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Effects of Cognitive Distortions on the Link Between Dating Violence Exposure and Substance Problems in Clinically Hospitalized Youth

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Abstract

Purpose—The purpose of the present study was to examine whether cognitive distortions (e.g., cognitive errors; negative views of self, world, and future) influence the association between dating violence and problematic substance use behaviors in a sample of psychiatrically hospitalized adolescents.

Methods—Participants included 155 adolescents, ages 13 to 17, who had initiated dating. Adolescents completed measures of dating violence, substance related problems, (alcohol and marijuana), and cognitive distortions.

Results—Logistic regressions were conducted to examine the direct and interactive effects of dating violence exposure and cognitive distortions on likelihood of recent problematic substance use. Results suggested a main effect of dating violence on problematic alcohol and other drug use as well as an interactive effect of dating violence and cognitive distortions. Specifically, the relationship between dating violence and odds of substance related problems were higher among those with greater (vs. fewer) cognitive distortions.

Conclusions—Study results suggest the need for careful screening of cognitive distortions among adolescent dating violence victims, particularly those in mental health treatment.

Keywords

cognitive errors; substance abuse; dating violence

Dating violence is defined as a repeated pattern of coercive behavior among partners that involves the use of physical, psychological, or sexual aggression (Foshee & Matthew, 2007; Offenhauer & Buchalter, 2011; Shorey, Stuart, & Cornelius, 2011). Only recently has significant attention been paid to the grave interpersonal and societal implications of adolescent dating violence. Indeed, the Centers for Disease Control first included questions

about physical and sexual dating violence in the 2013 Youth Risk Behaviors Surveillance. Results indicated that, on average, 10.3% of teens reported physical dating violence and 10.4% reported sexual dating violence in the past year. Alarming, rates of dating violence are even higher in clinical samples of adolescents (Brooks-Russell, Foshee, & Reyes, 2015; Fernández-González, Wekerle, & Goldstein, 2012; Rizzo et al., 2011; Rizzo, Esposito-Smythers, Spirito, & Thompson, 2010).

Dating violence victimization is associated with numerous adverse psychological outcomes in adolescent community samples, including suicide attempts, posttraumatic stress, anxiety, depression, and substance use (Ackard, Eisenberg, & Neumark-Sztainer, 2007; Callahan, Tolman, & Saunders, 2003; Silverman, Raj, Mucci, & Hathaway, 2001). The association between dating violence victimization and adolescent substance use is particularly robust (Howard & Wang, 2003; Silverman et al., 2001; Testa, Livingston, & Leonard, 2003). Indeed, many community-based studies demonstrate higher rates of substance use among victims of dating violence. For example, in a nationally representative sample of over 5,000 adolescents, victims of dating violence reported higher rates of substance use (alcohol and marijuana) compared to non-victims (Exner-Cortens, Eckenrode, & Rothman, 2013). Importantly, the association between dating violence and substance use has been relatively understudied in clinical adolescent samples, though one study did find recent alcohol use to be related to dating violence victimization in the prior three months in a clinical sample of adolescents (Rizzo et al., 2011).

According to Kilpatrick et al. (1997), one primary theoretical reason for this association between dating violence victimization and substance use is that substances are used to cope with the stress of the trauma and associated psychological effects. This explanation is also known as the stress-coping theory of substance use (Wills & Filer, 1996). Indeed, numerous studies have documented the use of substances in an effort to cope with negative life experiences, such as dating violence victimization (Eames et al., 2014; Kuntsche, Knibbe, Gmel, & Engels, 2005; Wills, Sandy, & Yaeger, 2001). However, not all dating violence victims use substances. Therefore, it is very important to investigate factors that differentiate youth who do and do not develop substance abuse problems after being victimized in the context of a dating relationship.

