

## RISK PERCEPTIONS OF DATING VIOLENCE AMONG COLLEGE WOMEN: THE ROLE OF EXPERIENCE AND DEPRESSIVE SYMPTOMS

MARIE HELWEG-LARSEN, HILARY G. HARDING,  
AND KIMBERLY E. KLEINMAN  
*Dickinson College*

A great deal of research on risk perceptions has examined predictors of personal and comparative risk judgments, but little work has examined predictors such as personal experience and depression with respect to dating violence (DV) risk perceptions. Results from a survey of college women ( $N = 192$ ) indicated that women showed optimistic comparative risk judgments in that they thought their personal risk was lower than other women's risk of experiencing future DV. Depressive symptoms and greater experience with DV, sexual abuse, and violence socialization were associated with elevated personal risk ratings. The relationship between previous DV experience and personal risk ratings was partially mediated by depressive symptoms. Results are discussed as they relate to the existing literature on risk perceptions.

People often contemplate their risks for negative events and most major theories of health behavior change include an element of risk acknowledgement as a precursor to behavioral change. For example, the Health Belief Model (Becker, 1974), the Protection Motivation Theory (Rogers, 1983), and the Precautionary Adoption Model (Weinstein, 2000) propose that before people take action to attenuate a health risk, they must first recognize the risks associated with their behavior. Similarly, the behavior motivation hypothesis states that a high perception of risk for a negative event will lead to adoption of or change in behavior in order to reduce the risk (Brewer, Weinstein,

Cuite, & Herrington, 2004). This hypothesis has been empirically supported in the domain of health behaviors such as vaccination (Brewer et al., 2004), hypertension medication adherence (Helweg-Larsen, DiDominick, Kimmel, & Volpp, 2005), and risk perceptions among women in a domestic violence shelter (Harding & Helweg-Larsen, 2007).

There are numerous methods of assessing perceived risk including measures of dispositional optimism, personal risk assessment relative to actual objective risk, personal risk assessment relative to comparison with similar peers, and simple assessment of personal risk (e.g., Radcliffe & Klein, 2002). Extensive research, for example in the area of smoking, shows that although people are somewhat realistic about their relative risk (e.g., smokers recognize that smokers have greater lung cancer risk than non-smokers) people tend to underestimate their personal risk relative to what it realistically ought to be (e.g., smokers think their smoking is associated with a little health risk but it is really associated with much greater health risk; Weinstein, Markus & Moser, 2005). In addition, people underestimate their personal risk relative to the risk of other people in their situation (e.g., smokers think they personally have a lower lung cancer risk than other smokers; Helweg-Larsen & Nielsen, 2008). Because it is often difficult or impossible to obtain accurate estimates of an individual person's actual risk, a great deal of research has focused on comparative risk. This research shows that across a wide range of domains of negative life events (including heart attacks, car accidents, divorce, earthquake injuries, etc.), people believe that they are less at risk for experiencing a negative event than a similar other person (for a review see Helweg-Larsen & Shepperd, 2001). Comparative optimism is also prevalent in high risk samples. For example, women in a domestic violence shelter showed comparative optimism—women thought that they were personally less at risk for future violence from an intimate partner (Harding & Helweg-Larsen, 2007) and less likely to return to their abusers than other women in their situation (Martin, Berenson, Griffing, Sage, Madry, Bingham, & Primm, 2000). With respect to comparative risk, relatively more research has focused on precursors as opposed to behavioral consequences whereas with respect to personal risk a great deal of research has focused on the behavioral consequences (e.g., Helweg-Larsen & Shepperd, 2001; Brewer, Weinstein, Cuite, & Herrington, 2004). In the present

Correspondence concerning this article should be addressed to Marie Helweg-Larsen, Department of Psychology, Dickinson College, Carlisle, PA 17013. E-mail: helwegm@dickinson.edu.

research we examined how personal experience and depressive symptoms predict assessments of personal risk as well as comparative risk.

#### NEGATIVE AFFECT AND PERSONAL EXPERIENCE

Research on risk perception shows people perceive their own risk as greater when they are in a state of negative affect. In a review of the literature, Helweg-Larsen and Shepperd (2001) concluded that depression, dysphoria, negative mood, and anxiety all were associated with increased perceptions of personal risk as well as less comparative optimism. Depression lowers personal risk perceptions because the self-focused attention associated with depression primes negative schemas that affect perceptions and judgments (Pyszczynski, Holt, & Greenberg, 1987). In one study when depressed participants were assigned to be externally focused (as opposed to internally focused) their negative schemas were less accessible and they displayed the same amount of comparative optimism as non-depressed participants (Pyszczynski et al., 1987).

