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The Roles of Interpersonal Emotion Regulation and Communication in the Relation between Posttraumatic Stress Disorder and Substance Use Risk

by

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Submitted to the Graduate Faculty as partial fulfillment of the requirements for the Master of Arts Degree in Psychology

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An Abstract of

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Posttraumatic stress disorder (PTSD) and substance use disorders (SUDs) are independently and concurrently associated with emotional and interpersonal problems. Though current PTSD-SUD treatments primarily target individual factors, there is growing support for the involvement of interpersonal relationships in treatment for PTSD-SUD. It remains unclear how PTSD symptom severity combined with intrapersonal and interpersonal factors may increase risk for craving, particularly in the context of romantic conflict. The present study recruited trauma-exposed individuals (*n* = 82) in current or recent romantic relationships in treatment for a SUD. Additionally, we examined the relations of PTSD symptom severity to intrapersonal emotion regulation (ER), interpersonal emotion regulation (IER), communication patterns, and craving following conflict. There was a significant indirect relation of PTSD symptom severity to the desire and intention to use drugs following conflict through intrapersonal ER difficulties. Further, there was a significant negative association between PTSD symptom severity and constructive communication and significant positive associations between PTSD symptom severity and intrapersonal ER difficulties, efficacy in regulating negative

emotions with others, tendency to regulate positive emotions with others, demand/withdraw communication patterns, and craving following conflict when controlling for age, gender, relationship satisfaction, and past-year substance use frequency. Results suggest the potential utility of targeting ER and interpersonal communication styles to reduce substance use among individuals with PTSD-SUD in romantic relationships.

Para mi Papi, mi Mami, Mickey, Alyssa, Celeste, y Sonia. Por todo el apoyo y amor me siempre han dado.

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Table of Contents

Abstract iii

Acknowledgments vi

Table of Contents vii

List of Tables x

List of Figures xi

List of Abbreviations xii

List of Symbols xiii

I. Introduction 1

- A. Study Aims and Hypotheses 8

II. Method 10

- A. Participants 10
- B. Measures 10
- C. Procedure 18
- D. Analysis Plan 19

III. Results 21

- A. Preliminary Analyses 21
- B. Primary Analyses 22
  - a. Hypothesis A 22
  - b. Hypothesis B 23
  - c. Hypothesis C 23
  - d. Hypothesis D 24

IV. Discussion 26

A. Hypothesis A 26

B. Hypothesis B 29

C. Hypothesis C 31

D. Hypothesis D 32

E. Limitations and Future Directions 35

F. Conclusions and Clinical Implications 37

G. Table 1 39

H. Table 2 40

I. Table 3 41

J. Table 4 44

K. Figure 1 45

L. Figure 2 46

M. Figure 3 47

N. Figure 4 48

O. Figure 5 49

References 50

Appendices 63

A. Informed Consent Form 63

B. Demographic Questionnaire Form 65

C. Life Events Checklist for *DSM-5* ˆ(LEC-5) 68

D. PTSD Checklist for *DSM-5* (PCL-5) 73

E.	Difficulties in Emotion Regulation Scale (DERS)	75
F.	Interpersonal Regulation Questionnaire (IRQ)	77
G.	Difficulties in Interpersonal Regulation of Emotion (DIRE)	78
H.	Addiction Severity Index (ASI)	82
I.	Couples Satisfaction Index (CSI)	84
J.	Communication Patterns Questionnaire (CPQ)	88
K.	Romantic Partner Conflict Scale (RPCS)	91
L.	Brief Substance Craving Scale (BSCS)	93
M.	Desire for Drugs Questionnaire (DDQ)	95
N.	Drug Use Questionnaire (DUQ)	96

List of Tables

Table 1 Correlations between primary variables of interest and potential covariates....39

Table 2 Results of *t*-tests examining gender differences in the primary variables of interest....40

Table 3 Descriptive statistics for and correlations among primary variables of interest....41

Table 4 Partial correlations between PTSD symptom severity and primary outcome variables....44

List of Figures

Figure 1 Indirect relations of PTSD symptom severity to the desire and intention to use drugs following conflict though ER difficulties and domination....................45

Figure 2 Indirect relations of PTSD symptom severity to the desire and intention to use drugs following conflict though venting and domination...............................46

Figure 3 Indirect relations of PTSD symptom severity to craving following conflict though ER difficulties, demand/withdraw, and domination communication patterns...47

Figure 4 Indirect relations of PTSD symptom severity to craving following conflict though venting, demand/withdraw, and domination communication patterns...48

Figure 5 Indirect relations of PTSD symptom severity to craving following conflict though reassurance-seeking and demand/withdraw communication patterns...49

List of Abbreviations

APA ....American Psychological Association
ASI ....Addiction Severity Index

BCT............................Behavioral Couple's Therapy
BSCS..........................Brief Substance Craving Scale

CPQ............................Communication Patterns Questionnaire
CSI ....Couples Satisfaction Index
CTAP ....Revised Child Anxiety and Depression Scale Short Version

DERS ....Difficulties in Emotion Regulation Scale
DIRE ....Difficulties in Interpersonal Regulation of Emotions
DDQ...........................Desire for Drugs Questionnaire
DUQ...........................Drug Use Questionnaire

EMA...........................Ecological Momentary Assessment
ER ....Emotion Regulation

IER ....Interpersonal Emotion Regulation
IRQ.............................Interpersonal Regulation Questionnaire

LEC-5.........................Life Events Checklist for *DSM-5*

PCL ....Posttraumatic Stress Disorder Checklist
PTSD..........................Posttraumatic Stress Disorder

RPCS..........................Romantic Partner Conflict Scale

SUD ....Substance Use Disorder

List of Symbols

α ……Cronbach's alpha level
b…….Unstandardized beta coefficient
d…….Cohen's d
df……Degrees of freedom
c…….Total effect
c'……Direct effect
CI …..Confidence interval
M …...Average value
N …....Total number of individuals
p ……Significance level
SD ….Standard Deviation
t …….Test statistic

Chapter 1

Introduction

Posttraumatic stress disorder (PTSD) is characterized by re-experiencing symptoms, negative alterations in cognition and mood, avoidance, and hyperarousal symptoms following exposure to a traumatic event (American Psychological Association, 2013). The lifetime and past six-month prevalence of PTSD in a nationally representative sample have been found to be approximately 8.3% and 3.8%, respectively (Kilpatrick et al., 2013). Prevalence rates of PTSD are considerably higher among individuals with other psychiatric disorders, particularly substance use disorders (SUDs), which frequently co-occur with PTSD (Brady et al., 2004). Among individuals with a SUD, the prevalence of lifetime PTSD ranges from 26%-52% (Brady et al., 2004). Individuals with both disorders have been found to be at higher risk for risky and impulsive behaviors, have more clinical impairment than either disorder alone, more severe substance use patterns, and worse clinical outcomes, such as poor treatment retention and adherence and quicker relapse to substance use post-treatment (Back et al., 2000; Hien et al., 2000; Najavits et al., 2007; Ouimette et al., 2007; Ouimette et al., 1999; Schafer & Najavits, 2007).

Given the frequency with which PTSD and SUD co-occur and the clinical relevance of this co-occurrence, researchers have proposed that there is a functional relationship between PTSD and substance use (Stewart & Conrad, 2003). Prominent models of this relation emphasize the negative reinforcing role of substance use in the context of PTSD, with substance use functioning to reduce the severity of the symptoms of PTSD (self-medication; Khantzian, 1997) or emotional distress associated with the disorder (Tull et al., 2011). With regard to the latter, the affective processing model of

negative reinforcement (Baker et al., 2004) states that individuals who are unable to tolerate, accept, or regulate emotional distress may have increased motivation to engage in behaviors, such as substance use, to immediately reduce distress. Consistent with this model, individuals with co-occurring PTSD who experience high levels of negative affect, combined with low distress tolerance or greater difficulties in emotion regulation (ER), may be more likely than those without PTSD to use substances to reduce emotional distress (Tull et al., 2015; Waldrop et al., 2007). Because substance use is effective in reducing negative affect in the short-term, this behavior is reinforced, increasing the likelihood of future substance use and the development, maintenance, or worsening of a SUD.

Lending support to the affective processing model of negative reinforcement, it is well documented that individuals with PTSD exhibit ER difficulties (Bardeen et al., 2015; Cloitre et al., 2005; Seligowski et al., 2015; Tull, Barrett, et al., 2007). PTSD is associated with increased frequency and intensity of negative affect (Finucane et al., 2011), and, as a result, individuals with PTSD may find it difficult to distinguish between different emotional states, control behaviors when experiencing intense affect, and find that certain ER strategies are not effective in modulating intense negative affective states. ER can be conceptualized as the ability to understand, identify, and accept emotions, as well as the ability to behave in alignment with desired goals while experiencing unpleasant emotions (Gratz & Roemer, 2004). Therefore, ER difficulties may be conceptualized as difficulties with the understanding, awareness, or acceptance of emotions, or difficulties controlling behaviors when experiencing unpleasant emotions. PTSD has been found to be associated with higher levels of overall difficulties in ER; in

particular, lack of emotional clarity, lack of emotional acceptance, difficulties engaging in goal-directed behaviors when distressed, difficulties controlling impulsive behaviors when distressed, and limited access to ER strategies (Ehring and Quack, 2010; Tull et al., 2007). In addition to greater difficulties in ER, PTSD is associated with the use of specific ER strategies that are considered putatively maladaptive, such as emotional avoidance (Marx & Sloan, 2002, Naifeh et al., 2012; Tull et al., 2004).

In addition to greater difficulties in ER among individuals with PTSD compared to those without PTSD, research has shown heightened levels of ER difficulties in individuals with PTSD and co-occurring SUDs relative to those with only a SUD. For example, ER difficulties was found to be associated with PTSD among cocaine-dependent patients above and beyond anxiety sensitivity and anxiety symptom severity (McDermott et al., 2009). Additionally, among patients with a SUD, PTSD symptom severity was found to be associated with the use of putatively maladaptive ER strategies, such as emotional suppression and dissociation in response to trauma-related distress (Tull et al., 2018). There is also evidence that SUD patients with PTSD may be more likely to engage in impulsive and risky behaviors (e.g., substance use, disordered-eating, non-suicidal self-injury, and risky sexual behavior) to down-regulate high levels of emotional distress (Dixon-Gordon et al., 2014; Tull et al., 2013; Weiss et al., 2012). Specifically, studies have shown that ER difficulties may underlie the relation between PTSD and substance use (Radomski & Read, 2016; Tripp & McDevitt-Murphy, 2015). In addition to cross-sectional research, a prospective study found that individuals with high levels of ER difficulties and posttraumatic stress symptoms were more likely to engage in later substance use relative to those low on ER difficulties and/or posttraumatic stress

symptoms (Tull et al., 2015), suggesting a temporal relationship where ER difficulties precede substance use in individuals with posttraumatic stress symptoms.

Despite the extensive examination of ER difficulties in individuals with co-occurring PTSD-SUD, one area that is understudied in the relation between PTSD and substance use is interpersonal emotion regulation (IER). IER can be conceptualized as an individual's attempts to regulate their emotions through social processes (Zaki & Williams, 2013), and can be further conceptualized as extrinsic (i.e., attempting to regulate other people's emotions) and intrinsic (i.e., attempting to regulate one's own emotions). Two dimensions of intrinsic IER have been proposed: the tendency to pursue IER and IER efficacy (Williams et al., 2018). IER difficulties have been found to be implicated in mood and anxiety disorders (Hofmann, 2014; Zaki & Williams, 2013). Emotions often occur in a social/interpersonal context and serve interpersonal functions. Emotions help us form and maintain social relationships and establish or maintain a social position relative to others (Keltner & Haidt, 1999). The social functions of emotions have further been classified as having an "affiliative function," suggesting the establishment or maintenance of relations with others or having a "social distancing function," suggesting the differentiation from others and competition for status or power (Fischer & Manstead, 2008).

Examining both intrapersonal ER (referred to as ER from this point forward to differentiate the construct from IER) and IER can improve our understanding of how PTSD-SUD may be associated with worse substance use outcomes (e.g., greater relapse rates, more severe substance use). In addition to interfering with effective ER, the symptoms of PTSD may interfere with effective IER due to an increase in interpersonal

problems. A meta-analysis of the association between PTSD and intimate relationship problems found a medium effect size of .38 (Taft, Watkins, Stafford, Street, & Monson, 2011). Moreover, in the context of intimate relationships, one partner experiencing PTSD symptoms is associated with burden and psychological distress in the other partner (Caska & Renshaw, 2011). These findings suggest that the association between PTSD and difficulties in romantic relationships may be a particularly important context in which to examine the consequences of IER in PTSD.

Two primary models attempt to explain the association between PTSD and relationship functioning. The first of these models is the social causation model, which suggests that poor relationship functioning precedes and may exacerbate mental health difficulties, including PTSD. This model suggests that social support protects an individual from the negative consequences of trauma or reduces PTSD symptomatology over time. The social selection model suggests that PTSD symptoms contribute to a decline in relationship functioning given the interpersonal difficulties associated with PTSD, affecting the availability and quality of social support (Kaniasty & Norris, 2008). Lending support to the social support model, among a large sample of Gulf War veterans, PTSD was found to be strongly negatively associated with social support assessed at baseline and at five-year follow-up, while social support at baseline was not significantly associated with later PTSD symptom severity (King et al., 2006). However, other research supports a reciprocal relation between PTSD and social support over time. For example, in a study on the relation between social support and PTSD among survivors of a natural disaster 6-, 12-, 18, and 24-months post-disaster, social support at baseline predicted Time 2 PTSD symptom severity. However, while Time 1 PTSD did not predict

Time 2 social support, Time 2 PTSD and social support predicted both Time 3 social support and PTSD symptom severity, and Time 3 PTSD and social support predicted both Time 4 social support and PTSD symptom severity (Kaniasty & Norris, 2008).

Due to the strain that PTSD may place on relationships, individuals with PTSD may not have adequate sources of social support to aid in effective intrinsic IER, or sources of support may not have the resources available to aid individuals with PTSD in the regulation of their emotions (Beckham et al., 1996; Calhoun et al., 2002; Davidson et al., 1991). Moreover, low distress tolerance among individuals with PTSD (Marshall-Berenz et al., 2010), combined with heightened distress in partners, may lead to maladaptive extrinsic IER strategies. Studies have not yet examined relations between PTSD and IER; however, the relation between PTSD and communication behaviors has been examined. For example, among individuals who experienced a motor vehicle accident, total PTSD symptom severity, and effortful avoidance in particular, predicted dysfunctional communication at 16 weeks post-accident (Fredman et al., 2017). In addition to interpersonal problems associated with PTSD, deficits in ER and IER may contribute to worse communication patterns, which further exacerbate interpersonal problems. Ineffective communication erodes relationships and social support, which can be a protective factor against relapse (Spohr et al., 2019). Thus, as isolation, lack of support, and relationship satisfaction decrease as a result of ineffective communication, risk for relapse increases.

Couple communication behaviors can be categorized into positive and negative behaviors (Woodin, 2011). In the negative behavior category, demand/withdraw behavior and mutual avoidance are behaviors that are associated with distress during and after

partner interactions (McGinn et al., 2009). Demand/withdraw behavior is a pattern in which on partner complains, criticizes, and attempts to effect change, while the other partner avoids or removes themselves from the interaction (Christensen, 1987). Demand/withdraw patterns are associated with higher relationship distress in satisfied and unsatisfied couples (Eldridge & Baucom, 2012), and negative clinical outcomes such as depression (Rehman et al., 2010) and alcoholism (Kelly et al., 2002). Extending the latter finding, marital distress has been found to be associated with alcohol use disorders (Whisman, 2007; Whisman et al., 2000).

Speaking to the relevance of interpersonal factors to substance use outcomes among individuals with PTSD in particular, negative interpersonal relations predict worse treatment outcomes for those with PTSD in individual psychotherapy for the disorder (Price et al., 2011; Tarrier et al., 1999). Individuals with PTSD in recovery from a SUD were also more likely to report using substances as a way of coping with negative feelings from an interpersonal source, such as feelings of sadness, grief, loss, and emptiness, compared to individuals without PTSD who more likely to report using substances in response to a substance-related cue (Ouimette et al., 2007). Additionally, one study found that, among individuals seeking abstinence treatment for alcohol problems, women were more likely to report interpersonal conflict as the major precipitant for relapse or crises, compared to men (Hodgins et al., 1995).

Moreover, there are efficacious treatments for SUD that utilize the individual's social system, including family members and romantic relationships, to reduce risk for future substance use. One such treatment is Behavioral Couple's Therapy (BCT; O'Farrell & Fals-Stewart, 2006). Recognizing the importance of interpersonal factors and

functioning in reducing risk for substance use, the purpose of behavioral treatments like BCT is to increase positive relationship factors to reinforce abstinence and increase healthy relationship functioning. Highlighting the importance of effective interpersonal communication in reducing risk for substance use, one of the central goals in BCT is to improve communication between partners. Part of improving communication in this treatment is by teaching communication skills such as using “I” statements and refraining from discussing past substance use or worries about future use at home to prevent conflict that can prompt relapse, leaving these discussions for the therapy session.

Study Aims and Hypotheses

The purpose of the present study was to conduct the first examination of the role of ER and IER in the relation between PTSD and craving in the context of interpersonal conflict. We will examine the relation of PTSD to craving following conflict through (a) ER and IER, and (b) demand/withdraw communication patterns surrounding substance use. Based on existing theoretical and empirical literature, we hypothesized: (a) individuals with more severe PTSD symptoms would exhibit greater ER difficulties, greater use of maladaptive IER strategies, greater tendency to regulate emotions interpersonally, and lower efficacy of regulating emotions interpersonally (Hypothesis A); (b) individuals with more severe PTSD symptoms would engage in greater maladaptive and lesser adaptive communication patterns during conflict surrounding substance use (Hypothesis B); (c) individuals with more severe PTSD symptoms would report greater craving following conflict regarding substance use (Hypothesis C); (d) there would be significant indirect relations of PTSD symptom severity to craving following conflict through ER difficulties, maladaptive IER strategies, and maladaptive

communication patterns (Hypothesis D). For all hypotheses, we expected that significant associations would remain when relevant covariates were entered into the models (i.e., demographic variables, relationship satisfaction, past year substance use frequency).

Chapter Two

Method

Participants

Participants were 82 adult patients at three community-based correctional facilities in Ohio who provided informed consent prior to participating. These facilities are residential treatment programs that provide services for patients who have a SUD and are court-mandated to receive treatment. Treatment occurs in three stages, with increasing independence at each stage. In the current study, inclusion criteria included (1) 18 years of age or older, (2) fluent English speaker, (3) reporting exposure to a Criterion A traumatic event, and (4) currently in a romantic relationship for at least six months or, if currently single, having been in a relationship for at least six months within the last year.

Measures

Informed Consent Form. A consent form was administered to each participant to provide an opportunity to consent to their own participation in the study (see Appendix A). Participants were able to ask questions regarding the consent form and able to keep a copy of the form if requested.

Demographics Form. The demographic information form was completed by participants to assess age, gender, sexual orientation, highest level of education obtained, ethnicity, estimated annual family income, and current phase of treatment (see Appendix B).

Traumatic event exposure. The LEC-5 (Weathers et al., 2013a) was used to assess for *DSM-5* Criterion A (APA, 2013) traumatic event exposure across 17 different

types of events (see Appendix C). For each event, participants were asked whether: (a) the event happened to them, (b) the event was witnessed, (c) they learned about the event, (d) they were exposed to the event as part of their job (i.e., paramedic, police, military, or first responder), (e) they were unsure about the event, or (f) they did not experience the event directly or indirectly. To determine whether endorsed events met *DSM-5* Criterion A for the diagnosis of PTSD, participants were asked (a) to identify which event they indicated experiencing was the most stressful for them; (b) if the event resulted in someone's life being in danger; (c) whether the event identified involved serious injury or death; (d) if the event involved sexual violence; or (e) if the event involved the death of a close family member or friend, whether the death involved an accident or violence, or whether the death was due to natural causes. Participants reporting affirmative responses to the event involving serious injury, death, or sexual violence, or the event having resulted in the death of a close family member or friend due to accident or violence were classified as having experienced a traumatic event consistent with Criterion A for PTSD (APA, 2013). The LEC-5 demonstrates convergent validity with other measures of potentially traumatic events (Gray et al., 2004).

PTSD symptom severity. The Posttraumatic Stress Disorder Checklist for *DSM-5* – Civilian Version (PCL-5; Blevins, Weathers, Davis, Witte, & Domino, 2015; Weathers et al., 2013b) is a 20-item self-report measure that was used to assess the presence and severity of PTSD symptoms (see Appendix D). Items on the PCL-5 correspond with *DSM-5* criteria for a PTSD diagnosis (APA, 2013). The original version of the measure asks participants to respond to each item referring to a "stressful experience." To ensure that participants completed the measure in reference to their

identified traumatic event, we modified the instructions to the PCL-5 to ask participants to refer to the event they identified on the LEC-5 as most traumatic when completing the measure. Participants rate the extent with which they have experienced each PTSD symptom in the past month using a 5-point Likert-type scale (1 = *not at all,* 5 = *extremely*). A total score was calculated with higher scores indicating more severe PTSD symptoms. The PCL-5 has demonstrated excellent internal consistency, good test-retest reliability, and good convergent and discriminant validity (Blevins et al., 2015; Bovin et al., 2016). Internal consistency in the present sample was excellent (α = .97).

Intrapersonal emotion regulation. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report measure used to assess ER difficulties across six domains: lack of emotional awareness, lack of emotional clarity, difficulty engaging in goal-directed behaviors, nonacceptance of negative emotions, limited access to emotion regulation strategies, and difficulties controlling impulsive behaviors (see Appendix E). Participants were asked to rate each item on a 5-point Likert-type scale (1 = *almost never [0-10%],* 2 = *sometimes [11-35%],* 3 = *about half the time [36-65%],* 4 = *most of the time [66-90%],* 5 = *almost always [91-100%]*). The DERS has demonstrated adequate construct and predictive validity, good test-retest reliability, and is significantly associated with objective measures of ER (Gratz, Bornovalova, Delaney-Brumsey, Nick, & Lejuez, 2007; Gratz & Roemer, 2004; Gratz & Tull, 2010). The overall score was used in this study and higher scores indicate greater ER difficulties. Internal consistency for the present sample was excellent (α = .94).

Interpersonal emotion regulation. The Interpersonal Regulation Questionnaire (IRQ; Williams et al., 2018) is a 16-item self-report measure used to assess an

individual's perceived tendency and efficacy of intrinsic IER (see Appendix F). The IRQ consists of four subscales: negative tendency ("I manage my emotions by expressing them to others"), negative efficacy ("I appreciate having others' support through difficult times"), positive tendency ("When things are going well, I feel compelled to seek out other people"), and positive efficacy ("I really enjoy being around the people I know"). Participants were asked to rate the extent to which they agreed with each statement using a 7-point Likert-type scale (1 = *strongly disagree,* 7 = *strongly agree*). The IRQ has demonstrated adequate test-retest reliability and good convergent and discriminant validity from ER factors and personality factors among community and undergraduate samples (Williams et al., 2018). In the present study, coefficient alphas were acceptable for all subscales (0.73 for negative tendency, 0.75 for negative efficacy, 0.76 for positive efficacy, and 0.82 for positive tendency).

The Difficulties in Interpersonal Regulation of Emotions (DIRE; Dixon-Gordon, Haliczer, Conkey, & Whalen, 2018) is a 21-item self-report measure that was used to assess intrinsic IER difficulties (see Appendix G). The DIRE consists of 2 intrinsic IER scales (venting, reassurance-seeking) and 2 ER scales (acceptance, avoidance). The DIRE consists of three scenarios (i.e., "You and your significant other have been fighting a lot. You really care about the relationship and want things to work out. You've just had another fight."). Participants were asked to rate how likely they are, on a 5-point Likert-type scale (1 = *very unlikely,* 5 = *very likely*), to engage in each of the interpersonal and intrapersonal ER strategies in response to each scenario (i.e., "Keep asking for reassurance," "Simply notice your feelings"). The DIRE has demonstrated adequate construct and predictive validity in community adults (Dixon-Gordon et al., 2018).

Additionally, a social comparison scale that assesses the likelihood that participants would engage in the intrapersonal but socially-oriented ER strategy of social comparison (i.e., comparing oneself to others for the purpose of self-evaluation) has been added to the DIRE (Gratz et al., 2020). However, only the venting and reassurance-seeking scales were used in the present study to assess maladaptive IER strategy use. Internal consistency for the present sample was good (0.83 for venting and 0.87 for reassurance-seeking).

Relationship status. The Addiction Severity Index (ASI; McLellan, Luborsky, O'Brien, & Woody, 1980) is a semi-structured interview that assesses seven potential problem areas among individual who use substances (see Appendix H). A self-report version of the ASI social/family relationships module was used to assess current romantic relationship status, current and previous living arrangements, and quality of social/family relationships. The ASI was modified to ask participants the length of their current romantic relationship, as well as the length of their most recent romantic relationship if not currently in a romantic relationship. The ASI was used to obtain relationship status to determine eligibility criteria and length of romantic relationship.

Relationship satisfaction. The Couples Satisfaction Index (CSI; Funk & Rogge, 2007) is a 32-item self-report measure that was used to assess one's satisfaction in a relationship (see Appendix I). The scale asks a variety of items related to relationship functioning (i.e., "My relationship with my partner makes me happy," How rewarding is your relationship with your partner?" "Do you enjoy your partner's company?"). The CSI has demonstrated excellent internal consistency and strong convergent validity with other measures of relationship satisfaction (Funk & Rogge, 2007). Scoring on the CSI is kept

continuous, with higher scores indicating higher levels of relationship satisfaction, with a score falling below 104.5 suggesting notable distress in a relationship (Funk & Rogge, 2007). The CSI was used to assess a potential covariate influencing relationship outcome variables, such as communication behaviors during conflict (Funk & Rogge, 2007). Internal consistency in the present study was excellent ($\alpha = .98$).

Couple communication patterns. The Communication Patterns Questionnaire (CPQ; Christensen, 1987) is a 35-item self-report measure that was used to assess dyadic patterns in which couples engage during a relationship problem at three stages: when a problem arises, during the discussion of the problem, and after the discussion of the problem (see Appendix J). To ensure that participants completed the measure in reference to discussions about substance use, the instructions for the measure were modified to ask participants to refer to conversations they have had with their partners regarding substance use. Participants were then instructed to rate how likely they and/or their partner are to engage in various behaviors before, during, and after conflict on a 9-point Likert-type scale (1 = *very unlikely,* 9 = *very likely*). Revised scoring for the CPQ yields three subscales: constructive communication, self-demand/partner-withdraw, and partner-demand/self-withdraw, with improved reliability from the original scoring of the CPQ (Crenshaw, Christensen, Baucom, Epstein, & Baucom, 2017). In the present study, coefficient alphas were good (0.85 for constructive communication, 0.87 for partner-demand/self-withdraw, and 0.77 for self-demand/partner-withdraw).

The Romantic Partner Conflict Scale (RPCS; Zacchilli, Hendrick, & Hendrick, 2009) is a 39-item self-report measure that was used to assess processes related to romantic conflict (see Appendix K). The RPCS asks participants to think of a significant

conflict that they and their partner have disagreed about recently and respond to each item most like how they handled the conflict on a 5-point Likert-type scale (0 = *strongly disagree with statement,* 4 = *strongly agree with statement*). To ensure that participants completed the measure in reference to discussions about substance use, instructions were modified to ask participants to refer to conversations they have had with their partners regarding substance use. The RPCS yields six subscales: compromise (i.e., "My partner and I negotiate to resolve our disagreements"), avoidance (i.e., "I avoid disagreements with my partner"), interactional reactivity (i.e., "When my partner and I disagree, we argue loudly"), separation (i.e., "When we have a conflict, we separate but expect to deal with it later"), domination (i.e., "I try to take control when we argue"), and submission (i.e., "Sometimes I agree with my partner so the conflict will end"). Scores on the RPCS have been found to be correlated with communication and relationship satisfaction (Zacchilli et al., 2009). In the present study, coefficient alphas ranged from good to excellent (0.79 for avoidance, 0.86 for separation, 0.89 for interactional reactivity, 0.91 for submission, 0.92 for domination, and 0.95 for compromise).

Substance Craving Following Conflict. The Brief Substance Craving Scale (BSCS; Somoza, Dyrenforth, Goldsmith, Mezinskis, & Cohen, 1995) is an 8-item self-report measure that was used to assess craving following conflict (see Appendix L). The BSCS assesses craving across three domains: intensity, frequency, and length of craving over the past 24 hours on a 5-point Likert-type scale (0 = *none at all,* 4 = *very long*). The BSCS was modified to ask participants to rate the intensity, frequency, and length of craving in the 24 hours following interpersonal conflict with their romantic partner regarding substance use. Additionally, participants were asked to write the number of

times they think they had craving for the substance during the past 24 hours. The BSCS was also modified to ask participants to identify the primary substance for which they were being treated and a second craved substance during the past 24 hours and to provide ratings for the intensity, frequency, and length of craving for the primary substance. Intensity, frequency, and length ratings on the BSCS were summed to derive a composite measure of craving following conflict. Internal consistency in the present sample was excellent ($\alpha = .93$).

The Desires for Drugs Questionnaire (DDQ; Franken, Hendriks, & van den Brink, 2002) is a 13-item self-report measure that was used to assess craving following conflict across three domains (see Appendix M). Although the DDQ was originally developed to assess craving for heroin only, questions were modified for the present study to assess craving for substances in general. In addition, the DDQ instructions were modified to facilitate measurement of craving following conflict specifically. In particular, participants were instructed to think of a typical interpersonal conflict they had with their romantic partner regarding substance use and to rate their level of agreement with each of the statements during or after the conflict. The DDQ assesses craving across three domains: desire and intention (i.e., "I would do almost anything to use drugs), negative reinforcement (i.e., "Even major problems in my life would not bother me if I used drugs now"), and control (i.e., "If I started using drugs now I would be able to stop") on a 5-point Likert-type scale (1 = *strongly disagree,* 5 = *strongly agree*). Items on each subscale of the DDQ were summed to assess different dimensions of craving following conflict surrounding their substance use. The DDQ demonstrates good reliability and validity (Franken et al., 2002). Internal consistencies in the present sample ranged from

good to excellent (0.72 for control, 0.91 for negative reinforcement, and 0.93 for the desire and intention to use drugs).

Substance Use. The Drug Use Questionnaire (DUQ; Hien & First, 1991) is a self-report measure that was used to assess frequency of substance use over the past year (see Appendix N). This variable was explored as a potential covariate in analyses. Participants rate the frequency with which they have used each substance on a 6-point Likert-type scale (0 = *never,* 5 = *4 or more times per week*). Responses to the DUQ were summed to create an overall score representing frequency of substance use. Scores on the DUQ have been found to be associated with craving and demonstrate convergent validity with substance use disorder diagnoses (Lejuez et al., 2007; Tull et al., 2013). The DUQ was used to assess a potential covariate, as past-year substance use frequency has been shown to be associated with craving (Tull et al., 2013), and obtain descriptive data on the sample regarding substance use history. Internal consistency in the present sample was good (α = .70).

Procedure

The study consisted of a single assessment session at the treatment facilities. Prior to participating, all patients were introduced to the study through a group presentation. Participants were told that the purpose of this study was to examine the ways in which addiction may influence emotions, the management of emotion, psychological problems, and relationships. Patients were informed of the risks of the study. Those interested in participating were provided with more information about the study and the informed consent form. Those providing informed consent were administered paper and pencil self-report questionnaires. At the end of the session, participants were provided with a

candy bar or bag of chips as reimbursement. This form of reimbursement was recommended by treatment facility staff and the research manager, Dr. Alec Boros (personal communication, January 19, 2017 with Dr. Matthew Tull) at Oriana House, Inc. (the group that runs the treatment facilities).

Analysis Plan

All analyses were conducted in SPSS version 25 (IBM, 2017). Pearson product-moment correlation analyses were performed to examine zero-order associations among primary variables of interest. To identify covariates for primary analyses, associations between demographic variables (i.e., age, racial/ethnic background, gender, relationship satisfaction, and length of relationship), past year substance use frequency, and outcome variables of interest were examined using t-tests and Pearson product-moment correlation analyses. To test hypotheses A-C, Pearson product-moment correlations between PTSD symptom severity and ER, IER, communication patterns, and craving following conflict among individuals with Criterion A traumatic exposure were conducted. Next, a series of partial correlations were conducted to evaluate whether significant associations between PTSD symptom severity and ER, IER, communication patterns, and craving remain when relevant covariates were included.

To test hypothesis D, a series of path analyses were conducted to examine the indirect relation between PTSD symptom severity and craving dependent variables through ER (or IER) and communication behaviors using the PROCESS macro version 3.4 for SPSS (Model 6 [sequential mediation]; Hayes, 2018). Pearson product-moment correlations between PTSD symptom severity, ER, IER, communication behavior variables, and craving variables were examined to identify variables to include in the

models. Specifically, to be included in the model, the first intervening variable (M1; ER or IER) had to be significantly associated with PTSD symptom severity (X) and the second intervening variable (M2; communication behaviors). Likewise, M2 had to be associated with M1 and the dependent variable, craving following romantic conflict (Y). Simple indirect relations and sequential indirect relations were evaluated using bias-corrected 95% confidence intervals based on 5,000 bootstrap samples and a robust estimation of standard errors (Huber-White estimator of variance) to correct for heteroscedasticity (Huber, 1967; White, 1980). These analyses were then repeated with the inclusion of relevant covariates (variables demonstrating a significant association with the outcome variables).

Chapter Three

Results

Preliminary Analyses

Correlations among the primary outcome variables of interest and potential covariates (i.e., age, past-year substance use frequency, relationship satisfaction, and length of relationship) are reported in Table 1. Age was significantly negatively associated with ER difficulties, the IER strategy of venting, the communication behavior variables of self-demand/partner withdraw, interactional reactivity, domination, and submission communication patterns, and the craving following conflict outcome variables of DDQ-desire and intention, DDQ-control, and BSCS-craving following conflict (see Table 1). Past-year substance use frequency was significantly positively associated with ER difficulties, the communication behavior variables of interactional reactivity, separation, domination, and submission, DDQ-desire and intention, DDQ-perceived negative reinforcing role of substance use, and DDQ-perceived control over substance use following conflict (see Table 1). Past-year substance use frequency was significantly negatively associated with IER efficacy of regulating negative emotions (see Table 1). Relationship satisfaction was significantly negatively associated with ER difficulties, the communication behavior variables of demand/withdraw, interactional reactivity, and domination (see Table 1). Relationship satisfaction was significantly positively associated with the communication behavior variables of constructive, compromise, and avoidance (see Table 1). Primary outcome variables of interest were not significantly associated with length of relationship (see Table 1).

Primary variables of interest significantly differed as a function of gender, such that women reported engaging in significantly greater IER strategy of reassurance-seeking, IER tendency to regulate positive emotions, and BSCS-craving following conflict than men (see Table 2). Primary outcome variables of interest did not differ as a function of ethnicity (racial/ethnic minority vs. non-minority) or income (< 9,999 vs. ≥ 10,000), *p*s > .05. Therefore, age, relationship satisfaction, past-year substance use frequency, and gender were entered as covariates for analyses where the primary outcome variables demonstrated significant associations with the aforementioned variables.

Primary Analyses

Hypothesis A. Pearson product-moment correlation analyses revealed significant positive zero-order associations between PTSD symptom severity and ER difficulties and IER strategies of venting and reassurance-seeking (see Table 3). The association between PTSD symptom severity and ER difficulties remained significant when controlling for relevant covariates (see Table 4). The associations between PTSD symptom severity and IER strategies venting and reassurance-seeking were no longer significant when controlling for relevant covariates (see Table 4).

Correlation analyses did not reveal significant associations between PTSD symptom severity and IER variables of tendency to regulate negative emotions, efficacy in regulating negative emotions, tendency to regulate positive emotions, and efficacy of regulating positive emotions (see Table 3). However, there were significant positive associations between PTSD symptom severity and IER efficacy in regulating negative

emotions and the tendency to regulate positive emotions when controlling for relevant covariates (see Table 4).

Hypothesis B. Pearson product-moment correlation analyses revealed significant positive zero-order associations between PTSD symptom severity and the communication behavior variables of self-demand/partner-withdraw, partner-demand/self-withdraw, and separation (see Table 3). The associations between PTSD symptom severity and the communication behavior variables of self-demand/partner-withdraw and partner-demand/self-withdraw remained significant when controlling for relevant covariates (see Table 4).

Correlation analyses did not demonstrate significant associations between PTSD symptom severity and the communication behavior variables of constructive, compromise, avoidance, interactional reactivity, domination, or submission (see Table 3). However, there was a significant negative association between PTSD symptom severity and the communication behavior variable of constructive communication when controlling for relevant covariates (see Table 4).

Hypothesis C. Pearson product-moment correlation analyses revealed significant positive zero-order associations between PTSD symptom severity and BSCS-craving following conflict regarding substance use (see Table 3). The association between PTSD symptom severity and BSCS-craving following conflict remained significant when controlling for relevant covariates (see Table 4).

Correlation analyses did not reveal significant associations between PTSD symptom severity and any of the DDQ subscales, including the desire and intention to use drugs, negative reinforcement, or control following conflict regarding substance use,

at a zero-order level (see Table 3) or when controlling for relevant covariates (see Table 4).

Hypothesis D.

DDQ desire and intention to use drugs following conflict

Although the direct association of PTSD symptom severity to the desire and intention to use drugs following conflict was not significant, results revealed significant indirect associations of PTSD symptom severity to the desire and intention to use drugs following conflict through ER difficulties alone and through both ER difficulties and domination communication behavior (see Figure 1). The significant indirect association of PTSD symptom severity to the desire and intention to use drugs following conflict through ER difficulties remained significant when relevant covariates were added. However, the sequential indirect association of PTSD symptom severity to the desire and intention to use drugs following conflict through ER difficulties and, subsequently, domination communication behavior was no longer significant when relevant covariates were added (95% CI included 0).

Results did not reveal a significant direct association of PTSD symptom severity to the desire and intention to use drugs following conflict, or indirect associations of PTSD symptom severity to the desire and intention to use drugs following conflict through IER strategy venting or venting and domination communication behavior (see Figure 2). Results remained the same when relevant covariates were added (95% CIs included 0).

BSCS craving following conflict

Results revealed a significant direct association of PTSD symptom severity to craving following conflict and a significant indirect association of PTSD symptom severity to craving following conflict through ER difficulties (see Figure 3). However, the indirect association of PTSD symptom severity to craving following conflict through ER difficulties was no longer significant when relevant covariates were added (95% CIs included 0). Results did not reveal significant indirect associations of PTSD symptom severity to craving following conflict through ER difficulties and, subsequently, any of the communication behaviors, including self-demand/partner-withdraw, partner-demand/withdraw, and domination (see Figure 3). Indirect associations remained not significant when relevant covariates were added (95% CIs included 0).

Although the direct association of PTSD symptom severity to craving following conflict was significant, results did not reveal significant indirect associations of PTSD symptom severity to craving following conflict through IER strategy venting or through the sequential path of venting and any of the communication behaviors (i.e., demand/partner-withdraw, partner-demand/self-withdraw, or domination; see Figure 4). Indirect associations remained not significant when relevant covariates were added (95% CIs included 0).

Likewise, results did not reveal significant indirect associations of PTSD symptom severity to craving following conflict through IER strategy reassurance-seeking or the sequential path through reassurance-seeking and then self-demand/partner-withdraw or partner-demand/self-withdraw communication behaviors (see Figure 5). Indirect associations remained not significant when relevant covariates were added (95% CIs included 0).

Chapter Four

Discussion

The goal of this study was to examine the role of ER difficulties, IER, and communication behaviors in the relation between PTSD symptom severity and craving in the context of interpersonal conflict surrounding substance use. Study hypotheses were partially supported.

Hypothesis A

First, we hypothesized that those with more severe PTSD symptoms would exhibit greater ER difficulties, greater use of maladaptive IER strategies, greater tendency to regulate emotions interpersonally, and lesser efficacy of regulating emotions interpersonally. Hypothesis A was partially supported. Individuals reporting more severe PTSD symptoms also reported greater ER difficulties at the zero-order level and when taking into account variance associated with age, relationship satisfaction, and past-year substance use frequency. Although PTSD symptom severity was significantly positively associated with IER strategies of venting and reassurance-seeking at the zero-order level, there were no significant associations between PTSD symptom severity and IER strategies venting and reassurance-seeking when controlling for age and gender. In addition, PTSD symptom severity was significantly positively associated with greater IER efficacy in regulating negative emotions and tendency to regulate positive emotions when taking into account variance associated with gender and past-year substance use frequency. There were also no significant associations between PTSD symptom severity and IER tendency to regulate negative emotions and efficacy in regulating positive emotions when controlling for age and gender.

These results add to the growing body of literature demonstrating a robust association between PTSD symptom severity and ER deficits, particularly among individuals with a SUD (Dixon-Gordon et al., 2014; McDermott et al., 2009; Tull et al., 2011; 2013; 2018). PTSD is characterized by alterations in areas of the brain associated with the experience and expression of affect (Lanius et al., 2010; Liberzon & Sripada, 2007) and by the experience of frequent and intense negative emotions (Finucane et al., 2011). The experience of frequent and intense negative emotions may be difficult for individuals with PTSD to tolerate and modulate. As a result, individuals with PTSD may interpret intense negative emotions as unpredictable, dangerous, and out of control, further leading to difficulties in tolerating or modulating negative emotions.

In addition to adding to the relevance of ER difficulties among individuals with PTSD-SUD, the current study is the first study to highlight the relevance of IER to PTSD symptom severity among individuals with SUDs. Contrary to expectations, PTSD symptom severity was found to be associated with greater efficacy in regulating negative emotions with others. Given that PTSD is associated with more frequent and heightened negative emotions, individuals with PTSD may have greater opportunities to and experiences with the regulation of negative emotions with others. In addition, it is important to note that the measure used to assess this construct does not ask about the outcome of such regulation efforts. Thus, although individuals with PTSD may perceive that they are able to effectively regulate their negative emotions through others, the other individual in the interaction may not perceive those regulation attempts as being effective.

In addition to greater efficacy in regulating negative emotions with others, consistent with hypotheses, greater PTSD symptom severity was associated with the greater tendency to interpersonally regulate positive emotions. PTSD is associated with deficits in the experience and expression of positive emotions (Litz et al., 2000), as well as difficulties in the regulation of positive emotions (Roemer et al., 2001; Weiss et al., 2015). In the context of difficulties with intrapersonally regulating positive emotions, individuals with PTSD may look to others to regulate their positive emotions. It is also possible that, similar to the finding for negative IER efficacy, the greater tendency to regulate positive emotions interpersonally may reflect that individuals with more severe PTSD symptoms are simply having more frequent and intense emotional experiences overall. It is also important to consider that the tendency to regulate positive emotions interpersonally may have positive and negative consequences for individuals with PTSD-SUD. A positive consequence may include building closer relationships with others through sharing positive emotions (affiliative; Fischer & Manstead, 2008). Negative consequences for the individual may include placing a strain on others while attempting to regulate their emotions interpersonally or increasing risk for substance use (i.e., using substances with others to celebrate). As stated previously, our measure of IER does not speak to the quality of IER strategies used or their consequences for relationship functioning; therefore, the effectiveness of the IER strategies used cannot be determined.

Although PTSD symptom severity was significantly positively associated with the IER strategies of venting and reassurance-seeking at the zero-order level, this association was no longer significant when accounting for age and gender. Thus, it is possible that PTSD symptom severity served as a proxy risk factor for venting and reassurance-

seeking (see Kraemer et al., 2001), only demonstrating an association because of its association with gender and age. Thus, age and gender may be more likely to influence the use of these IER strategies.

Hypothesis B

Second, we hypothesized that participants with more severe PTSD symptoms would report engaging in maladaptive communication patterns to a greater extent and adaptive communication patterns to a lesser extent. Hypothesis B was partially supported. Individuals reporting more severe PTSD symptoms also reported greater self- and partner-demand/withdraw communication patterns at the zero-order level and when taking into account variance associated with age and relationship satisfaction. There was no significant association between PTSD symptom severity and constructive communication at the zero-order level. However, when controlling for age and relationship satisfaction, there was a significant negative association between PTSD symptom severity and constructive communication. Although PTSD symptom severity and separation communication patterns were significantly positively associated at the zero-order level, there were no significant associations between PTSD symptom severity and compromise, avoidance, interactional reactivity, separation, domination, and submission communication patterns when taking into account variance associated with age, relationship satisfaction, and past-year substance use frequency.

As expected, PTSD symptom severity was negatively associated with constructive communication when taking into account age and relationship satisfaction. Studies have demonstrated associations between PTSD and maladaptive communication patterns (Fredman et al., 2017). However, the present study suggests that greater PTSD symptom

severity, when accounting for the variance associated with age and relationship satisfaction, is associated with significantly less constructive communication. It is possible that given the heightened negative affect associated with PTSD (Finucane et al., 2011) and alterations in the experience and expression of affect (Lanius et al., 2010; Liberzon & Sripada, 2007), in the context of romantic conflict, individuals with PTSD may be less likely to use adaptive communication patterns and more likely to use maladaptive communication patterns due to heightened negative affect. Also, as expected, PTSD symptom severity was positively associated with self-demand/partner-withdraw and partner-demand/self-withdraw communication patterns. Studies have demonstrated associations between withdraw/demand communication patterns and PTSD (Fredman et al., 2017) and substance use (Kelly et al., 2002). The present study has extended previous findings in that demand/withdraw communication patterns are prevalent among individuals with a SUD and among those with greater PTSD symptom severity. When individuals with PTSD-SUD engage in conflict with romantic partners, it is possible that ER difficulties associated with the co-occurrence of these disorders lead to low tolerance of expressed and experienced negative affect during conflict. Consequently, in an attempt to escape the experience of negative affect, an individual may withdraw from the conversation. Alternatively, the expression of blame and criticism may be due to difficulties down-regulating negative affect, resulting in an escalation of the conflict and increased animosity towards a partner.

PTSD symptom severity was not found to be associated with the use of compromise, avoidance, interactional reactivity, domination, and submission communication patterns at the zero-order level. This could be due to the heightened use

of maladaptive communication patterns and lower use of adaptive communication patterns across all participants regardless of PTSD symptom levels given the clinical nature of this sample. Although PTSD symptom severity was significantly positively associated with separation communication pattern at the zero-order level, it was no longer significant when accounting for age, relationship satisfaction, and past-year substance use frequency, again suggesting that PTSD symptom severity may be a proxy risk factor for these other variables and their association with separation communication patterns. (see Kraemer et al., 2001).

Hypothesis C

Third, we hypothesized that participants with more severe PTSD symptoms would report greater craving in the context of interpersonal conflict regarding substance use. Hypothesis C was partially supported. As hypothesized, PTSD symptom severity was also found to be associated with greater craving following conflict, conceptualized as a composite of intensity, frequency, and duration of craving for substances following conflict regarding substance use, at the zero-order level and when taking into account variance associated with age and gender. Substances can be used to down-regulate negative affect for individuals with PTSD-SUD (Baker et al., 2004; Khantzian, 1997). It is possible that for individuals that have used substances as a method of modulating negative emotional states, conflict with a romantic partner may increase craving for substances as a way to down-regulate negative affect. In addition to this, if the topic of conflict is substance use, the content can serve as a substance cue, eliciting craving.

PTSD symptom severity was not found to be significantly associated with the craving outcomes of the desire and intention to use drugs following conflict, perceived

ability to reduce negative states with substances, or perceived control over substance use following conflict at the zero-order level or when controlling for age and past-year substance use frequency. Similar to findings regarding communication patterns, this finding may be due to the nature of our sample. Within a sample of patients with SUDs, it might be expected that desire and intention to use drugs, perceived ability to reduce negative states with substances, and perceived control over substance use would be heightened regardless of psychopathology present. Also, similar to other findings, although PTSD symptom severity was significantly positively associated with craving at the zero-order level, it was no longer significant when accounting for age and past-year substance use frequency. Such a finding is not surprising given the strong association between past-year substance use frequency and craving (Tull et al., 2013).

Hypothesis D

Lastly, we hypothesized there would be significant sequential indirect relations of PTSD symptom severity to dimensions of craving following conflict through ER difficulties or maladaptive IER strategy use and maladaptive communication patterns. Hypothesis D was partially supported. There was a significant indirect relation of PTSD symptom severity to both the desire and intention to use drugs following conflict and craving following conflict through ER difficulties. When adding age and past-year substance use frequency as covariates to the model examining the desire and intention to use drugs following conflict as the outcome, the indirect association through ER difficulties remained significant. However, when covariates were included in the model examining craving following conflict as the outcome, the indirect association through ER difficulties was no longer significant. Results demonstrating a significant indirect relation

of PTSD symptom severity to the desire and intention to use drugs following conflict and to craving following conflict through ER difficulties are consistent with past empirical literature. Individuals with PTSD-SUD are at a greater risk for relapse given the interpersonal problems associated with these disorders, such as increased isolation, lack of social support, and decreased relationship satisfaction (Kaniasty & Norris, 2008; King et al., 2006; Marshal, 2003). As previously discussed, the frequent negative affect and difficulties with the experience and expression of affect associated with PTSD may lead to difficulties with regulating negative affect across contexts, including during conflict with a romantic partner. Additionally, difficulty with regulating negative emotions coupled with the substance use-related conflict serving as a substance cue, may increase an individual's desire to use substances to cope with the negative affect. However, it is important to note that, when accounting for age, gender, and past-year substance use frequency in the model, the indirect association was no longer significant for craving following conflict. One reason for this is the strong relation between substance use frequency and cravings, PTSD symptom severity, and ER difficulties (Bornovalova et al., 2009; Gratz et al., 2008; Tull et al., 2013). Thus, considering substance use frequency in the model may have reduced variance in craving that could be accounted for by the other variables in the model.

Results also revealed a significant sequential indirect relation of PTSD symptom severity to the desire and intention to use drugs following conflict through ER difficulties and domination communication pattern, extending upon the present study's previous findings. However, when adding past-year substance use frequency and age as covariates, the indirect association was no longer significant. ER difficulties stemming from more

severe PTSD symptoms may result in the greater use of domination strategies in order to guide the partner's response in a desired way that minimizes distress for the individual. Additionally, given the association between PTSD and aggression (Taft et al., 2017), it is likely that those with greater PTSD symptom severity are more likely to use aggressive communication strategies such as domination. Further, one of the potential consequences of trauma exposure is a feeling of loss of control, potentially contributing to the development of PTSD (Foa et al., 1992) and further leading to a potential need for control. Thus, the use of domination communication patterns may be conceptualized as attempts to exert control during conflict. However, the use of domination strategies is likely to not result in the resolution of conflict. As conflict continues and negative affect increases, individuals may then experience increased cravings for substances as a way of escaping that negative affect. It is important to note that, when accounting for age and past-year substance use frequency, the sequential indirect relation through emotion dysregulation and dominance was no longer significant. Again, because of the strong association between substance use frequency and craving (Tull et al., 2013), it is possible that covarying for past-year substance use frequency may have eliminated the variance in the desire and intention to use drugs that could be accounted for by other variables included in the model.

There were no significant indirect relations of PTSD symptom severity to the desire and intention to use drugs following conflict through IER strategy venting and/or domination communication behaviors. There were also no significant indirect relations of PTSD symptom severity to craving following conflict through ER difficulties or venting and self- or partner-demand/withdraw or domination communication behaviors. Finally,

there were no significant indirect relations of PTSD symptom severity to craving following conflict through IER strategy reassurance-seeking and/or self- or partner-demand/withdraw communication patterns. The lack of significant indirect relations to the desire and intention to use drugs and craving following conflict through IER strategy use may be due to the measurement of these constructs. The DIRE (Dixon-Gordon et al., 2014) assesses IER strategy use in various scenarios (i.e., work, friendships), which may not generalize to strategy use during romantic conflict or be particularly salient for individuals court-mandated substance abuse treatment. Additionally, the lack of significant indirect relations to craving following conflict through ER difficulties and self- or partner-demand/withdraw communication patterns could be due to the measurement and lack of variability of the construct in this sample. The BSCS (Somoza et al., 1995) measures craving as a composite of the intensity, frequency, and length of craving over 24 hours and was modified to assess craving over 24 hours following conflict regarding substance use. The broad conceptualization of this construct may encompass aspects of craving (i.e., physiological withdrawal) that may not be as relevant to interpersonal contexts. Additionally, because the present sample is in treatment for an SUD, reported craving may be heightened regardless of PTSD symptom severity.

Limitations and Future Directions

Although the present study is the first to examine the role of ER difficulties, IER, and communication patterns in the association between PTSD symptom severity and craving following conflict, several limitations warrant discussion. The first limitation is the utilization of self-report measures to assess PTSD symptom severity, ER difficulties, IER, conflict, and craving. Self-report measures may be influenced by bias in

retrospective recall and social desirability. Additionally, self-report measures do not capture the physiological components of ER difficulties, IER, and craving. Future studies would benefit from using clinician-administered interviews, physiological measures of ER difficulties, and behavioral observations of communication patterns. The measures included in the study are empirically supported in capturing the intended constructs. However, it is important to consider the limitations of assessing one individual on constructs involving a dyad. Future studies should include partner reports of conflict and communication patterns. Additionally, laboratory-based studies that incorporate romantic partners would be beneficial in that self-report and the actual expression of communication behaviors may be different, especially between participant and their romantic partners. Second, the current study is limited in ethnic/racial diversity. Although the present study is representative of the population in which the data was collected, the present study may not generalize to the experiences of individuals from diverse backgrounds.

Additionally, because participants were abstaining from substance use and in a treatment setting that included interventions focused on interpersonal communication and coping strategies, ER difficulties and maladaptive communication patterns may be less severe than what would be observed among individuals with a SUD that are currently using substances. Therefore, replications in larger, more diverse, and other clinical samples are needed. Third, the data in the present study are cross-sectional. Therefore, the temporal relation between PTSD symptom severity and craving following conflict and the role of ER and IER difficulties and communication patterns cannot be established. Thus, prospective longitudinal studies utilizing ecologically valid methods

(i.e., ecologically momentary assessment; EMA) are needed to examine the temporal associations between PTSD, ER difficulties, communication behaviors, and craving following conflict.

Conclusions and Clinical Implications

Despite these limitations, the present study provides an initial step in attempting to understand the potential risks for substance use and relapse within the context of a romantic relationship, particularly among individuals with a history of trauma exposure and has important clinical implications. Additionally, the present study adds to extent literature on ER difficulties and PTSD in SUDs by examining the influence of IER. Although results did not provide support for an indirect relation of PTSD symptom severity to the desire and intention to use drugs or craving following conflict through IER, PTSD symptom severity was significantly associated with efficacy of regulating negative emotions with others and tendency to regulate positive emotions with other when accounting for relevant covariates. Results support the examination of IER tendency and efficacy of both positive and negative emotions among individuals with a history of trauma exposure and seeking treatment for an SUD. Examining IER among this population and its potential consequences on social support is particularly relevant for individuals with PTSD-SUD (King et al., 2006; Kaniasty & Norris, 2008; Spohr et al., 2019). IER skills training has demonstrated efficacy in improving affect regulation, interpersonal skills difficulties, and PTSD symptoms among women with PTSD (Cloitre et al., 2002). However, the role and benefit of IER in PTSD-SUD remains unclear.

Current PTSD-SUD treatments typically focus on the individual and include non-exposure based psychosocial treatment, exposure-based psychosocial treatments, and

medication (for a review see Berenz & Coffey, 2012). The results of the current study support the potential utility of couple-based treatments for PTSD-SUD. Couple-based treatments for PTSD-SUD include couple treatment for alcohol use disorder and PTSD (CTAP: Schumm et al., 2015), which integrates behavioral couple therapy for alcohol use disorders (O'Farrell & Fals-Stewart, 2006) and cognitive-behavioral conjoint therapy for PTSD (Monson & Fredman, 2012). However, literature on the efficacy of these treatments is limited, and much of the literature on the efficacy of couple-based treatments for PTSD-SUD involves military samples and may not generalize to community samples. Also, these treatments involve communication skills training and recommend avoiding discussions regarding substance use outside of the therapy session to reduce risk for substance use (O'Farrell & Fals-Stewart, 2006). However, the expectation that couples do not discuss substance use is unlikely. Additionally, the factors that led to increased risk for substance use or relapse following this discussion are unknown. The present study suggests that difficulties in ER may explain some of this risk, and therefore, warrants further investigation as a potential area of intervention to further decrease risk for substance use/relapse for couples in treatment for PTSD-SUD. Further, these treatments do not take into consideration difficulties with ER or IER, which may be influenced by addition of the romantic partner into treatment. For example, CTAP teaches diaphragmatic breathing for anger management, using "time out" to avoid escalation in conflict, and psychoeducation about emotions (Schumm et al., 2015). The current study suggests that ER and IER skills training in couple treatment for PTSD-SUD is an area warranting additional investigation as a means for potentially decreasing risk for substance use.

Table 1. Correlations between primary variables of interest and potential covariates.

Variable	Age	DUQ	Relationship Satisfaction	Relationship Length
PTSD symptom severity	**-.24**	**.34**	.17	.10
ER Difficulties	**-.33**	**.38**	**-.28**	.04
Reassurance-Seeking	-.19	.18	.15	-.08
Venting	**-.27**	.18	-.22	-.09
Negative Tendency	.01	.05	.16	.08
Negative Efficacy	.01	**-.23**	.01	.004
Positive Tendency	.05	-.18	.03	.12
Positive Efficacy	.01	-.17	.13	.06
Constructive Communication	.16	-.09	**.71**	-.11
Self-demand/Partner-withdraw	**-.25**	.19	**-.31**	-.04
Partner-demand/self-withdraw	-.18	.20	**-.35**	.03
Compromise	-.05	.09	**.75**	.01
Avoidance	.09	.08	**.31**	.01
Interactional Reactivity	**-.24**	**.30**	**-.42**	-.01
Separation	-.17	**.25**	.12	.06
Domination	**-.31**	**.26**	**-.26**	-.11
Submission	**-.27**	**.28**	-.22	.04
Desire and Intention	**-.25**	**.51**	-.07	-.09
Negative Reinforcement	-.11	**.37**	-.13	-.04
Control	**-.22**	**.25**	-.01	-.10
Craving	**-.22**	**.33**	-.03	.02
N	81	82	79	81
Mean	32.26	14.81	116.80	57.50
SD	7.21	9.45	36.27	60.62

Note. DUQ = Past-year substance use frequency. ER = Emotion regulation. PTSD = Posttraumatic stress disorder. SD = Standard Deviation.
Relationship length is in months.
Significant correlations are highlighted in bold, $p < .05$.

Table 2. Results of *t*-tests examining gender differences in the primary variables of interest.

	Men $N = 53$		Women $N = 29$				
	M	*SD*	*M*	*SD*	*df*	*t*	Cohen's *d*
ER Difficulties	83.38	24.66	88.17	26.30	80	-.82	.19
Reassurance-Seeking	15.49	5.34	18.85	6.27	80	-1.94*	.58
Venting	13.25	4.96	15.60	5.74	80	-2.56	.44
Negative Tendency	15.21	5.62	15.72	5.29	80	-.41	.09
Negative Efficacy	20.36	5.03	22.07	4.91	80	-1.49	.34
Positive Tendency	18.89	6.64	22.03	3.96	79.34	-2.69**	.58
Positive Efficacy	19.91	5.36	20.59	4.52	80	-.58	.14
Constructive Communication	55.87	14.89	59.21	15.85	79	-.94	.22
Self-demand/Partner-withdraw	20.87	12.86	23.18	14.02	78	-.74	.17
Partner-demand/self-withdraw	25.97	12.56	26.00	11.83	78	-.01	.002
Compromise	38.69	13.92	44.07	12.33	79	-1.73	.41
RPCS Avoidance	8.21	3.10	9.34	2.76	79	-1.64	.39
Interactional Reactivity	13.69	8.28	10.74	8.52	79	1.52	.35
Separation	11.15	5.36	11.97	5.72	79	-.64	.15
Domination	10.00	7.52	8.45	6.75	79	.92	.22
Submission	10.38	6.09	8.79	5.46	79	1.17	.28
Desire and Intention	6.23	8.47	5.66	8.49	80	.29	.07
Negative Reinforcement	5.98	6.36	5.76	5.32	80	.16	.04
Control	2.49	2.81	1.86	2.41	80	1.02	.24
Craving	3.32	3.59	5.03	3.86	80	-2.01*	.46

*$p < .05$, **$p < .01$

Note. df = Degrees of freedom. DIRE = Difficulties in regulation of emotion. ER = Emotion regulation. M = Mean. SD = Standard Deviation.

Table 3. Descriptive statistics for and correlations among primary variables of interest.

Variable	1	2	3	4	5	6	7	8
1. PTSD	--	**.48**	**.26**	**.29**	.21	.16	.21	.14
2. ER Difficulties	--	--	**.28**	**.56**	-.06	-.05	-.12	-.16
3. RS	--	--	--	**.53**	**.40**	**.24**	.20	**.22**
4. Venting	--	--	--	--	.08	.07	-.01	-.03
5. Negative Tendency	--	--	--	--	--	**.60**	**.56**	**.68**
6. Negative Efficacy	--	--	--	--	--	--	**.57**	**.73**
7. Positive Tendency	--	--	--	--	--	--	--	**.70**
8. Positive Efficacy	--	--	--	--	--	--	--	--
9. CC	--	--	--	--	--	--	--	--
10. SDPW	--	--	--	--	--	--	--	--
11. PDSW	--	--	--	--	--	--	--	--
12. Compromise	--	--	--	--	--	--	--	--
13. Avoidance	--	--	--	--	--	--	--	--
14. Interactional Reactivity	--	--	--	--	--	--	--	--
15. Separation	--	--	--	--	--	--	--	--
16. Domination	--	--	--	--	--	--	--	--
17. Submission	--	--	--	--	--	--	--	--
18. Desire and Intention	--	--	--	--	--	--	--	--
19. Negative Reinforcement	--	--	--	--	--	--	--	--
20. Control	--	--	--	--	--	--	--	--
21. Craving	--	--	--	--	--	--	--	--
N	82	82	82	82	82	82	82	82
Mean	40.08	85.08	14.09	16.68	15.39	20.96	20.00	20.15
SD	22.67	25.20	5.33	5.88	5.48	5.02	6.00	5.06

Note. CC = Constructive communication. ER = Emotion regulation. PDSW = Partner-demand/self-withdraw. PTSD = Posttraumatic stress disorder symptom severity. RPCS = Romantic partner conflict scale. RS = Reassurance-seeking. SD = Standard deviation. SDPW = Self-demand/partner-withdraw.
Significant correlations are highlighted in bold, $p < .05$.

Table 3 (cont.). Descriptive statistics for and correlations among primary variables of interest.

Variable	9	10	11	12	13	14	15	16
1. PTSD	-.15	**.29**	**.35**	.12	.19	.13	**.30**	.15
2. ER Difficulties	**-.42**	**.44**	**.50**	**-.26**	-.02	**.42**	.20	**.33**
3. RS	-.01	**.37**	**.29**	.13	.19	.14	.15	.13
4. Venting	**-.30**	**.51**	**.56**	-.21	-.13	**.35**	.20	**.31**
5. Negative Tendency	.07	.18	**.24**	.17	.09	.07	-.06	.19
6. Negative Efficacy	-.02	.02	.19	.12	.02	-.04	-.04	-.04
7. Positive Tendency	-.03	-.02	.06	.16	.03	-.10	-.01	.04
8. Positive Efficacy	.03	-.06	.08	.21	.01	-.06	.02	.07
9. CC	--	**-.48**	**-.49**	**.71**	**.39**	**-.58**	-.13	**-.43**
10. SDPW	--	--	**.77**	**-.29**	-.12	**.58**	.08	**.52**
11. PDSW	--	--	--	**-.32**	-.20	**.57**	.13	**.43**
12. Compromise	--	--	--	--	**.42**	**-.44**	.13	**-.28**
13. Avoidance	--	--	--	--	--	-.14	.03	-.14
14. Interactional Reactivity	--	--	--	--	--	--	**.27**	**.59**
15. Separation	--	--	--	--	--	--	--	.19
16. Domination	--	--	--	--	--	--	--	--
17. Submission	--	--	--	--	--	--	--	--
18. Desire and Intention	--	--	--	--	--	--	--	--
19. Negative Reinforcement	--	--	--	--	--	--	--	--
20. Control	--	--	--	--	--	--	--	--
21. Craving	--	--	--	--	--	--	--	--
N	81	80	80	81	81	81	81	81
Mean	57.02	21.68	25.98	40.62	8.62	12.63	11.44	9.44
SD	15.22	12.24	12.24	13.54	3.01	8.43	5.47	7.25

Note. CC = Constructive communication. ER = Emotion regulation. PDSW = Partner-demand/self-withdraw. PTSD = Posttraumatic stress disorder symptom severity. RPCS = Romantic partner conflict scale. RS = Reassurance-seeking. SD = Standard deviation. SDPW = Self-demand/partner-withdraw.
Significant correlations are highlighted in bold, $p < .05$.

Table 3 (cont.). Descriptive statistics for and correlations among primary variables of interest.

Variable	17	18	19	20	21
1. PTSD	.13	.18	.08	-.10	**.43**
2. ER Difficulties	.21	**.42**	**.34**	.17	**.45**
3. RS	.22	.07	-.04	.02	**.27**
4. Venting	.16	**.26**	**.27**	.02	**.39**
5. Negative Tendency	.13	.02	-.10	-.13	.12
6. Negative Efficacy	.14	-.21	**-.27**	**-.23**	-.01
7. Positive Tendency	.09	-.18	-.16	**-.24**	.02
8. Positive Efficacy	.20	-.20	-.21	**-.22**	.05
9. CC	**-.32**	-.20	-.13	.09	**-.27**
10. SDPW	**.33**	**.28**	.16	.003	**.32**
11. PDSW	**.33**	**.32**	.20	-.03	**.31**
12. Compromise	-.09	-.13	-.07	.05	-.01
13. Avoidance	.18	-.09	**-.29**	.14	.04
14. Interactional Reactivity	**.46**	.22	.11	-.03	.17
15. Separation	.18	.13	.09	.05	.08
16. Domination	**.42**	**.34**	**.31**	.10	**.25**
17. Submission	--	.05	-.01	.10	**.27**
18. Desire and Intention	--	--	**.68**	**.47**	**.48**
19. Negative Reinforcement	--	--	--	**.36**	**.29**
20. Control	--	--	--	--	.06
21. Craving	--	--	--	--	--
N	81	82	82	82	82
Mean	9.81	6.02	5.90	2.27	3.93
SD	5.89	8.43	5.98	2.68	3.75

Note. CC = Constructive communication. ER = Emotion regulation. PDSW = Partner-demand/self-withdraw. PTSD = Posttraumatic stress disorder symptom severity. RPCS = Romantic partner conflict scale. RS = Reassurance-seeking. SD = Standard deviation. SDPW = Self-demand/partner-withdraw.
Significant correlations are highlighted in bold, $p < .05$.

Table 4. Partial correlations between PTSD symptom severity and primary outcome variables.

Variable	*N*	Mean	SD	PTSD symptom severity	*p*
ER Difficulties[a]	78	85.34	25.20	.46	.000
Reassurance-Seeking[b]	81	16.69	5.91	.19	.09
Venting[b]	81	14.12	5.35	.21	.06
Negative Tendency[c]	82	15.39	5.48	.20	.07
Negative Efficacy[c]	82	20.96	5.02	.23	.04
Positive Tendency[c]	82	20.00	6.00	.25	.03
Positive Efficacy[c]	82	20.15	5.06	.21	.07
Constructive Communication[d]	76	57.02	15.49	-.32	.01
Self-demand/Partner-withdraw[d]	76	21.62	13.45	.31	.01
Partner-demand/self-withdraw[d]	76	25.92	12.28	.40	.000
Compromise[e]	77	40.77	13.82	.004	.97
RPCS Avoidance[e]	77	8.66	3.08	.16	.17
Interactional Reactivity[e]	77	12.56	8.62	.09	.45
Separation[e]	77	11.55	5.58	.21	.07
Domination[e]	77	9.25	7.32	.09	.43
Submission[e]	77	9.78	6.03	.07	.55
Desire and Intention[f]	81	6.10	8.45	-.01	.96
Negative Reinforcement[f]	81	5.98	5.98	-.07	.55
Control[f]	81	2.23	2.68	-.20	.08
Craving[c]	82	3.93	3.75	.32	.004

Note. ER = Emotion regulation. PTSD = Posttraumatic stress disorder. SD = Standard deviation.

p values listed as .000 are $p < .001$.

[a] Controlling for relationship satisfaction and past-year substance use frequency.

[b] Controlling for age and gender.

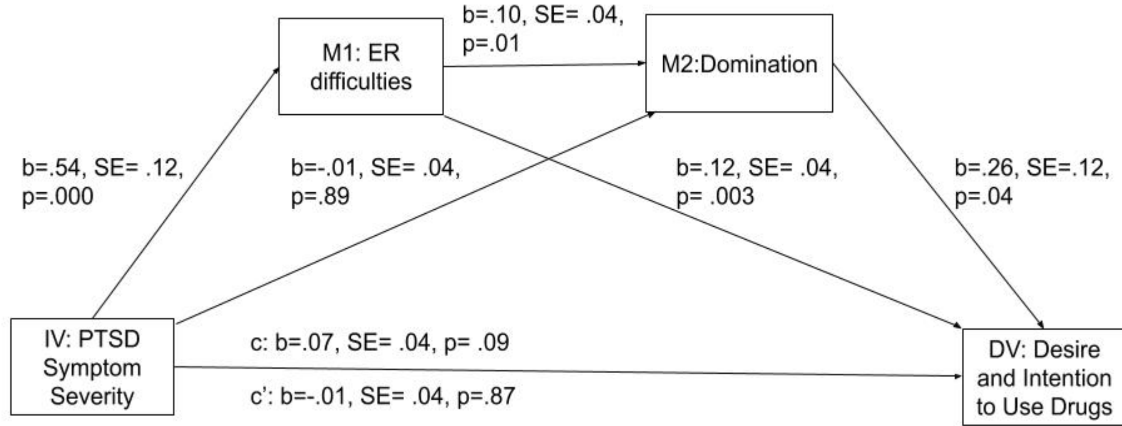
[c] Controlling for gender and past-year substance use frequency.

[d] Controlling for age and relationship satisfaction.

[e] Controlling for age, relationship satisfaction, and past-year substance use frequency.

[f] Controlling for age and past-year substance use frequency.

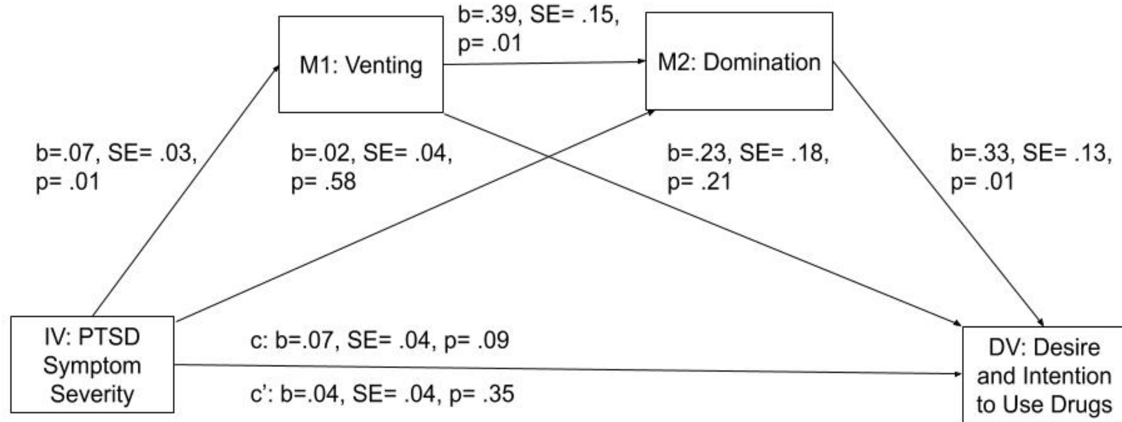
Figure 1. Indirect relations of PTSD symptom severity to the desire and intention to use drugs following conflict though ER difficulties and domination



Path	Effect (SE)	95% CI
IV → M1 → DV	.064 (.027)	(.022,.129)
IV → M2 → DV	-.001 (.014)	(-.027,.030)
IV → M1 → M2 → DV	.014 (.008)	(.001,.031)

Note. ER = Emotion regulation. PTSD = Posttraumatic stress disorder.
p values listed as .000 are $p < .001$.

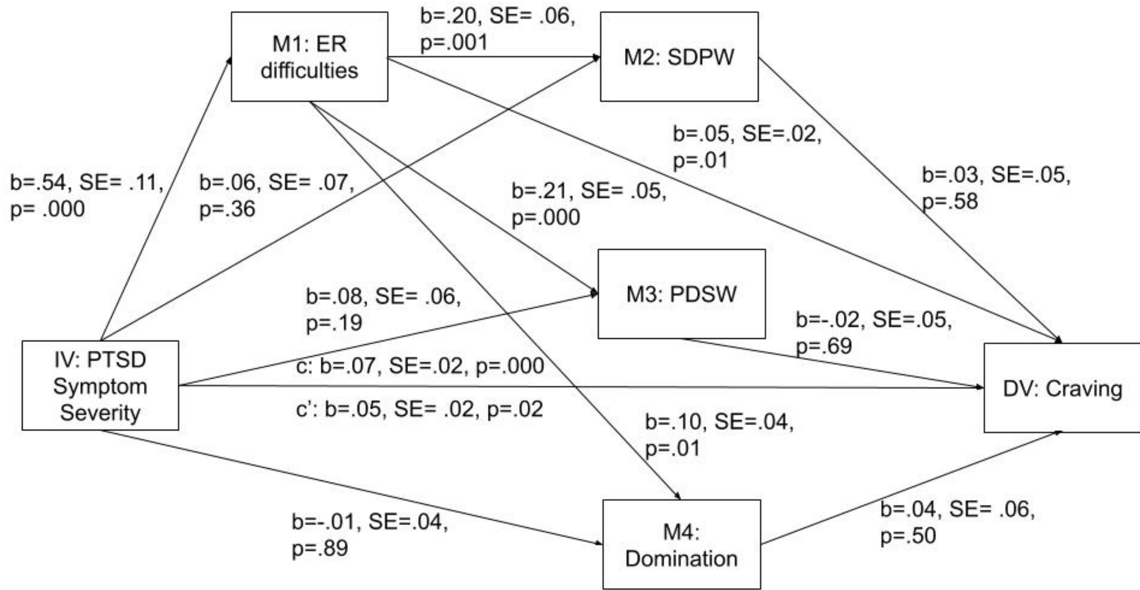
Figure 2. Indirect relations of PTSD symptom severity to the desire and intention to use drugs following conflict though venting and domination



Path	Effect (SE)	95% CI
IV → M1 → DV	.016 (.017)	(-.006,.059)
IV → M2 → DV	.007 (.016)	(-.022,.043)
IV → M1 → M2 → DV	.009 (.007)	(-.0002,.026)

Note. PTSD = Posttraumatic stress disorder.

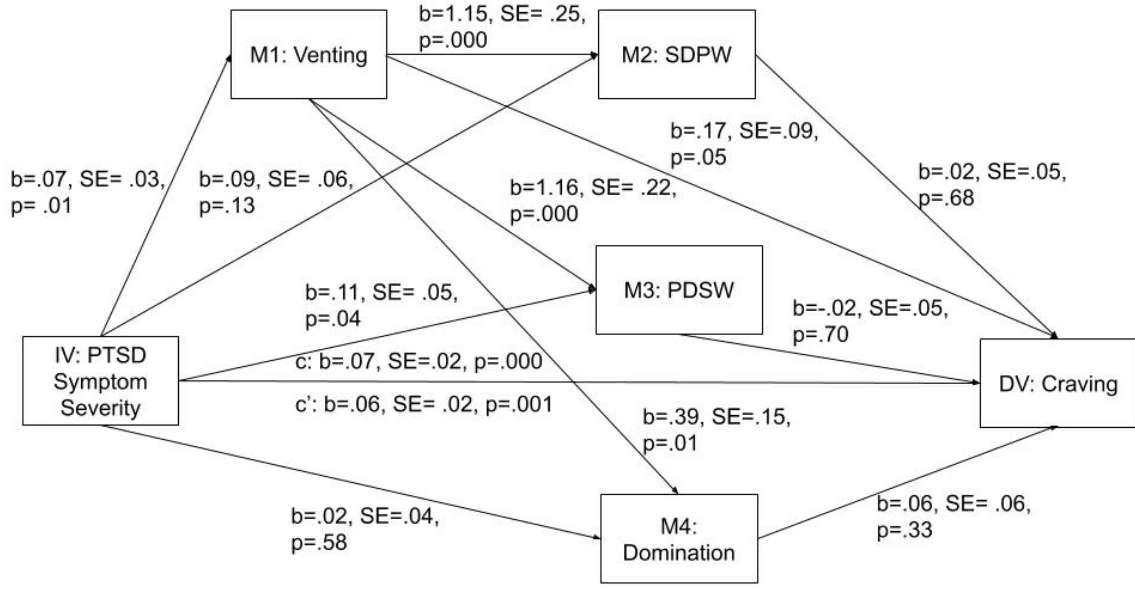
Figure 3. Indirect relations of PTSD symptom severity to craving following conflict though ER difficulties, demand/withdraw, and domination communication patterns



Path	Effect (SE)	95% CI
IV → M1 → DV	.102 (.052)	(.019,.219)
IV → M2 → DV	.002 (.014)	(-.020,.038)
IV → M3 → DV	-.005 (.016)	(-.041,.028)
IV → M4 → DV	-.007 (.020)	(-.054,.033)
IV → M1 → M2 → DV	.001 (.006)	(-.011,.013)
IV → M1 → M3 → DV	-.004 (.012)	(-.033,.016)
IV → M1 → M4 → DV	.004 (.008)	(-.011,.023)

Note. ER = Emotion regulation. PDSW = Partner-demand/self-withdraw. PTSD = Posttraumatic stress disorder. SDPW = Self-demand/partner-withdraw.
p values listed as .000 are $p < .001$.

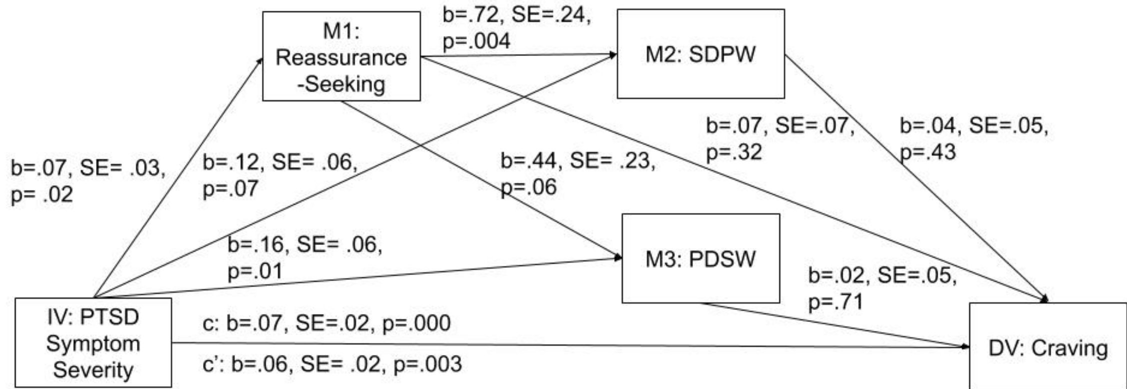
Figure 4. Indirect relations of PTSD symptom severity to craving following conflict though venting, demand/withdraw, and domination communication patterns



Path	Effect (SE)	95% CI
IV → M1 → DV	.025 (.031)	(-.019,.104)
IV → M2 → DV	.001 (.012)	(-.020,.032)
IV → M3 → DV	-.007 (.019)	(-.047,.031)
IV → M4 → DV	-.004 (.019)	(-.044,.038)
IV → M1 → M2 → DV	.001 (.004)	(-.005,.012)
IV → M1 → M3 → DV	-.002 (.007)	(-.020,.009)
IV → M1 → M4 → DV	.0004 (.003)	(-.005,.008)

Note. PDSW = Partner-demand/self-withdraw. PTSD = Posttraumatic stress disorder. SDPW = Self-demand/partner-withdraw.
p values listed as .000 are $p < .001$.

Figure 5. Indirect relations of PTSD symptom severity to craving following conflict though reassurance-seeking and demand/withdraw communication patterns



Path	Effect (SE)	95% CI
IV → M1 → DV	.004 (.005)	(-.003,.016)
IV → M2 → DV	.0006 (.0006)	(-.0005,.002)
IV → M3 → DV	.001 (.004)	(-.006,.012)
IV → M1 → M2 → DV	.001 (.002)	(-.001,.005)
IV → M1 → M3 → DV	-.0001 (.001)	(-.001,.001)

Note. PDSW = Partner-demand/self-withdraw. PTSD = Posttraumatic stress disorder. SDPW = Self-demand/partner-withdraw.
p values listed as .000 are $p < .001$

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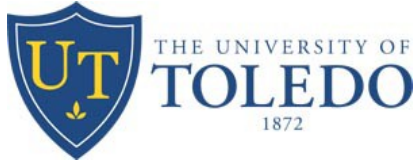

Appendix A

ADULT RESEARCH SUBJECT -
INFORMED CONSENT FORM
Opioid Abuse and Emotion

Principal Investigator: Matthew T. Tull, PhD, Professor, 419-530-2701

Purpose: You are invited to participate in the research project entitled, *Opioid Abuse and Emotion*, which is being conducted at CROSSWAEH under the direction of Dr. Matthew T. Tull. The purpose of this study is to better understand the effect of opioid abuse on emotions, how people manage their emotions, and psychological problems, such as anxiety and depression.

Description of Procedures: This research study will take place at CROSSWAEH. During the single research session, you will be asked to complete several questionnaires about your emotions, your mood and current difficulties, your history of substance use, experiences with opioids, and negative or distressing life events you may have experienced. Some of these questions are sensitive. You may refuse to answer any questions that make you feel uncomfortable. This session is expected to last approximately 45 minutes to one hour.

Data provided will not be shared with CROSSWAEH staff, parole officers, or anyone else involved in your care. Your participation in this study will in no way affect your treatment at CROSSWAEH.

Potential Risks: There are minimal risks to participation in this study, including loss of confidentiality. Given that you will be completing this study during your designated free time, the study may interfere with your ability to participate in some leisure activities or available time in the computer lab. Also, answering the surveys questions might cause you to feel upset or anxious. If so, you may refuse to answer any question or stop your participation at any time.

Potential Benefits: Eligible participants will receive one approximately 2oz candy bar for completing the study session. The only other direct benefit to you if you participate in this research may be that you will learn about how psychology experiments are run and may learn more about the relation between emotion and behaviors. Others may benefit by learning about the results of this research.

Confidentiality: The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached.

Voluntary Participation: Your refusal to participate in this study will involve no penalty

or loss of benefits to which you are otherwise entitled and will not affect your relationship with CROSSWAEH, The University of Toledo or any of your treatment providers. In addition, you may discontinue participation at any time without any penalty or loss of benefits. If you decide not to participate or wish to discontinue your participation at any point you will still receive one approximately 2oz candy bar.

Contact Information: Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation, or experience any physical or psychological distress as a result of this research, you may contact a member of the research team at (419)- 530-2701.

If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, the Chairperson of the SBE Institutional Review Board may be contacted through the Office of Research on the main campus at (419) 530-2844.

Before you agree to participate, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

SIGNATURE SECTION – Please read carefully

You are making a decision whether or not to participate in this research study. Your signature indicates that you have read the information provided above, you have had all your questions answered, and you have decided to take part in this research.

The date you sign this document to enroll in this study, that is, today's date must fall between the dates indicated at the bottom of the page.

______________________	______________________	__________
Name of subject (please print)	Signature	Date
______________________	______________________	__________
Name of person obtaining consent (please print)	Signature	Date

University of Toledo IRB Approved

Approval Date: 2/17/2017

Expiration Date: 3/21/2020

Appendix B

Demographic Questionnaire

Thank you for participating. If you have any questions while completing these measures, please let the researcher know. Remember that you can end this study at any point in time without penalty.

What was your sex at birth?
0 = Male
1 = Female
2 = Other (Please Specify):_________

Which of the following best describes your gender identity?
1 = Female/Woman
2 = Male/Man
3 = Transgender
4 = Other Genders (Please specify): _______________

What is your date of birth? _________________

What is your age (in years)? ________________

Is English a second language for you?
0 = No
1 = Yes

Were you born in the United States?
0 = No
1 = Yes

If NO:

How long have you been living here?___________________

Where were you born?___________________

What is your ethnic background?
1 = White
2 = Native American/American Indian
3 = Black/African-American
4 = Chinese or Chinese-American
5 = Japanese or Japanese-American
6 = Korean or Korean-American
7 = Other Asian or Asian-American
8 = Mexican, Mexican American, or Chicano
9 = Puerto Rican
10 = Other Hispanic/Latino
11 = East Indian
12 = Middle Eastern/Arab
13 = Other (Please specify): ___________________

How do you self-identify?
1 = Gay
2 = Lesbian
3 = Bisexual
4 = Queer
5 = Questioning
6 = Heterosexual/Straight
7 = Asexual
8 = Other (Please specify): ____________________

What is the highest grade or degree you have completed?
1 = Eighth grade or less
2 = Some high school
3 = GED
4 = High school graduate
5 = Business or technical training beyond high school
6 = Some college
7 = College graduate
8 = Some graduate or professional school beyond college
9 = Masters degree
10 = Doctoral degree

Are you a student?
0 = Not a student
1 = Part-time student
2 = Full-time student

What is your employment status?
1 = Unemployed
2 = Employed part-time (working 1-30 hours a week)
3 = Employed full-time (working more than 30 hours a week
4 = Home-maker
5 = Retired

What is your occupation?___________

What is your total household/family income?
1 = Less than $9,999
2 = $10,000-19,999
3 = $20,000-29,999
4= $30,000-39,999
5 = $40,000-49,999
6 = $50,000-59,999
7 = $60,000-69,999
8 = $70,000-79,999
9 = $80,000-89,999
10 = $90,000-99,999
11 = $100,000 or more

What phase of treatment are you currently in at CROSSWAEH?

______Phase 1______Phase 2______Phase 3

Appendix C

LEC-5

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it *happened to you* personally; (b) you *witnessed it* happen to someone else; (c) you *learned about it* happening to a close family member or close friend; (d) you were exposed to it as *part of your job* (for example, paramedic, police, military, or other first responder); (e) you're *not sure* if it fits; or (f) it *doesn't apply* to you.

Be sure to consider your *entire life* (growing up as well as adulthood) as you go through the list of events.

Event	***Happened to me***	***Witnessed it***	***Learned about it***	***Part of my job***	***Not Sure***	***Doesn't Apply***
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)						
2. Fire or explosion						
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)						
4. Serious accident at work, home, or during recreational activity						
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)						

6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)						
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)						
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)						
9. Other unwanted or uncomfortable sexual experience						
10. Combat or exposure to a war-zone (in the military or as a civilian)						
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)						
12. Life-threatening illness or injury						
13. Severe human suffering						
14. Sudden violent death (for example, homicide, suicide)						

15. Sudden accidental death						
16. Serious injury, harm, or death you caused to someone else						
17. Any other very stressful event or experience						

PLEASE COMPLETE PART 2 ON THE FOLLOWING PAGE

PART 2:

A. If you checked anything for #17 in PART 1, briefly identify the event you were thinking of:

____

B. If you have experienced more than one of the events in PART 1, think about the event you consider the *worst event*, which for this questionnaire means the event that currently bothers you the most. If you have experienced only one of the events in PART 1, use that one as the worst event. Please answer the following questions about the worst event *(check all options that apply)*:

1. Briefly describe the worst event *(for example, what happened, who was involved, etc.)*.

____

____

2. **How long ago did it happen?________________________*(please estimate if you are not sure)***

3. How did you experience it?

_____________*It happened to medirectly*

_____________*I witnessed it*

_____________*I learned about it happening to a close family member or close friend*

_____________*I was repeatedly exposed to details about it as part of my job (for example, paramedic, police, military, or other first responder)*

_____________*Other, please describe:*

4. Was someone's life in danger?

_____________*Yes, my life*

_____________*Yes, someone else's life*

_____________*No*

5. Was someone seriously injured or killed?

_____________*Yes, I was seriously injured*

_____________*Yes, someone else was seriously injured or killed*

_____________*No*

6. **Did it involve sexual violence?**_________*Yes* ____*No*

7. If the event involved the death of a close family member or close friend, was it due to some kind of accident or violence, or was it due to natural causes?

_____________*Accident or violence*

_____________*Natural causes*

_____________*Not applicable (The event did not involve the death of a close family member or close friend)*

8. How many times altogether have you experienced a similar event as stressful or nearly as stressful as the worst event?

_____________*Just once*

_____________*More than once (please specify or estimate the total # of times you have had this experience*
_____________*)*

PLEASE COMPLETE PART 3 ON THE FOLLOWING PAGE

Appendix D

PCL-5

Part 3: Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	***Not at all***	***A little bit***	***Moderately***	***Quite a bit***	***Extremely***
1. Repeated, disturbing, and unwanted memories of the stressful experience?	**0**	**1**	**2**	**3**	**4**
2. Repeated, disturbing dreams of the stressful experience?	**0**	**1**	**2**	**3**	**4**
3. Suddenly feeling or acting as if the stressful experience were actually happening again *(as if you were actually back there reliving it)*?	**0**	**1**	**2**	**3**	**4**
4. Feeling very upset when something reminded you of the stressful experience?	**0**	**1**	**2**	**3**	**4**
5. Having strong physical reactions when something reminded you of the stressful experience *(for example, heart pounding, trouble breathing, sweating)*?	**0**	**1**	**2**	**3**	**4**
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	**0**	**1**	**2**	**3**	**4**
7. Avoiding external reminders of the stressful experience *(for example, people, places, conversations, activities, objects, or situations)*?	**0**	**1**	**2**	**3**	**4**
8. Trouble remembering important parts of the stressful experience?	**0**	**1**	**2**	**3**	**4**

9. Having strong negative beliefs about yourself, other people, or the world *(for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)*?	**0**	**1**	**2**	**3**	**4**
10. Blaming yourself or someone else for the stressful experience or what happened after it?	**0**	**1**	**2**	**3**	**4**
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	**0**	**1**	**2**	**3**	**4**
12. Loss of interest in activities that you used to enjoy?	**0**	**1**	**2**	**3**	**4**
13. Feeling distant or cut off from other people?	**0**	**1**	**2**	**3**	**4**
14. Trouble experiencing positive feelings *(for example, being unable to feel happiness or have loving feelings for people close to you)*?	**0**	**1**	**2**	**3**	**4**
15. Irritable behavior, angry outbursts, or acting aggressively?	**0**	**1**	**2**	**3**	**4**
16. Taking too many risks or doing things that could cause you harm?	**0**	**1**	**2**	**3**	**4**
17. Being "superalert" or watchful or on guard?	**0**	**1**	**2**	**3**	**4**
18. Feeling jumpy or easily startled?	**0**	**1**	**2**	**3**	**4**
19. Having difficulty concentrating?	**0**	**1**	**2**	**3**	**4**
20. Trouble falling or staying asleep?	**0**	**1**	**2**	**3**	**4**

Appendix E

DERS

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item:

1	2	3	4	5
Almost never	sometimes	about half the time	most of the time	almost always
(0-10%)	(11-35%)	(36-65%)	(66-90%)	(91-100%)

__________ 1) I am clear about my feelings.

__________ 2) I pay attention to how I feel.

__________ 3) I experience my emotions as overwhelming and out of control.

__________ 4) I have no idea how I am feeling.

__________ 5) I have difficulty making sense out of my feelings.

__________ 6) I am attentive to my feelings.

__________ 7) I know exactly how I am feeling.

__________ 8) I care about what I am feeling.

__________ 9) I am confused about how I feel.

__________ 10) When I'm upset, I acknowledge my emotions.

__________ 11) When I'm upset, I become angry with myself for feeling that way.

__________ 12) When I'm upset, I become embarrassed for feeling that way.

__________ 13) When I'm upset, I have difficulty getting work done.

__________ 14) When I'm upset, I become out of control.

__________ 15) When I'm upset, I believe that I will remain that way for a long time.

__________ 16) When I'm upset, I believe that I'll end up feeling very depressed.

__________ 17) When I'm upset, I believe that my feelings are valid and important.

__________ 18) When I'm upset, I have difficulty focusing on other things.

__________ 19) When I'm upset, I feel out of control.

__________ 20) When I'm upset, I can still get things done.

__________ 21) When I'm upset, I feel ashamed with myself for feeling that way.

__________ 22) When I'm upset, I know that I can find a way to eventually feel better.

__________ 23) When I'm upset, I feel like I am weak.

__________ 24) When I'm upset, I feel like I can remain in control of my behaviors.

__________ 25) When I'm upset, I feel guilty for feeling that way.

__________ 26) When I'm upset, I have difficulty concentrating.

__________ 27) When I'm upset, I have difficulty controlling my behaviors.

__________ 28) When I'm upset, I believe that there is nothing I can do to make myself feel better.

__________ 29) When I'm upset, I become irritated with myself for feeling that way.

__________ 30) When I'm upset, I start to feel very bad about myself.

__________ 31) When I'm upset, I believe that wallowing in it is all I can do.

__________ 32) When I'm upset, I lose control over my behaviors.

__________ 33) When I'm upset, I have difficulty thinking about anything else.

__________ 34) When I'm upset, I take time to figure out what I'm really feeling.

__________ 35) When I'm upset, it takes me a long time to feel better.

__________ 36) When I'm upset, my emotions feel overwhelming.

Appendix F

IRQ

Please indicate the extent to which you agree with the following statements by writing the appropriate number from the scale below on the line beside each item:

For each item, answer as follows:
1 = Strongly disagree
2 = Disagree
3 = Somewhat disagree
4 = Neither agree nor disagree
5 = Somewhat agree
6 = Agree
7 = Strongly agree

______1. When I want to celebrate something good, I seek out certain people to tell them about it.

______2. I just have to get help from someone when things are going wrong.

______3. When something good happens, my first impulse is to tell someone about it.

______4. I find that even just being around other people can help me to feel better.

______5. Sometimes I just need someone to understand where I'm coming from.

______6. When something bad happens, my first impulse is to seek out the company of others.

______7. Being with other people tends to put a smile on my face.

______8. I manage my emotions by expressing them to others.

______9. It really helps me feel better during stressful situations when someone knows and cares about what I'm going through.

______10. When things are going well, I feel compelled to seek out other people.

______11. I'm happier when I'm with my friends than when I'm by myself.

______12. When things are going well, I just have to tell other people about it.

______13. I really enjoy being around the people I know.

______14. I appreciate having others' support through difficult times.

______15. When I'm having trouble, I can't wait to tell someone about it.

______16. I really appreciate having other people to help me figure out my problems.

Appendix G

DIRE

A series of scenarios are presented below. First please tell us how you would respond to each scenario. Then, please indicate on a scale from 1(very unlikely) to 5 (very likely) the likelihood that you would respond in each of the ways listed. Please provide an answer to each response.

1) You are feeling upset by a project you need to complete for school or work. The deadline is tomorrow and you're worried that there is no way that you will be able to get all the work finished.

A. In this situation, you would feel:

0..........50..........100
Not at all distressed **Extremely distressed**

B. In order to feel better, how likely is it that you would:

a. Raise your voice or complain to the person in charge

1..........**2**..........**3**..........**4**..........**5**
Very unlikely Very likely

b. Distract yourself from how you are feeling

1..........**2**..........**3**..........**4**..........**5**
Very unlikely Very likely

c. Complain to your coworkers or classmates about how it is unfair the situation is

1..........**2**..........**3**..........**4**..........**5**
Very unlikely Very likely

d. Simply notice your feelings

1..........**2**..........**3**..........**4**..........**5**
Very unlikely Very likely

e. Avoid feeling or showing your distress

1..........**2**..........**3**..........**4**..........**5**
Very unlikely Very likely

f. Keep contacting (texting, calling, etc.) friends and loved ones

1..........**2**..........**3**..........**4**..........**5**

Very unlikely Very likely

g. Keep asking for reassurance

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

h. Compare yourself to your coworkers or classmates

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

i. Think about the ways in which you are better than your coworkers or classmates

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

2) You and your significant other have been fighting a lot. You really care about the relationship want things to work out. You've just had another fight.

A. In this situation, you would feel:

0..**50**...**100**
Not at all distressed **Extremely distressed**

B. In order to feel better, how likely is it that you would:

a. Raise your voice or criticize your significant other to express how you feel

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

b. Distract yourself from how you are feeling

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

c. Complain to friends or acquaintances about your significant other

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

d. Simply notice your feelings

1..........................**2**..............................**3**..............................**4**............................**5**
Very unlikely Very likely

e. Avoid feeling or showing your distress

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

f. Keep contacting (texting, calling, etc.) friends and loved ones

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

g. Keep asking for reassurance

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

h. Compare your relationship to the relationships of your friends or family members.

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

i. Think about all the ways you are better than your significant other.

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

3) You feel like your friends have been avoiding you. Every time you call one of them, they are busy. You want to have a social life and be liked. One day you hear that a bunch of your friends went out to dinner without you.

A. In this situation, you would feel:

0..**50**..**100**
Not at all distressed **Extremely distressed**

B. In order to feel better, how likely is it that you would:
a. Raise your voice or criticize your friends to express how you feel

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

b. Distract yourself from how you are feeling

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

A. Complain to mutual acquaintances about your friends

1..............................**2**...................................**3**...................................**4**................................**5**
Very unlikely Very likely

d. Simply notice your feelings

1........................**2**............................**3**............................**4**...........................**5**
Very unlikely Very likely

e. Avoid feeling or showing your distress

1........................**2**............................**3**............................**4**...........................**5**
Very unlikely Very likely

f. Keep contacting (texting, calling, etc.) friends and loved ones

1........................**2**............................**3**............................**4**...........................**5**
Very unlikely Very likely

g. Keep asking for reassurance

1........................**2**............................**3**............................**4**...........................**5**
Very unlikely Very likely

h. Compare your social life to the social lives of your friends

1........................**2**............................**3**............................**4**...........................**5**
Very unlikely Very likely

i. Think about the ways you are better than your friends

1........................**2**............................**3**............................**4**...........................**5**
Very unlikely Very likely

Appendix H

ASI – Social/Family Relationships

1. What is your current relationship status?
______Single, never married
______Widowed
______Separated
______Divorced
______Married
______Long-term committed relationship but not legally married (more than 6 months)
______Committed relationship but not married (6 months or less)

2. If you are currently in a romantic relationship, how long have you been in this relationship?

_______years______months

3. If you are not currently in a romantic relationship:
3A. How long did your most recent romantic relationship last?
___________years____________months

3B. When did your most recent romantic relationship end?
__________years____________months

4. What is your usual living arrangement over the past 3 years?

______With romantic partner and children
______With romantic partner alone
______With children alone
______With parents
______With family
______With friends
______Alone
______Controlled environment
______No stable arrangement

5. How long have you been in this arrangement?__________years______months

6. Are you satisfied with this arrangement?__________Yes______No

7. Does your current or most recent romantic partner have an alcohol or drug problem?

________Yes _______No

8. Do you live with anyone who has an alcohol problem?__________Yes______No

9. Do you live with anyone who has a drug problem?__________Yes______No

10. With whom do you spend most of your free time?

______Family ____Friends____Romantic Partner____Alone

11. Are you satisfied with spending your free time this way?
_____Yes____No

12. How many close friends do you have? _____________

13. Would you say you have a close relationship with any of the following people?

Mother____________Yes_________No

Father_____________Yes_________No

Brothers/Sisters___________Yes_________No

Romantic Partner/Spouse_________Yes_________No

Children___________Yes_________No

Friends____________Yes_________No

14. Have you had significant periods in which you experienced serious problems getting along with:

Mother______Yes_________No

Father_______Yes_________No

Brothers/Sisters___________Yes_________No

Romantic Partner/Spouse_________Yes_________No

Children_____Yes_________No

Friends______Yes_________No

Other Significant Family__________Yes_________No

Neighbors__________Yes_________No

Coworkers_________Yes_________No

15. How many days in the past 30 have you had serious conflicts with:

Your family__________days
With other people (not romantic partners)_________days
With a romantic partner___________days

Appendix I

CSI

Answer the following questions based on your current romantic relationship, if you are currently in a romantic relationship. If you are not in a romantic relationship at this time, think of your most recent romantic relationship.

1. Please indicate the degree of happiness, all things considered, of your relationship.

Extremely Unhappy	Fairly Unhappy	A Little Unhappy	Happy	Very Happy	Extremely Happy	Perfect
0	1	2	3	4	5	6

Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

	Always Agree	Almost Always Agree	Occasionally Disagree	Frequently Disagree	Almost Always Disagree	Always Disagree
2. Amount of time spent together	5	4	3	2	1	0
3. Making major decisions	5	4	3	2	1	0
4. Demonstrations of affection	5	4	3	2	1	0

	All the time	Most of the time	More often than not	Occasionally	Rarely	Never
5. In general, how often do you think that things between you and your partner are going well?	5	4	3	2	1	0
6. How often do you wish you hadn't gotten into this relationship?	0	1	2	3	4	5

	Not at all true	A little true	Somewhat true	Mostly true	Almost completely true	Completely true
7. I still feel a strong connection with my partner	0	1	2	3	4	5
8. If I had my life to live over, I would marry (or live with/date) the same person	0	1	2	3	4	5
9. Our relationship is strong	0	1	2	3	4	5
10. I sometimes wonder if there is someone else out there for me	5	4	3	2	1	0
11. My relationship with my partner makes me happy	0	1	2	3	4	5
12. I have a warm and comfortable relationship with my partner	0	1	2	3	4	5
13. I can't imagine ending my relationship with my partner	0	1	2	3	4	5
14. I feel that I can confide in my partner about virtually anything	0	1	2	3	4	5
15. I have had second thoughts about this relationship recently	5	4	3	2	1	0

	Not at all true	A little true	Somewhat true	Mostly true	Almost completel y true	Completely true
16. For me, my partner is the perfect romantic partner	0	1	2	3	4	5
17. I really feel like part of a team with my partner	0	1	2	3	4	5
18. I cannot imagine another person making me as happy as my partner does	0	1	2	3	4	5

	Not at all	A little	Somewhat	Mostly	Almost completely	Completely
19. How rewarding is your relationship with your partner?	0	1	2	3	4	5
20. How well does your partner meet your needs?	0	1	2	3	4	5
21. To what extent has your relationship met your original expectations?	0	1	2	3	4	5
22. In general, how satisfied are you with your relationship?	0	1	2	3	4	5

	Worse than all others (extremely bad)					Better than all others (extremely good)
23. How good is your relationship compared to most?	0	1	2	3	4	5

For each of the following items, select the answer that best describes how you feel about this relationship. Base your responses on your first impressions and immediate feelings about the item.

26.	Interesting	5	4	3	2	1	0	Boring
27.	Bad	0	1	2	3	4	5	Good
28.	Full	5	4	3	2	1	0	Empty
29.	Lonely	0	1	2	3	4	5	Friendly
30.	Sturdy	5	4	3	2	1	0	Fragile
31.	Discouraging	0	1	2	3	4	5	Hopeful
32.	Enjoyable	5	4	3	2	1	0	Miserable

Appendix J

CPQ

Think about a typical conflict you have with your current romantic partner about substance use. Using the scale below, please indicate which response is most consistent with how you typically handle this type of conflict. If you are not currently in a romantic relationship, please think about your most recent romantic relationship when answering these questions. If you have never been in a romantic relationship, answer in terms of what you think your responses would most likely be.

Please rate each item on a scale of 1 (very unlikely) to 9 (very likely).

A. When a discussion about substance use in my relationship arises,

1. Both my partner and I avoid discussing the problem. 1 2 3 4 5 6 7 8 9

2. Both my partner and I try to discuss the problem. 1 2 3 4 5 6 7 8 9

3. I try to start a discussion while my partner tries to avoid a discussion. 1 2 3 4 5 6 7 8 9

4. My partner tries to start a discussion. 1 2 3 4 5 6 7 8 9

B. During a discussion about substance use,

5. Both my partner and I blame, accuse, and criticize one another. 1 2 3 4 5 6 7 8 9

6. Both my partner and I express our feelings to each other. 1 2 3 4 5 6 7 8 9

7. Both my partner and I threaten one another with negative consequences. 1 2 3 4 5 6 7 8 9

8. Both my partner and I suggest possible solutions and compromises. 1 2 3 4 5 6 7 8 9

9. I nag and demand while my partner withdraws, becomes silent, or refuses to discuss the matter further. 1 2 3 4 5 6 7 8 9

10. My partner nags and demands while I withdraw, become silent, or refuse to discuss the matter further. 1 2 3 4 5 6 7 8 9

11. I criticize while my partner defends himself or herself. 1 2 3 4 5 6 7 8 9

B. During a discussion about substance use,

12. My partner criticizes while I defend myself.	1 2 3 4 5 6 7 8 9
13. I pressure my partner to take some action or stop some action, while my partner resists.	1 2 3 4 5 6 7 8 9
14. My partner pressures me to take some action or stop some action, while I resist.	1 2 3 4 5 6 7 8 9
15. I express feelings while my partner offers reasons and solutions.	1 2 3 4 5 6 7 8 9
16. My partner expresses feelings while I offer reasons and solutions.	1 2 3 4 5 6 7 8 9
17. I threaten negative consequences and my partner gives in or backs down.	1 2 3 4 5 6 7 8 9
18. My partner threatens negative consequences and I give in or back down.	1 2 3 4 5 6 7 8 9
19. I call my partner names, swear at my partner, or attack my partner's character.	1 2 3 4 5 6 7 8 9
20. My partner calls me names, swears at me, or attacks my character.	1 2 3 4 5 6 7 8 9
21. I push, shove, slap, hit, or kick my partner.	1 2 3 4 5 6 7 8 9
22. My partner pushes, shoves, slaps, hits, or kicks me.	1 2 3 4 5 6 7 8 9

C. After a discussion about substance use,

23. Both my partner and I feel understood by each other.	1 2 3 4 5 6 7 8 9
24. Both my partner and I withdraw from each other.	1 2 3 4 5 6 7 8 9
25. Both my partner and I feel that the problem has been solved.	1 2 3 4 5 6 7 8 9
26. Neither I nor my partner is giving to the other.	1 2 3 4 5 6 7 8 9
27. Both my partner and I try to be especially nice to each other.	1 2 3 4 5 6 7 8 9
28. I feel guilty for what I said or did while my partner feels hurt.	1 2 3 4 5 6 7 8 9

C. After a discussion about substance use,

29. My partner feels guilty for what he or she said or did while I feel hurt.	1	2	3	4	5	6	7	8	9
30. I try to be especially nice, and act as if things are back to normal while my partner acts distant.	1	2	3	4	5	6	7	8	9
31. My partner tries to be especially nice, and act as if things are back to normal while I act distant.	1	2	3	4	5	6	7	8	9
32. I pressure my partner to apologize or promise to do better, while my partner resists.	1	2	3	4	5	6	7	8	9
33. My partner pressures me to apologize or promise to do better, while I resist.	1	2	3	4	5	6	7	8	9
34. I seek support from others (parent, friend, children, etc.).	1	2	3	4	5	6	7	8	9
35. My partner seeks support from others (parent, friend, children, etc.).	1	2	3	4	5	6	7	8	9

Appendix K

RPCS

Think about a typical conflict you have with your current romantic partner about substance use. Using the scale below, please indicate which response is most consistent with how you typically handle this type of conflict. If you are not currently in a romantic relationship, please think about your most recent romantic relationship when answering these questions. If you have never been in a romantic relationship, answer in terms of what you think your responses would most likely be.

For each item, answer as follows:
0 = Strongly disagree with statement
1 = Moderately disagree with statement
2 = Neutral, neither agree nor disagree
3 = Moderately agree with statement
4 = Strongly agree with statement

__________1. We try to find solutions that are acceptable to both of us.
__________2. We often resolve conflict by talking about the problem.
__________3. Our conflicts usually end when we reach a compromise.
__________4. When my partner and I disagree, we consider both sides of the argument.
__________5. In order to resolve conflicts, we try to reach a compromise.
__________6. Compromise is the best way to resolve conflict between my partner and me.
__________7. My partner and I negotiate to resolve our disagreements.
__________8. I try to meet my partner halfway to resolve a disagreement.
__________9. The best way to resolve conflict between me and my partner is to find a middle ground.
__________10. When we disagree, we try to find a solution that satisfies both of us.
__________11. When my partner and I have conflict, we collaborate so that we are both happy with our decision.
__________12. My partner and I collaborate to find a common ground to solve problems between us.
__________13. We collaborate to come up with the best solution for both of us when we have a problem.
__________14. We try to collaborate so that we can reach a joint solution to a conflict.
__________15. My partner and I try to avoid arguments.
__________16. I avoid disagreements with partner.
__________17. I avoid conflict with my partner.
__________18. When my partner and I disagree, we argue loudly.
__________19. Our conflicts usually last quite awhile.
__________20. My partner and I have frequent conflicts.
__________21. I suffer a lot from conflict with my partner.
__________22. I become verbally abusive to my partner when we have conflict.
__________23. My partner and I often argue because I do not trust him/her.
__________24. When we have conflict, we withdraw from each other for awhile for a "cooling off" period.

__________25. When we disagree, we try to separate for awhile so we can consider both sides of the argument.
__________26. When we experience conflict, we let each other cool off before discussing it further.
__________27. When we have conflict, we separate but expect to deal with it later.
__________28. Separation for a period of time can work well to let our conflicts cool down.
__________29. When we argue or fight, I try to win.
__________30. I try to take control when we argue.
__________31. I rarely let my partner win an argument.
__________32. When we disagree, my goal is to convince to my partner that I am right.
__________33. When we argue, I let my partner know I am in charge.
__________34. When we have conflict, I try to push my partner into choosing the solution that I think is best.
__________35. When we have conflict, I usually give in to my partner.
__________36. I give in to my partner's wishes to settle arguments on my partner's terms.
__________37. Sometimes I agree with my partner so the conflict will end.
__________38. When we argue, I usually try to satisfy my partner's needs rather than my own.
__________39. I surrender to my partner when we disagree on an issue.

Appendix L

BSCS

A. Identify the primary substance dependence for which you are being treated at this clinic.

________1. Downers or Sedatives (Barbiturates, etc.)
________2. Benzos (Valium, Xanax, etc.)
________3. Hallucinogens (including ecstasy)
________4. Alcohol
________5. Heroin or other Opiates (Morphine, etc.)
________6. Marijuana
________7. Stimulants (cocaine, amphetamine)
________8. Other (specify): ____________________

Please answer the following questions with regard to your cravings for the primary drug you note above in the context of a conflict with your current (or most recent) romantic partner regarding substance use. If you have never been in a romantic relationship, answer in terms of what you think your responses would most likely be.

2. The INTENSITY of my craving; that is, how much I desired this drug in the 24 hours following the conflict:
________0. None at all
________1. Slight
________2. Moderate
________3. Considerable
________4. Extreme

3. The FREQUENCY of my craving; that is, how often I desired this drug in the 24 hours following the conflict:
________0. Never
________1. Almost Never
________2. Several times
________3. Regularly
________4. Almost Constantly

4. The LENGTH of time I spent craving this drug during the 24 hours following the conflict:
________0. None at all
________1. Very short
________2. Short
________3. Somewhat long
________4. Very long

5. Write in the NUMBER of times you think you had craving for this drug during the 24 hours following the conflict.

____

Please answer the following questions with regard to your cravings for a <u>second craved drug</u> in the context of a conflict with your current (or most recent) romantic partner regarding substance use. If you have never been in a romantic relationship, answer in terms of what you think your responses would most likely be.

What was the second craved substance?
Choose only ONE from the following. If NONE, please do not answer Questions 5-8.
________0. None (STOP)
________1. Downers or Sedatives (Barbiturates, etc.)
________2. Benzos (Valium, Xanax, etc.)
________3. Hallucinogens (including ecstasy)
________4. Alcohol
________5. Heroin or other Opiates (Morphine, etc.)
________6. Marijuana
________7. Stimulants (cocaine, amphetamine)
________8. Other (specify): ____________________

6. The INTENSITY of my craving; that is, how much I desired this drug in the 24 hours following the conflict:
________0. None at all
________1. Slight
________2. Moderate
________3. Considerable
________4. Extreme

7. The FREQUENCY of my craving; that is, how often I desired this drug in the 24 hours following the conflict:
________0. Never
________1. Almost Never
________2. Several times
________3. Regularly
________4. Almost Constantly

8. The LENGTH of time I spent in craving this drug during the 24 hours following the conflict:
________0. None at all
________1. Very short
________2. Short
________3. Somewhat long

9. Write in the NUMBER of times you think you had craving for this drug during the 24 hours following the conflict.

____

Appendix M

DDQ

Please think about a typical conflict with your current (or most recent) romantic partner regarding substance use, and then rate your level of agreement with the following statements during or after this typical conflict. If you have never been in a romantic relationship, answer in terms of what you think your responses would most likely be.

0 = Strongly disagree with statement
1 = Moderately disagree with statement
2 = Neutral, neither agree nor disagree
3 = Moderately agree with statement
4 = Strongly agree with statement

__________(1) Using drugs would be satisfying now

__________(2) I would consider using drugs now

__________(3) If I started using drugs now I would be able to stop

__________(4) I would do almost anything to use drugs now

_________(5) I would feel less worried about my daily problems if I used drugs right now

_________(6) My desire to use drugs now seems overwhelming

__________(7) I could easily limit how much drugs I would use if I used now

__________(8) I would feel as if all the bad things in my life had disappeared if I used drugs now

__________(9) I want drugs so much I can almost taste it

__________(10) Using drugs now would make me feel less tense

__________(11) Even major problems in my life would not bother me if I used drugs now

__________(12) Using drugs would be pleasant now

__________(13) I am going to use drugs as soon as I possibly can

Appendix N

DUQ

Please circle the answer that is correct for you.

	Never	One Time	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
1. About how often did you use cannabis (i.e., marijuana) *in the past year*?	0	1	2	3	4	5
2. About how often did you use alcohol *in the past year*?	0	1	2	3	4	5
3. About how often did you use cocaine *in the past year*?	0	1	2	3	4	5
4. About how often did you use ecstasy *in the past year*?	0	1	2	3	4	5
5. About how often did you use stimulants *in the past year*?	0	1	2	3	4	5
6. About how often did you use sedatives *in the past year*?	0	1	2	3	4	5
7. About how often did you use heroin *in the past year*?	0	1	2	3	4	5
8. About how often did you use hallucinogens *in the past year*?	0	1	2	3	4	5

9. About how often did you use PCP *in the past year*?	0	1	2	3	4	5
10. About how often did you use inhalants *in the past year*?	0	1	2	3	4	5
11. About how often did you use nicotine *in the past year*?	0	1	2	3	4	5
12. About how often did you misuse prescription drugs *in the past year*? **Which drugs?**	0	1	2	3	4	5
13. About how often did you use crystal meth *in the past year*?	0	1	2	3	4	5