One potential moderator of this relationship could be the presence of distorted cognitive processing, or the tendency to interpret stressors, such as victimization, in a manner that hurts rather than helps recovery (e.g., self-blame). While the role of cognitive distortion in dating violence perpetration has been rather well studied (e.g., acceptance of violence related cognitions), it has been relatively understudied in relation to dating violence victimization (Vagi et al., 2013). Two common types of cognitive distortions are the negative cognitive triad and cognitive errors (Beck, 1987; Najavits, Gotthardt, Weiss, & Epstein, 2004). The negative cognitive triad is defined as negative views of oneself, the world, and the future (Beck, 1987). Commonly examined cognitive errors include catastrophizing, overgeneralization, personalization, and selective abstraction (Abela, Brozina, & Haigh, 2002; Leitenberg, Yost, & Carroll-Wilson, 1986). These cognitive errors tend to develop during adolescence and stabilize into early adulthood (Gibb & Alloy, 2006; Romens, Abramson, & Alloy, 2008). Though mainly studied in relation to depression, evidence from

our prior work suggests that adolescent trauma victims (i.e., dating violence, sexual assault) also report distorted cognitive processes, including the negative cognitive triad and cognitive errors (Rizzo et al., 2010; Weismore & Esposito-Smythers, 2009). Consistent with the stress-coping model of substance use (Wills & Filer, 1996), adolescent dating violence victims who have a tendency to interpret stressors and life events in a negative manner (e.g., “this is all my fault”, “I will always be hurt by others”) could feasibly use alcohol or marijuana to dampen these thoughts and associated feelings.

Current Study

In summary, very limited research has been conducted with clinical samples to examine the relation between the experience of dating violence and substance related problems. Furthermore, scant research has explored factors that moderate this association, which is a noted limitation of past research (Shorey et al., 2011). We examined whether current cognitive distortions (i.e., negative cognitive triad and cognitive errors) moderate the association between lifetime dating violence and recent substance use problems in a clinical sample of psychiatrically-hospitalized adolescents. Additionally, we examined whether this relation remained significant after controlling for well-known covariates of dating violence, cognitive distortions, and substance related problems, including age, history of child maltreatment and diagnosis of a mood disorder (Hamby, Finkelhor, & Turner, 2012; Wolfe et al., 2001; Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004; Wolitzky-Taylor et al., 2008).

Consistent with a stress-and-coping framework, we hypothesized that the relationship between dating violence victimization and substance related problems would be stronger among youth with higher (versus lower) levels of cognitive distortions, including the negative cognitive triad and cognitive errors. We examined these hypotheses for both problematic alcohol and other drug use behaviors. We predicted that these relationships would be robust after including noted covariates, indicating the strength of the associations.

Method

Participants

Participants included 155 adolescents between the ages of 13 to 17 ($M = 15.8$, $SD = 1.26$), who were part of a larger parent study examining cognitive processes in youth at risk for suicidal thoughts and behaviors. Participants were recruited from the inpatient unit of a regional children's hospital over a three-year period. Two hundred sixty-three families were approached for participation. Of the 263, parental consent and assent were obtained for 201 adolescents (76% of initial sample). Adolescents were eligible for participation if they: a) were 13 to 17 years old; b) lived with their parents/legal guardians for the previous three months; and c) spoke English. Exclusion criteria were a developmental disability/IQ < 70 and active psychosis. Of the 201 who agreed to participate, a subsample of 155 participants (mean age = 15.0, $SD = 1.3$; 76% female), who had initiated dating by the time of the assessment, was retained for the present study. The median family income was between \$50,001 and 60,000, and 21% of families reported an annual income of \$20,000 or below. Self-reported race and ethnicity of the sample was 81% Caucasian/European American, 11%

Hispanic, 3% Asian American, 3% African American, and 2% mixed race/other. There were no significant age, gender, race, or ethnic differences between the 46 participants from the initial sample who had not yet initiated dating and the 155 participants from the present sample who had initiated dating.

Measures

Dating Violence—The *Conflict in Adolescent Dating Relationships Inventory* (CADRI; Wolfe et al., 2001) was used to assess dating violence victimization that occurred within a relationship over the last year. The CADRI is a self-report 35-item measure that assesses abuse perpetration and victimization using a 4-point Likert scale [0=never, 1=seldom (1-2 conflicts), 2=sometimes (3-5 conflicts), and 3=often (6 or more conflicts)]. For the purposes of this study, only victimization was assessed due to low endorsement of perpetration. This instrument assesses threatening behavior (“S/He threatened to hit me or throw something at me”), relational victimization (“S/He tried to turn my friends against me”), physical victimization (“S/He kicked, hit, or punched me”), sexual victimization (“S/He forced me to have sex when I didn't want to”), and verbal abuse (“S/He ridiculed or made fun of me in front of others”). For the current study, we used the total mean score with higher scores indicating higher dating violence victimization. The CADRI has strong internal consistency ($\alpha = .83$) and 2-week test-retest reliability ($r = .68, p < .01$; Wolfe et al., 2001), as well as acceptable partner agreement ($r = .64, p < .01$; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003).