Personal experience with an event is also generally associated with increased perception of personal risk and decreased comparative optimism (Helweg-Larsen & Shepperd, 2001). Typically the more direct, event-specific, and severe the experience is, the greater the reduction in comparative optimism (Absetz, Aro, Rehnberg, & Sutton, 2000; Helweg-Larsen, 1999; McKenna & Albery, 2001; Weinstein, 1989). For example, having a close relative with breast cancer attenuated comparative optimism more than having an acquaintance with breast cancer (Absetz et al., 2000). In a study with people who had various levels of experience with car accidents, more severe experience was associated with less comparative optimism and these experiences were not related to changes in comparative optimism for other health-related risks (McKenna & Albery, 2001). Several processes likely explain the relationship between prior experience and risk perceptions. Prior experience might reduce perceptions of personal control, create more accessible victim memories, change estimations of the base rate likelihood of victimization, or in the case of severe experiences increase anxiety and depression (Helweg-Larsen & Shepperd, 2001). In sum, prior experience and negative affect are

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associated with reduced comparative optimistic bias and increased personal risk perception.

#### DATING VIOLENCE

Dating violence among adolescents and young adults is surprisingly common; one study found that 66% of a sample of 1,545 first-year college students experienced at least one incident of physical or sexual victimization by a dating partner during high school (Smith, White, & Holland, 2003). Although some research investigating intimate partner violence (IPV) in dating relationships suggests that males and females in college and community samples experience similar rates of victimization (e.g., Hamed, 2001; Johnson, 1995), simply counting the incidence of violent episodes does not capture the physical and psychology outcomes of victimization which are greater for women than men (Saunders, 2002). Women also report greater levels of fear of violence (Cercone, Beach, & Arias, 2005) and greater emotional impact from more severe forms of violence (Weisz, Tolman, Callahan, Saunders, & Black, 2007). Additionally, female victimization results in injury, utilization of medical services, and losses in productivity at disproportionately greater rates when compared to male victimization (Arias & Corso, 2005). Thus, the differential consequences of IPV suggest that victimization among women is a problem that remains deserving of unique attention.

Understanding women's perceptions of risk for future violence is also important because perception of risk for future violence is an accurate predictor of future violence. One study found that women's predictions of future violence from their batterers were strongly related to subsequent violence in a four-month follow-up period even when controlling for 20 other risk factors (Weisz, Tolman, & Saunders, 2000). In an extension and replication, Heckert and Gondolf (2004) conducted a 15-month longitudinal study of 499 female partners of men in a batterer treatment program. They found that integrating the women's risk perceptions into a model predicting future violence victimization increased the predictive accuracy of the model. Similarly, among women residing in a domestic violence shelter, perception of elevated risk was associated with intention to adopt protective behaviors—in this case, intending to not return to their batterer (Harding & Helweg-Larsen, 2007). Thus,

personal risk estimation for future IPV has important associations with both predictions of future violence and behavioral intentions.

Negative affect and prior experience are associated with risk perceptions (as previously discussed) and these elements are also predictors of dating violence victimization in girls and women. With respect to experience, predictors of dating violence victimization include a history of childhood maltreatment and trauma (Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004), witnessing domestic violence in the home as a child (Whitfield, Anda, Dube, & Felitti, 2003), and previous abuse in relationships (Smith et al., 2003). One study that surveyed college women during each year of college found that prior experience with dating violence victimization predicted subsequent dating violence during all four years of college (Smith et al., 2003). Furthermore, victimization during high school was a better predictor of college victimization than was childhood victimization. These findings indicate that abuse history is an important risk marker for future victimization.

In addition to prior experience with violence, negative affect is associated with risk of future victimization. In a nationally representative sample of 9th–12th grade girls, those who had experienced dating violence at some point in high school were more likely to exhibit signs of depression, including feeling sad or hopeless and considering or attempting suicide (Howard & Wang, 2003). Similarly, in a stratified random sample of U.S. adolescent girls, depression significantly predicted dating violence a year later suggesting that depressed girls may be more likely to enter into and remain in abusive relationships (Cleveland, Herrera, & Stuewig, 2003). In sum, depression both predicts and results from dating violence victimization.

Although limited research has examined risk perceptions and comparative optimism with respect to intimate partner violence, one study examined comparative optimism with respect to sexual victimization. Previous experience, depression, perceived similarity, and control were examined as predictors of personal risk and comparative optimism in a longitudinal study of 276 college women (Brown, