	31.46	6.03	1.75	5.00	12.61	5.97	1.63	5.25
Recreational	27.77	6.81	1.50	5.13	19.24	9.30	1.25	5.13
Social	20.40	5.23	1.25	4.25	25.24	7.01	1.13	3.63
DOSPERT-Benefit	2.81	0.80	1.00	4.80	2.97	0.80	1.57	4.63
Ethical	14.09	4.46	0.75	2.88	27.97	5.67	0.75	3.13
Financial	16.74	9.26	0.75	4.75	32.79	7.54	0.75	4.88
Health/Safety	12.09	4.87	0.75	3.38	30.27	7.43	0.75	3.50
Recreational	18.31	8.88	0.75	4.88	27.61	8.34	0.75	5.00
Social	24.77	7.61	0.75	5.25	19.30	4.41	1.50	5.13
UPPS-P								
Negative Urgency	2.65	0.59	1.58	3.83	2.47	0.57	1.17	3.69
Positive Urgency	2.13	0.56	1.07	3.00	1.95	0.57	1.00	3.29
Lack of Premeditation	1.93	0.49	1.10	3	2.11	0.50	1.18	3.18
Sensation Seeking	2.91	0.66	1.27	4.00	2.82	0.65	1.09	4.00
Lack of Perseverance	2.03	0.49	1.18	3.36	1.95	0.53	1.20	3.10
DASS-21	1.16	0.60	0.24	2.71	0.76	0.57	0.00	2.48
Depression	0.99	0.70	0.00	3.00	0.59	0.59	0.00	2.29
Anxiety	1.12	0.68	0.00	2.86	0.70	0.60	0.00	2.57
Stress	1.36	0.63	0.14	2.57	0.99	0.72	0.00	2.57
URB	4.01	1.54	1.00	5.00	3.35	1.54	1.13	5.00
UQ	2.17	1.58	0.00	56.00	1.26	1.36	0.00	56.00
CSQ-8	-	-	-	-	3.02	0.61	1.75	4.00

Table 4
Comparisons of Two and Four Week Intervention Groups on Study Variables

	<i>t</i>	<i>p</i> value	Effect Size (Cohen's <i>d</i>)	Hedges's <i>g</i>
Behavior	-0.94	.35	-0.32	-0.31
Age	-1.27	.21	-0.43	-0.42
Gender	-1.56	.13	-0.53	-0.52
Ethnicity	-1.63	.11	-0.55	-0.53
Relationship Status	-1.17	.25	-0.40	-0.39
URB: Pre-Assessment	0.42	.68	0.14	0.14
URB: Week 2	1.54	.13	0.52	0.51
URB: Week 3	0.57	.58	0.19	0.19
URB: Week 4	-0.73	.47	-0.24	-0.24
URB: Week 5	-0.27	.79	-0.09	-0.09
URB: Week 6	-0.65	.52	-0.22	-0.21
URB: Post-Assessment	0.39	.70	0.13	0.13
UQ: Pre-Assessment	-0.57	.57	-0.19	-0.19
UQ: Week 2	-0.68	.50	-0.23	-0.23
UQ: Week 3	-1.76	.09	-0.60	-0.58
UQ: Week 4	-1.14	.26	-0.39	-0.38
UQ: Week 5	-0.02	.99	-0.01	-0.01
UQ: Week 6	-0.73	.47	-0.25	-0.24
UQ: Post-Assessment	-1.00	.32	-0.34	-0.33
DOSPRT: Risk Taking	-0.07	.94	-0.02	-0.02
DOSPRT: Risk Perception	0.55	.59	0.18	0.18
DOSPRT: Expected Benefits	-0.55	.59	-0.18	-0.18
FFMQ: Pre-Assessment	0.84	.41	0.28	0.28
UPPS-P: Negative Urgency	0.11	.91	0.04	0.04
UPPS-P: Positive Urgency	0.55	.59	0.19	0.18
UPPS-P: Lack of Premeditation	-1.58	.12	-0.53	-0.52
UPPS-P: Lack of Perseverance	-0.57	.57	-0.19	-0.19
UPPS-P: Sensation Seeking	-0.37	.72	-0.12	-0.12
MPQ: Wellbeing	-1.01	.32	-0.34	-0.33
MPQ: Social Potency	-0.32	.75	-0.11	-0.11
MPQ: Achievement	-0.01	.99	-0.003	-0.003
MPQ: Social Closeness	-1.22	.23	-0.41	-0.40
MPQ: Stress Reaction	-0.25	.81	-0.08	-0.08
MPQ: Alienation	-0.48	.64	-0.16	-0.16
MPQ: Aggression	-0.47	.64	-0.16	-0.16
MPQ: Control	0.55	.59	0.19	0.18
MPQ: Harm Avoidance	0.81	.43	0.27	0.27
MPQ: Traditionalism	0.09	.93	0.03	0.03
MPQ: Absorption	-0.06	.96	-0.02	-0.02
NART	0.71	.48	0.24	0.23

Table 5

Descriptive Statistics of Two and Four Week Intervention Groups on Demographic and Urge-Related Variables

	Intervention Week/Group	Mean	Standard Deviation	Standard Error Mean
Behavior	2	2.94	2.16	0.53
	4	3.72	2.70	0.64
Age	2	19.41	1.62	0.39
	4	20.17	1.89	0.45
Gender	2	1.53	0.51	0.13
	4	1.78	0.43	0.10
Ethnicity	2	2.12	1.41	0.34
	4	2.94	1.59	0.38
Relationship Status	2	0.41	0.51	0.12
	4	0.61	0.50	0.12
URB: Pre-Assess	2	1.07	0.41	0.10
	4	1.00	0.60	0.14
URB: Week 2	2	1.05	0.35	0.09
	4	0.84	0.45	0.11
URB: Week 3	2	0.93	0.39	0.09
	4	0.86	0.42	0.10
URB: Week 4	2	0.85	0.43	0.10
	4	0.96	0.42	0.10
URB: Week 5	2	0.78	0.50	0.12
	4	0.83	0.47	0.11
URB: Week 6	2	0.73	0.45	0.11
	4	0.84	0.54	0.13
URB: Post-Assess	2	0.71	0.54	0.13
	4	0.64	0.53	0.13
UQ: Pre-Assess	2	30.88	10.86	2.63
	4	33.28	13.76	3.24
UQ: Week 2	2	30.29	9.60	2.33
	4	32.78	11.94	2.82
UQ: Week 3	2	25.76	11.46	2.78
	4	32.72	11.91	2.81
UQ: Week 4	2	25.82	11.53	2.80
	4	30.72	13.71	3.23
UQ: Week 5	2	25.94	9.87	2.39
	4	26.00	11.05	2.60
UQ: Week 6	2	25.29	10.51	2.55
	4	28.22	13.04	3.07
UQ: Post-Assess	2	24.59	11.39	2.76
	4	28.78	13.17	3.10

Table 6

Descriptive Statistics of Two and Four Week Intervention Groups on Participant Characteristic Variables

	Intervention Week/Group	Mean	Standard Deviation	Standard Error Mean
DOSPERT: Risk Taking	2	3.43	0.87	0.21
	4	3.45	0.87	0.21
DOSPERT: Risk Perception	2	4.91	0.78	0.19
	4	4.77	0.75	0.18
DOSPERT: Expected Benefits	2	2.73	0.81	0.20
	4	2.88	0.82	0.19
FFMQ: Pre-Assess	2	3.26	0.53	0.13
	4	3.14	0.36	0.09
UPPS-P: Negative Urgency	2	32.00	7.32	1.78
	4	31.72	7.04	1.66
UPPS-P: Positive Urgency	2	30.59	7.74	1.88
	4	29.11	8.08	1.90
UPPS-P: Lack of Premeditation	2	20.88	5.53	1.34
	4	23.72	5.11	1.20
UPPS-P: Lack of Perseverance	2	18.82	4.46	1.08
	4	19.78	5.40	1.27
UPPS-P: Sensation Seeking	2	31.53	8.06	1.96
	4	32.44	6.62	1.56
MPQ: Wellbeing	2	43.82	10.70	2.59
	4	47.61	11.41	2.69
MPQ: Social Potency	2	56.12	3.08	0.75
	4	56.50	3.94	0.93
MPQ: Achievement	2	53.53	7.08	1.72
	4	53.56	9.54	2.25
MPQ: Social Closeness	2	45.82	3.30	0.80
	4	47.33	3.96	0.93
MPQ: Stress Reaction	2	57.41	9.01	2.19
	4	58.17	8.95	2.11
MPQ: Alienation	2	62.29	10.10	2.45
	4	63.72	7.39	1.74
MPQ: Aggression	2	54.00	7.57	1.84
	4	55.33	8.97	2.11
MPQ: Control	2	46.47	4.33	1.05
	4	45.39	6.97	1.64
MPQ: Harm Avoidance	2	42.35	5.95	1.44
	4	40.94	4.32	1.02
MPQ: Traditionalism	2	43.47	6.90	1.67
	4	43.28	5.41	1.28
MPQ: Absorption	2	58.24	7.35	1.78
	4	58.39	8.66	2.04
NART	2	36.53	9.22	2.24
	4	34.61	6.65	1.57

Table 7

Frequency of Protocol Steps Missed per Participant, as Rated During Intervention

Cue Exposure Script	
Number of Steps Missed	Frequency of Participants
12	1
13	3
14	4
15	5
16	1
17	5
18	3
19	0
20	4
21	1
22	2
23	1
24	0
25	1
26	1
27	0
28	0
29	2

Surf the Urge Intervention Script	
Number of Steps Missed	Frequency of Participants
0	21
1	5
2	4
3	2
4	0
5	1

Table 8

Frequency of Protocol Steps Missed per Participant, as Rated During Video Review

Cue Exposure Script	
Number of Steps Missed	Frequency of Participants
10	1
11	4
12	2
13	5
14	3
15	5
16	4
17	0
18	3
19	0
20	3
21	0
22	0
23	1
24	1
25	1
26	0
27	1

Surf the Urge Intervention Script	
Number of Steps Missed	Frequency of Participants
0	23
1	5
2	4
3	1
4	1

Table 9

Frequency of Individual Urge-Related Behavior within 2-Week Intervention Group

	Pre-Assess	Week 2	Week 3	Week 4	Week 5	Week 6	Post-Assess
Deliberate Self-Harm	1	1	1	1	1	1	1
Alcohol Use	14	9	8	7	7	7	7
Drug Use	10	9	10	10	10	8	7
Risky Sex	1	2	1	0	0	1	0
Aggression	3	5	3	2	3	2	1
Maladaptive Eating	3	4	2	2	3	3	2
Cigarette Use	5	5	5	5	1	0	5

Table 10

Frequency of Individual Urge-Related Behavior within 4-Week Intervention Group

Week 4	Pre-Assess	Week 2	Week 3	Week 4	Week 5	Week 6	Post-Assess
Trichotillomania	16	11	10	10	9	11	8
Gambling	0	0	0	0	0	0	0
Aggression	2	1	1	2	1	2	1
Deliberate Self-Harm	4	2	1	2	1	1	0
Alcohol Use	11	9	10	13	11	12	9
Illicit Drug Use	3	2	2	2	3	2	1
Risky Sex	1	1	2	2	1	0	0
Maladaptive Eating	2	2	2	2	2	2	2

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CURRICULUM VITAE

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EDUCATION

- Expected 2018 **Ph.D.**, Clinical Psychology,
University of Nevada, Las Vegas
Dissertation Title: Evaluation of a Brief “Surf the Urge” Intervention
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- May 2012 **Masters of Arts**, Psychology, Summa Cum Laude
California State University, San Marcos
Thesis Title: Using Intrapersonal Emotional Awareness, Personality
Characteristics, and Impulsivity to Predict Substance Use
Advisor: Maureen Fitzpatrick, Ph.D.
- December 2007 **Bachelor of Arts**, Psychology, Cum Laude
American Jewish University
-

AWARDS AND HONORS

- 2017 Summer Doctoral Research Fellowship (\$7,000), UNLV Graduate College
- 2017 Patricia Sastaunik Scholarship (\$2,500), UNLV Graduate College
- 2017 Graduate Access Scholarship (\$2,000), UNLV Graduate College
- 2016 Clinical Trial Financial Support Award (\$750), UNLV’s The PRACTICE
- 2016 Patricia Sastaunik Scholarship (\$2,500), UNLV Graduate College
- 2016 Graduate Access Scholarship (\$2,000), UNLV Graduate College
- 2015 Patricia Sastaunik Scholarship (\$2,500), UNLV Graduate College
- 2015 Graduate Access Scholarship (\$2,000), UNLV Graduate College
- 2015 Summer Session Scholarship (\$2,000), UNLV Graduate College
- 2014 Sponsorship Funding (\$532), Graduate and Professional Student Association at UNLV
- 2013 Sponsorship Funding (\$300), Graduate and Professional Student Association at UNLV
- 2007 Founder of Club of the Year- Peer Mentoring Program, American Jewish University
- 2007 Student Service and Programming Group Recognition, American Jewish University
- 2006 Student Leader, American Jewish University
-

POSTDOCORAL FELLOWSHIP

August 2018 – July 2019

Youth Opportunity Center, Residential Treatment Center; Muncie, IN

Supervisor: Gisselle Mckell-Jeffers, Ph.D. and Nikki Eubank, Ph.D.