Mood disorders and child maltreatment—The presence of a mood disorder (i.e., major depressive disorder, dysthymia, and depressive disorder NOS) and history of child maltreatment (i.e., physical or sexual abuse) were assessed using the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL; Kaufman et al., 1997). The K-SADS-PL is a reliable and valid semi-structured diagnostic interview. The sections for mood disorders and the trauma screening items in the Post-Traumatic Stress Disorder (PTSD) category were used in the present study. As a part of the PTSD screen, the participants were asked whether they had experienced sexual or physical abuse. Physical abuse was defined as acquiring bruises and other serious injuries on multiple occasions by a caregiver. Sexual abuse was defined as singular or repeated perpetration of any form of penetration, oral sex, or genital fondling, by a caretaker. The interviewers were trained and supervised by a doctoral-level clinical psychologist and all interviews were audiotaped and reviewed. Ten percent of the interviews were randomly selected and rated for reliability, which was adequate ($\kappa = .89$).

Cognitive Distortions—The *Children's Negative Cognitive Errors Questionnaire* (CNCEQ; Leitenberg et al., 1986) was used to measure cognitive distortions. The CNCEQ is a self-report measure that assesses for the presence of four types of cognitive distortions: overgeneralization, personalizing, catastrophizing, and selective abstraction. Adolescents are presented with 24 hypothetical situations (e.g., “Your softball team is having practice. The coach tells you he would like to talk to you after practice. You think “He's not happy with how I'm doing and doesn't want me on the team anymore”) and asked to rate the degree to which it matches their style of thinking using a five-point Likert scale from 1 (“almost

exactly like I would think”) to 5 (“not at all like I would think”). The total scores for the CNCEQ range from 24-120, and higher scores reveal a greater presence of the four types of cognitive errors. In the present study, internal consistency was high ($\alpha = .95$).

The *Cognitive Triad Inventory for Children* (CTI-C; Kaslow, Stark, Printz, Livingston, & Tsai, 1992) is a 36-item self-report measure that examines current perceptions of self-worth. This measure includes a total scale and three 12-item subscales. The subscales include: view of self (e.g., “*I am a failure*”), view of world (e.g., “*I think that things will be going very well for me a few years from now*”), and view of future (e.g., “*I can't do anything right*”). Participants responded by indicating “yes,” “maybe,” or “no.” Total scores range from 0 to 24, with lower scores indicating greater cognitive distortion. This measure has strong discriminant and concurrent validity, as well as strong reliability ($r = .92$) (Kaslow et al., 1992). Internal consistency in the current sample was excellent, $\alpha = .96$.

Substance-Related Problems—Problematic alcohol and other drug use (e.g., marijuana use) was measured using the *Substance Abuse Subtle Screening Inventory Adolescent Version 2* (SASSI A-2) (Miller & Lazowski, 2001). The SASSI A-2 is a self-report measure that includes 72 true/false items and 28 multiple choice items that assess problems, attitudes, contextual factors, and social and personal impairment associated with substance misuse. The measure includes 9 subscales (attitudes, defensiveness, subtle attributes, symptoms, supplemental addiction, obvious attributes, family-friends risk, face valid alcohol, and face valid other drug). The face valid alcohol and face valid other drug scales were used in the present study. For both the face valid alcohol and face valid other drug subscales, participants reported how often they experienced alcohol and drug related problems during the six months prior to hospitalization using a 4-point Likert scale (0=never, 1=once or twice, 2=several times, and 3=repeatedly). Due to lack of sufficient variance in these scales, scores were dichotomized to reflect the presence or absence of alcohol- or other drug-related problems. Examples of items from the face valid alcohol scale include “*How often have you...argued with your family or friends because of your drinking?*” and “*How often have you...taken drugs to help you feel better about a problem?*” The SASSI A-2 demonstrated strong psychometric properties in adolescent samples, including the face valid other drug and face valid alcohol subscales ($\alpha = .95$) (Miller & Lazowski, 2001). Internal consistency in the current sample was high for both scales, $\alpha = .95$.

Procedures

Parental consent and adolescent assent was obtained from all participants after adolescents had undergone a full psychiatric evaluation by the inpatient treatment team. Conditions under which confidentiality would be breached (e.g., childhood abuse, suicidality, homicidality) were included in the consent and assent forms and reviewed orally during the consenting process. Notably, the vast majority of disclosures that required a breach of confidentiality were made to the inpatient treatment team prior to study enrollment. Assessments were administered to adolescents and their parents separately during the adolescents' stay on the inpatient unit. The battery of assessments was given by a bachelor's level research assistant, except for the diagnostic interview, which was administered by

trained masters- and doctoral-level clinicians. These procedures were approved by both the university and hospital IRBs.

Data Analytic Strategy

All analyses used the SPSS statistical package (IBM SPSS Statistics for Macintosh, version 22.0; IBM Corporation, Armonk, NY). Preliminary bivariate analyses were conducted to examine distributional assumptions for logistic regression analyses. Multivariate analyses were restricted to individuals with valid responses on all study variables ($N = 154$). To test our main study hypotheses, we conducted a series of logistic regressions using the PROCESS macro for SPSS recommended by (Hayes, 2013). For each regression, the substance related problem variable was regressed onto age, child maltreatment, mood disorder diagnosis, dating violence victimization, cognitive distortion, and the interaction term of dating violence victimization and cognitive distortion. Following guidelines by Cohen and colleagues (J. Cohen, Cohen, West, & Aiken, 2003), predictors were mean centered prior to forming their interaction term. Significant interactions were probed using simple slope analyses and the Johnson-Newman Technique (Hayes & Matthes, 2009), which reveals the region of significance where the focal predictor transitions from statistically significant to non-significant along various levels of the moderator. Simple slopes of the odds of substance related problems were graphed to provide visual interpretation.

Results

Preliminary Bivariate Analyses

A history of child maltreatment was reported by 31% of individuals. Both alcohol and drug related problems were reported by approximately 54% of individuals in the study. Rates of reported dating violence victimization were high in the current sample, with 16% reporting a history of threatening behavior, 19% relational victimization, 77% verbal victimization, 16% physical victimization, and 21% sexual victimization. Every participant reported at least one occurrence of victimization. This notably high rate of victimization is consistent with other studies of clinical youth (e.g., Fernández-González et al., 2012). The means and standard deviations were all within the expected range for study variables, including dating violence victimization ($M = 0.69$, $SD = .33$, Range = .06-2.26), negative cognitive triad ($M = 47.49$, $SD = 17.24$, Range = 4-72), and cognitive errors ($M = 53.32$, $SD = 21.89$, Range = 24-114). Age was the only demographic variable significantly and positively correlated with alcohol related problems ($r = .23$, $p = .004$) and other drug related problems ($r = .16$, $p = .04$). The presence of a mood disorder (75% of individuals) was correlated with worse views of self, world, and future ($r = -.32$, $p = .000$) and greater cognitive errors ($r = .22$, $p = .007$). Dating violence victimization was negatively correlated with views of self, world and, future ($r = -.25$, $p = .001$) and positively correlated with cognitive errors ($r = .21$, $p = .01$) as well as both types of substance related problems (alcohol, $r = .22$, $p = .006$; other drugs, $r = .23$, $p = .004$). Additionally, both forms of cognitive distortions were significantly correlated with one another ($r = -.59$, $p = .000$). All correlations were in the anticipated direction.

Logistic Regression Models

Parameter estimates for all logistic regressions can be found in Table 1. The first logistic regression model examined the association between dating violence victimization, cognitive errors, and alcohol related problems. After controlling for age, mood disorders, and history of child maltreatment, dating violence victimization was significantly associated with alcohol related problems. Cognitive errors were not associated with alcohol related problems. However, there was a significant interaction between dating violence victimization and cognitive errors. The J-N tests confirmed that the association of dating violence victimization with alcohol related problems emerged only at high levels of cognitive errors, as illustrated in Figure 1.

The second logistic regression model examined the associations among dating violence victimization, the cognitive triad, and alcohol related problems. After controlling for age, mood disorders, and history of child maltreatment, dating violence victimization was significantly associated with alcohol related problems. Views of self, word, and future were not associated with alcohol related problems. There was a significant interaction between the dating violence victimization and the cognitive triad. The J-N tests demonstrated that the association of dating violence victimization with alcohol related problems emerged only at lower levels (worse view) of self, world, and future, as illustrated in Figure 2.

The third logistic regression model examined the association between dating violence victimization, negative cognitive errors, and other drug related problems. After controlling for age, mood disorders, and history of child maltreatment, there was a significant main effect for dating violence victimization. Higher reported dating violence victimization was associated with higher odds of other drug related problems. There was no main effect for negative cognitive errors on other drug related problems. As with alcohol related problems, there was an interaction between dating violence victimization and negative cognitive errors. The J-N tests demonstrated that the association of dating violence victimization with other drug related problems emerged only at high levels of cognitive errors, as illustrated in Figure 3.

The final logistic regression model examined the associations among dating violence victimization, the negative cognitive triad, and other drug use. After controlling for age, mood disorders, and history of child maltreatment, there was a main effect for dating violence victimization. There was no main effect for the cognitive triad on other drug related problems. The interaction between dating violence victimization and the negative cognitive triad was significant. The J-N tests demonstrated that the association of dating violence victimization with other drug related problems emerged only at lower levels (worse view) of self, world, and future, as illustrated in Figure 4.

Discussion

The present study examined the association between dating violence victimization and alcohol and other drug related problems, as well as whether the negative cognitive triad and negative cognitive errors moderate these relationships in a clinical sample of adolescents. Consistent with prior research (Exner-Cortens et al., 2013; Reingle, Staras, Jennings,

Branchini, & Maldonado-Molina, 2011; Silverman JG et al., 2001), dating violence victimization was found to be associated with both recent alcohol and other drug related problems. Further, consistent with study hypotheses, our findings suggest that adolescent victims of dating violence may be at greater risk for problematic alcohol and other drug use when they experience significant cognitive distortions. These findings offer support for the stress-coping theory of substance abuse (Wills & Filer, 1996), which suggests that these youth may use to substances to cope with negative thought processes, as well as their dating violence victimization. Notably, these results were robust to potential confounds, including mood disorder diagnosis and a history of childhood abuse.

The effects of trauma, and dating violence victimization in particular, are far-reaching and long lasting. Indeed, previous research has demonstrated that trauma affects adolescents' sense of personal safety, self-esteem, and cognitive processes throughout development (Cohen, Mannarino, Kliethermes, & Murray, 2012; Gibb & Abela, 2007; Soler, Paretila, Kirchner, & Forns, 2012). The experience of adversity during development contributes to problematic cognitive processes as youth attempt to cope with such devastating experiences (Gibb, 2002; Gibb & Abela, 2007; Gibb & Alloy, 2006). In the present study, we investigated two specific cognitive processes as a potential explanation for why some adolescent victims of dating violence engage in problematic substance use. The first was the tendency to view one's self, the world, and the future in a negative manner, also referred to as the cognitive triad (Beck, 1987). The second was the tendency to overgeneralize, personalize, catastrophize, and selectively abstract negative information from stressful events. These cognitive distortions have been most commonly examined in relation to the development of adolescent depression (Leitenberg et al., 1986); however, they may have significant importance for understanding reactions to trauma. Indeed, adolescents who have the tendency to negatively interpret or over attribute their role in negative experiences (e.g., "this is all my fault; it will always be this way"), such as dating violence victimization, may experience particularly heightened emotional pain. Together, it seems plausible that an adolescent may turn to alcohol or drugs to dampen these negative thoughts and associated emotions. Although these cognitive distortions are not trauma-specific, the present study suggests that a more general negative cognitive style, may play an important role in the development of problematic alcohol and drug use among victims of dating violence.

The findings of the present study offer important clinical implications. As suggested above, dating violence victimization occurs at particularly high rates in clinical populations and therefore should be assessed when adolescents enter treatment. Study results also suggest that clinicians who work with adolescent dating violence victims should assess for the presence of cognitive distortions as well as alcohol and drug use. Those adolescents with the high levels of cognitive distortions may be at particularly high risk for developing alcohol and drug problems. When present, interventions that include cognitive restructuring techniques and other skills that promote adaptive coping methods in the face of stress (e.g., problem-solving, affect regulation) may be most helpful. Such an intervention may be informed by trauma-focused cognitive behavioral therapy techniques (Cohen, Deblinger, Mannarino, & Steer, 2004).