- Primary responsibility will be to complete psychodiagnostic forensic evaluations on children and adolescents in a residential treatment center, juvenile detention center, or outpatient practice to assist placing agencies in determining future placement options, mental health diagnoses, and treatment recommendations. These assessments could also include risk assessments for future re-offense or psychosexual evaluations.
- Will provide psychological services to adolescents referred by the Department of Child Services, Department of Education, or the Juvenile Probation Department, including crisis interventions and stabilizations; individual, group, and family treatment planning and implementation; and case management.
- Court testimony will be provided in various Indiana counties on both psychodiagnostic and individual psychotherapy cases.
 - Presenting problems will primarily include trauma, mood disorders, conduct disorder or oppositional defiant disorder, reactive attachment disorder, neurodevelopmental disabilities, substance abuse or other high-risk behaviors, maladaptive sexual behaviors, history of sexual exploitation, and personality disorder traits. Theoretical orientations utilized included CBT, DBT, Interpersonal Therapy, Emotion-Focused Therapy, and Multisystemic Family Therapy.
 - Will attend regular multidisciplinary team meetings and obtain individual supervision with one of two staff psychologists. Supervision will also include video observation of individual therapy sessions.
 - Will provide supervision to a minimum of one doctoral intern. May also supervise several doctoral practicum students. Each doctoral student (intern or practicum) may provide either individual and family therapy or psychodiagnostic assessments to children and adolescents placed in a residential treatment center through various Indiana Juvenile Probation Departments or Departments of Child Services.

CLINICAL INTERNSHIP

July 2017 – July 2018

Youth Opportunity Center, Residential Treatment Center; Muncie, IN

Supervisors: Scott Bischoff, Ph.D. and Gisselle Mckell-Jeffers, Ph.D.

- Provide psychological services to adolescents referred by the Department of Child Services or the Juvenile Probation Department, including crisis interventions and stabilizations; individual, group, and family treatment planning and implementation; and case management.
- Conduct psychodiagnostic forensic evaluations on children and adolescents in a residential treatment center, juvenile detention center, or outpatient practice to assist

placing agencies in determining future placement options, mental health diagnoses, and treatment recommendations.

- Present court testimony on both individual psychotherapy cases and psychodiagnostic cases.
 - Presenting problems primarily included trauma, mood disorders, conduct disorder or oppositional defiant disorder, reactive attachment disorder, neurodevelopmental disabilities, substance abuse or other high-risk behaviors, maladaptive sexual behaviors, history of sexual exploitation, and personality disorder traits. Theoretical orientations utilized included CBT, DBT, Interpersonal Therapy, Emotion-Focused Therapy, and Multisystemic Family Therapy.
 - Attended regular multidisciplinary team meetings and obtained individual supervision with one of two staff psychologists. Supervision also includes video observation of individual therapy sessions.
 - Provide peer supervision to a third year practicum student providing individual and family therapy to a female adolescent victim of sexual exploitation.

PRACTICUM EXPERIENCE

July 2016 – June 2017

Desert Willow Treatment Center, Psychiatric Hospital; Las Vegas, NV
Supervisors: Caron Whipple, Ph.D. and Robert Kutner, Ph.D.
10 hours per week

- Provided individual psychological services, including crisis interventions, client stabilization, and case management, to children and adolescents classified as severely emotionally disturbed in an acute treatment unit.
- Completed psychodiagnostic evaluations to both acute and long-term stay clients, including juvenile sexual offenders mandated to inpatient treatment.
 - Presenting problems primarily included depression, anxiety, trauma, oppositional defiant disorder, conduct disorder, and psychosis. Theoretical orientations utilized included CBT and DBT.
 - Attended weekly multidisciplinary team meetings and obtained individual supervision with one of two staff psychologists. Supervision also includes live observation of individual therapy sessions and assessment procedures.

Aug. 2015 – June 2017

Family and Child Treatment of Southern Nevada, Community Mental Health Clinic; Las Vegas, NV
Supervisor: John Matthias, Ph.D.
15 to 25 hours per week

- Conducted individual and family therapy services to adolescent and adult victims of trauma. Conducted individual and group therapy with adults and adolescents referred from the Justice Court System for perpetration of sexual offenses.

- Presenting problems primarily included problematic sexual behaviors, sexual assault victims, trauma, depression, anxiety, schizophrenia, and bipolar disorder. Theoretical orientations utilized included Trauma Focused CBT, DBT, and psychodynamically- informed therapy.
- Attended weekly individual and group supervision held separately, as well as case conference meetings. Supervision also included digital video review and live observation of individual and group therapy sessions. Multidisciplinary treatment team meetings for individuals receiving sex offender treatment were held monthly with probation.

Aug. 2014 – May 2015

Innovative Psychological Solutions, Private Practice; Las Vegas, NV

Supervisor: Shera Bradley, Ph.D.

15 to 30 hours per week

- Provided individual and family psychological services to children and adolescents in a private practice setting. Conducted individual and group therapy services for referrals from the Juvenile Justice Court System for sexual exploitation.
- Assisted in the completion of forensic assessments, including adult competency, death penalty mitigation, and general psychological diagnostic evaluations. Conducted supervised clinical interviews, completed record reviews, and wrote reports.
- Presenting problems primarily included conduct disorder, anxiety, depression, personality disorders, and trauma. Theoretical orientations utilized included DBT and CBT.
- Attended weekly individual supervision and live observation of group therapy sessions and forensic assessment interviews. Monthly case conference multidisciplinary team meetings were also conducted.

Aug. 2013 – June 2017

The Partnership for Research, Assessment, Counseling, Therapy, and Innovative Clinical Education, Departmental Community Mental Health Clinic; Las Vegas, NV

Supervisors: Noelle Lefforge, Ph.D. and Michelle Paul, Ph.D.

- Conduct two to five comprehensive diagnostic assessments for adults and children in a Las Vegas community mental health clinic per year.
- Referral questions primarily included assessments for ADHD and learning disabilities, as well as evaluations of mental health concerns such as Bipolar Disorder and Anxiety.
- Individual supervision was provided as needed, including live observation and digital video review.

Aug. 2013 – Aug. 2014

The Partnership for Research, Assessment, Counseling, Therapy, and Innovative Clinical Education, Departmental Community Mental Health Clinic, University of Nevada, Las Vegas; Las Vegas, NV

Supervisor: Christopher Kearney, Ph.D.

- Provided both short-term and long-term psychological treatment and diagnoses for children and adults. Carried a caseload of approximately 5 to 8 clients seen weekly.

- Presenting problems primarily included depression, anxiety, conduct disorder, relationship issues, adjustment concerns and stressors, personality disorders, trauma, and behavioral problems. Theoretical orientation approaches utilized included CBT, DBT, and psychodynamically informed therapy.
- Attended weekly individual and group supervision meetings, including digital video review. Weekly practicum seminars for didactic instruction, group supervision, and case conferences were also held.

SUPPLEMENTAL PRACTICUM TRAINING

Aug. 2014 – Oct. 2014

The Cairn Center, Private Practice; Las Vegas, NV
 Supervisor: Lisa M. Linning, Ph.D.
 2 hours per week

- Co-facilitated an eight-week adolescent and young adult DBT interpersonal effectiveness skill-based psychotherapy group. Presenting problems included Borderline Personality Disorder, Autism Spectrum Disorder, depression, anxiety, and Dependent Personality Disorder.
- Supervision included weekly group meetings and live group therapy observation.

Aug. 2012 – Oct. 2014

Family Research and Services, University of Nevada, Las Vegas; Las Vegas, NV
 Supervisor: Bradley Donohue, Ph.D.
 5 to 10 hours per week

- Assisted in the development and refinement of a significant-other supported behavioral treatment as part of a NIDA-funded randomized control trial. Implemented manualized, 12-session, evidence-based, Family Behavior Therapy to assist collegiate athletes in the reduction of substance use and mental health concerns and improvement of athletic and academic performance.
- Supervision included weekly individual and group sessions, as well as audiotape review for treatment adherence and fidelity.

RESEARCH EXPERIENCE

Oct. 2015 – Present

Study: (dissertation) **Evaluation of a Brief “Surf the Urge” Intervention**
 Advisors: Stephen Benning, Ph.D., and Noelle Lefforge, Ph.D.

- Developed and implemented a clinical trial examining the efficacy of a brief mindfulness based intervention to reduce urge-related behaviors (e.g., alcohol and substance use, deliberate self-harm, aggression, problem eating behaviors) delivered both in person and by telemental health.

- Composed literature review; authored IRB application; recruited participants; developed survey and intervention; implemented survey and intervention; trained and supervised therapists; collected, analyzed, and reported data.

Jan. 2015 – Aug. 2015

Development of Irritability, Mood, and Emotions, University of Nevada, Las Vegas, NV

Study: Evaluating the Impact of Mood Symptoms and Irritability on Information Processing

Graduate Assistant

Primary Investigator: Andrew Freeman, Ph.D.

- Assisted in implementing a study evaluating the differences in how individuals with mood symptoms, irritability, or noncompliant behaviors process new information, respond to behavioral tasks that induce frustration, and seek rewards.
- Created study protocol manual; recruited participants; implemented study protocol; debriefed participants to ensure proper safety planning; aided in the development of statistical databases; collected, analyzed, and reported data; and trained, supervised, and mentored research assistants.

Aug. 2012 - Oct. 2015

Family Research and Services, University of Nevada, Las Vegas

Study: Evaluation of Family Behavior Therapy in collegiate athletes, NIDA-funded R01 Grant (1R01DA031828)

Program Coordinator and Quality Assurance Coordinator

Primary Investigator: Bradley Donohue, Ph.D.

- Implemented therapy within a clinical trial to evaluate the effectiveness of Family Behavior Therapy to reduce substance use in collegiate athletes delivered in person and by telemental health.
- Completed quality assurance checks on all research documents (e.g., treatment manuals, enlistment protocols); recruited participants, implemented study protocol; supervised and evaluated treatment adherence; collected, analyzed, and reported data; and trained, supervised, and mentored research assistants.
- Assisted in the development, writing, editing, and organization of manuscripts for publication disseminating information about the effectiveness of Family Behavior Therapy in various populations, including substance-abusing mothers mandated to treatment due to child neglect.

Aug. 2009 – May 2012

Study: (thesis) **Using Intrapersonal Emotional Awareness, Personality Characteristics, and Impulsivity to Predict Substance Use**

Advisor: Maureen Fitzpatrick, Ph.D.

- Developed and implemented a study assessing the predictability of intrapersonal emotional awareness, personality characteristics, and impulsivity on the use of substances in a sample of college students. Study also included the development and assessment of a reliable and valid novel substance use measure, the Drug Use Behavior Inventory.

- Conducted literature review; authored IRB application; recruited participants; developed survey and implemented survey; trained and supervised research assistants; and collected, analyzed, and reported data.

Aug. 2006 – Dec. 2007

Psychology Research Lab, American Jewish University
 Research Assistant
 Advisor: Sue Kapitanoff, Ph.D.

- Assisted in the development and data collection for two studies: examining stress and coping in college freshmen and analyzing a reading partners affect on reading abilities in an elementary school sample.

GRANT INVOLVEMENT

Aug. 2012 – Oct. 2014

Family Behavior Therapy for Collegiate Athletes (1R01DA031828)
 Program Coordinator and Quality Assurance Coordinator
 Funding Agency: National Institutes on Drug Abuse
 Principal Investigator: Bradley Donohue, Ph.D.
 \$1,998, 000

Jan. 2012 – April 2012 and Jan. 2013 – April 2013

Great Plays Alcohol Abuse Prevention
 Prevention Educator
 Funding Agency: Alcohol Beverage Medical Research
 Principal Investigator: Bradley Donohue, Ph.D.
 \$30,000

PUBLICATIONS

Schubert, K. N., Freeman, A. J., Youngstrom, J. K., Findling, R. L., & Youngstrom, E. A. (2016). Assessing gender in the assessment of conduct disorder: An item-response theory analysis. Manuscript in preparation.

Donohue, B., Chow, G. M., **Schubert, K. N.**, Urgelles, J., & Allen, D. N. (in press). Contribution of Non-Prescribed/illicit Marijuana and Hard Drug Use to Child Abuse and Neglect Potential While Considering Social Desirability. *The British Journal of Social Work*.

Donohue, B., Loughran, T., Pitts, M., Chow, G. M., Soto-Nevarez, A., & **Schubert, K.** (2016). Concurrent reduction of alcohol consumption and factors interfering with sport performance in collegiate athletes. *Journal of Drug Abuse*, 1-9. doi: 10.2176/2471-853X.100035

Donohue, B., Alvarez, K., & **Schubert, K. N.** (2015). An evidence-supported approach to reporting child maltreatment. In B.Mathews & D. C. Bross (Eds.), *Mandatory reporting laws and the identification of severe child abuse and neglect*. New York, NY: Springer.

Pitts, M., Donohue, B., **Schubert, K. N.**, Chow, G. M., Loughran, T., & Gavrilova, Y. (2014). A systematic case examination of The Optimum Performance Program in Sports in a combat sport athlete. *Clinical Case Studies*, 1-13. doi:10.1177/1534650114548312

Chow, G. M., Donohue, B., Pitts, M., Loughran, T., **Schubert, K. N.**, Gavrilova, Y., & Diaz, E. (2014). Results of a single case controlled study of The Optimum Performance Program in Sports in a college athlete. *Clinical Case Studies*, 1-19. doi:10.1177/1534650114548313

Donohue, B., Chow, G. M., Pitts, M., Loughran, T., **Schubert, K. N.**, Gavrilova, Y., & Allen, D. N. (2014). Piloting a family-supported approach to concurrently optimize mental health and support performance in athletes. *Clinical Case Studies*, 1-19. doi:10.1177/1534650114548311

PROFESSIONAL PRESENTATIONS

Schubert, K. N. (2014, October). *Case examination of The Optimum Performance Program in Sports (TOPPS) in an NCAA division I athlete*. In Donohue, B., Chow, G., Pitts, M., Loughran, T., & Gavrilova, Y. Development and initial examination of The Optimum Program in Sports (TOPPS): Bridging the gap between mental health and sport performance. Association for Applied Sport Psychology's (AASP) 2014 Annual Conference. Las Vegas, NV.

Schubert, K., Pitts, M., Gavriolova, Y., & Loughran, T. (2014, April). *Evidence-based substance abuse treatment tailored for the culture of college athletics*. In B. Donohue (Chair). Process of developing a non-stigmatizing, positive environmental context, for the Optimum Performance Program in Sports (TOPPS): An alternative to the traditional campus counseling approach to addressing mental health with implications for non-athlete students. Western Psychological Association Convention. Portland, OR.

PROFESSIONAL POSTER PRESENTATIONS

Loughran, T. A., Soto-Neva, A., Pitts, M., **Schubert, K.** Gavrilova, Y., Chow, G., & Donohue, B. (2015, November). Evaluation of a goal-oriented alcohol prevention program in student athletes. Association for Behavioral and Cognitive Therapies Annual Convention, Chicago, IL.

Schubert, K. N., Molina, S. M., & Benning, S. D. (2015, April). The association between factors of psychopathy and risk taking and risk perception. Western Psychological Association Convention, Las Vegas, NV.

Schubert, K. N., Molina, S. M., & Benning, S. D. (2015, April). Associations between factors of psychopathy, demographics, externalizing, impulsivity, and sensation seeking. Western Psychological Association Convention, Las Vegas, NV.

Schubert, K. N., Ross, E., & Klingspon, K. (2015, April). Assessing the Barratt Impulsiveness Scale-11's ability to validly measure impulsivity. Western Psychological Association Convention, Las Vegas, NV.

Schubert, K. N., El Ansari, K., Palou, Q., Torres, A., Bichelman, J., Pitts, M., Chow, G. M., & Donohue, B. (2014, April). Relative contribution of caregivers' marijuana and hard drug use in predicting child maltreatment potential while considering social desirability. 2015 Graduate & Professional Student Research Forum, Las Vegas, NV.

Chow, G., Donohue, B., Diaz, E., Pitts, M., Loughran, T., **Schubert, K.,** & Gavrilova, Y. (2014, October). A sport-specific family behavior therapy for athletes: A multiple-baseline case study of a collegiate cheer and dance athlete. Association for Applied Sport Psychology's (AASP) 2014 Annual Conference. Las Vegas, NV.

Loughran, T., Chow, G., Pitts, M., **Schubert, K.,** Gavrilova, Y., & Donohue, B. (2014, October). Frequency of alcohol use as a predictor of mental health symptoms in collegiate athletes. Association for Applied Sport Psychology's (AASP) 2014 Annual Conference. Las Vegas, NV.

Schubert, K. N., El Ansari, K., Palou, Q., Torres, A., Bichelman, J., Pitts, M., Chow, G. M., & Donohue, B. (2014, April). Relative contribution of caregivers' marijuana and hard drug use in predicting child maltreatment potential while considering social desirability. Western Psychological Association Convention. Portland, OR.

Gavrilova, Y., Aremanta, S., Palou, Q., Torres, A., **Schubert, K.,** Pitts, M., & Donohue, B. (2014, April). Development and dissemination of administrative procedures of an evidence-supported clinic. Western Psychological Association Convention. Portland, OR.

Pitts, M., Diaz, E., Bichelman, J., El Ansari, K., **Schubert, K.,** Gavrilova, Y., Chung, H., & Donohue, B. (2014, April). Examination of the association between treatment preferences and optimum sport performance in collegiate athletes: Results from an intervention outcome study. Western Psychological Association Convention. Portland, OR.

Diaz, E., Kong, P., Swarzman, E., Holler, A., Gonzalez-Bueno, A., Gavrilova, Y., Loughran, T., **Wrzeciona, K.,** Pitts, M., Murrieta, V., Dunn, R., Chow, G., Kelleher, L., & Donohue, B. (2013, October). Factors that interfere with sport performance and alcohol use among collegiate athletes. Association for Applied Sport Psychology's (AASP) 2013 Annual Conference. New Orleans, LA.

Wrzeciona, K. N., & Fitzpatrick, M. (2012, April). College students' substance use: Effects of gender, age, and personality. Western Psychological Association Convention. San Francisco, CA.

Wrzeciona, K. N., & Fitzpatrick, M. (2012, May). Using intrapersonal emotional awareness and other factors to predict substance use in college students. Association for Psychological Science Convention. Chicago, IL.

SELECTED SPECIALIZED TRAININGS & WORKSHOPS

- 2018 **Training in Trauma Focused-Cognitive Behavior Therapy (TF-CBT)**
Held by: Melissa Risk, Psy.D., H.S.P.P.
 ▪ Comprehensive two-day seminar to receive TF-CBT certification.
- 2015 **Interprofessional Education Day**
Held by: UNLV Mental & Behavioral Health Training Coalition and Dental School
 ▪ One-day seminar working alongside nursing, physical therapy, psychology, social work, and public health students to develop skills in using an interdisciplinary team when treating patients.
- 2015 **Comprehensive Training in Dialectical Behavior (DBT)**
Trained by: Alan Fruzzetti, Ph.D., University of Nevada, Reno
 ▪ Comprehensive 3-day training to receive DBT certification.
- 2015 **Forensic Report Writing**
Trained by: Richard L. DeMier, Ph.D., ABFP
 ▪ Reviewed strategies to improve forensic report writing.
- 2015 **Improving Clinical Judgment and Decision Making in Forensic Psychological Evaluation**
Trained by: Randy K. Otto, Ph. D., ABPP
 ▪ Evaluated how to improve forensic psychological evaluations and reports, including case conceptualizations, expert testimony and biases, and judgment and decision making.
- 2014 **Hot Topics in Ethics and Risk Management in Psychological Practice**
Trained by: Eric Harris, JD, Ed. D.
 ▪ Assessed risk management strategies, including high-risk dilemmas, documentation and challenges based on tele-counseling and distance therapy.
- 2014 **Partnership in Action: Building Competency to Fight Human Trafficking**
Trained by: Harmony Dust, MSW; Lt. Karen Hughes; Shera Bradley, Ph.D.; Shaily Jain, M.D.
 ▪ Examined diagnostic considerations and psychological chains that lead to victimization of human trafficking and commercial sexual exploitation. Reviewed victim vulnerability, best practices within this population, and differences between human sex trafficking and child sexual abuse survivors.

- 2012 **Structured Clinical Interview for DSM-IV-TR Axis I Disorders-Patient Edition**
 Trained by: Daniel Allen, Ph.D.
- Trained in the use of The Structured Clinical Interview for DSM-IV-TR Axis I Disorders – Patient Edition.
- 2012 **Family Behavior Therapy (FBT) for Adults and Adolescents**
 Trained by: Bradley Donohue, Ph.D.
- Reviewed how to implement a significant-other supported treatment with adult and adolescent populations, including substance users, child maltreating mothers, and youth diagnosed with conduct disorder.
- 2012 **Adolescent Community Reinforcement Approach (ACRA)**
 Trained by: Robert J. Meyers, Ph.D., University of New Mexico
- Trained in evidence-based substance use behavioral intervention that focused on replacing environmental contingencies that have supported substance use with those that include more prosocial activities and behaviors.
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LEADERSHIP AND SERVICE

Aug. 2013 – July 2017

Outreach Undergraduate Mentoring Program, University of Nevada, Las Vegas
 Graduate Student Mentor

- Provide individualized support, including review of academic coursework, future career paths, and materials for graduate school applications, to three UNLV undergraduate students from under-represented backgrounds.

Aug. 2013 – May 2014 and Aug. 2015 – Aug. 2017

UNLV Clinical Psychology Doctoral Student Committee, University of Nevada, Las Vegas
 Cohort Representative and Treasurer

- Elected treasurer and cohort representative within graduate program, with role including being a liaison between graduate students and faculty, advocating for student needs, coordinating student interview days, and planning department student functions and fundraisers.

Aug. 2011- May 2012

Psychology Academic Resource Laboratory, California State University, San Marcos
 Graduate Assistant
 Supervisors: Heike Mahler, Ph.D. and Maureen Fitzpatrick Ph.D.

- Provided individualized tutoring, workshops, and panel discussion support to undergraduate students seeking help with psychology coursework.

Aug. 2007 – May 2007

Academic Counseling Center, American Jewish University

Peer Academic Counselor

Supervisor: Arnie Weisberg

- Provided individualized tutoring for all psychology classes at American Jewish University.
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TEACHING EXPERIENCE

Fall 2015 – May 2017

Introduction to Psychology, PSY 101, University of Nevada, Las Vegas

Supervisor: Wayne Wieten, Ph.D.

Spring 2011

Introduction to Psychology, PSYC 100, California State University, San Marcos

Supervisor: Elisa Grant-Vallone, Ph.D.

CONSULTATIONS

Sept 2012 **Reducing Stress at Home and Work Using Communication Skills,
Environmental Skills, and Emotional Regulation**

Audience: Rodey Law Firm

- Presentation on utilizing Family Behavior Therapy (FBT) treatment components to reduce stress within the home and work arenas.
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EDITORIAL EXPERIENCE

Aug. 2013- Oct. 2014

Journal of Child and Adolescent Substance Abuse, Editorial Assistant

Ad hoc Reviews

Behavior Modification

Journal of Child and Adolescent Substance Abuse

PROFESSIONAL AFFILIATIONS

2015-Present American Psychological Association Society of Clinical Child and Adolescent Psychology (Division 53)

2012-Present Nevada Psychological Association, Student Member

2011-Present Western Psychological Association, Student Member

2009-Present American Psychological Association, Student Affiliate

2013-2015 Association for Applied Sports Psychology, Student Member

2011-2013 Association for Psychological Science, Student Affiliate

REFERENCES

Gisselle McKell-Jeffers, Ph.D., H.S.P.P.
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