While the results of the present study build incrementally upon existing literature and offer important clinical implications, several limitations should be noted. First, this study was cross-sectional; therefore, temporal relationships among study variables cannot be assumed. Given past research suggesting that substance use is associated with experiencing dating violence (Howard & Wang, 2003), it is possible that the directions of effects may be different in longitudinal studies. This represents an important direction for future research. Second, the sample was predominantly white females and included only individuals who were psychiatrically hospitalized. Therefore, study results may not generalize to adolescents from other backgrounds. Third, we only examined alcohol and drug related problems in the present study. It would be important to include quantity and frequency measures of alcohol and other drug use in future research for a more comprehensive examination of study questions. Fourth, we did not assess sexual orientation in the current sample, which may represent an important variable to include in future studies of dating violence victimization given recent literature suggesting a higher incidence of victimization in sexual minority relationships (Dank, Lachman, Zweig, & Yahner, 2014). Further, future research should explore other potential explanatory variables in the relationship between dating violence victimization and substance problems, such as PTSD. Finally, our study included general versus trauma-specific cognitive distortions. It would be of interest for future research to examine whether distortions directly tied to the dating violence victimization also moderate or potentially mediate the association between dating violence victimization and substance use.

Despite these limitations, the present study extends previous research by examining the effect of two important cognitive processes on alcohol and drug related outcomes among victims of adolescent dating violence. Findings also offer evidence to suggest that it is equally important to examine cognitive processes among victims of dating violence as it is among perpetrators of violence, the latter of which has been relatively well studied (Vagi et al., 2013). Results point to the need for clinical interventions that target both cognitions as well as adaptive coping behavior for these trauma-exposed adolescents.

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Figure 1. Interaction between negative cognitive triad and dating violence

Note. Negative Score represent *worse* views of self, world, and future. Region of significance begins at -9.6169.

Figure 2. interaction between cognitive errors and dating violence
Note. Region of significance begins at -2.3766.

Figure 3. Interaction between negative cognitive triad and dating violence

Note. Negative Scores represent *worse* views of self, world, and future. Region of significance begins at -2.8169.

Figure 4. Interact between cognitive errors and dating violence

Note. Region of significance at -2.3766.

Table 1

Logistic regression analyses

	B	SE	OR	LLCI	ULCI
Alcohol Problems					
Age	.43*	.15	1.55	1.15	2.03
Mood	-.31	.43	0.73	0.32	1.70
Maltreatment	.20	.39	1.22	0.57	2.60
Cognitive Triad	-.01	.01	0.99	0.97	1.01
Dating Violence	1.53*	.68	4.62	1.22	17.39
Cognitive Triad × Dating Violence	-.10*	.05	0.90	0.82	0.99
Alcohol Problems					
Age	.43	.14	1.54	1.16	2.05
Mood	-.20	.42	0.82	0.36	1.87
Maltreatment	.16	.38	1.17	0.55	2.50
Cognitive Errors	-.00	.01		0.98	1.01
Dating Violence	1.46*	.66	4.31	1.18	15.53
Cognitive Errors × Dating Violence	.07*	.03	1.07	1.01	1.15
Other Drug Problems					
Age	.32*	.14	1.38	1.04	1.83
Mood	-.67	.43	0.51	0.22	1.21
Maltreatment	.38	.39	1.46	0.68	3.16
Cognitive Triad	-.01	.01	0.99	0.97	1.01
Dating Violence	1.83*	.71	6.23	1.55	24.93
Cognitive Triad × Dating Violence	-.12*	.05	0.89	0.80	0.98
Other Drug Problems					
Age	.33*	.14	1.39	1.05	1.84
Mood	-.58	.42	0.56	0.24	1.28
Maltreatment	.33	.39	1.39	0.66	2.99
Cognitive Errors	-.00	.01		0.98	1.012
Dating Violence	1.72*	.67	5.58	1.49	20.81
Cognitive Errors × Dating Violence	.07*	.03	1.07	1.00	1.15

Note. LLCI = lower limit 95% confidence interval. ULCI = upper limit 95% confidence interval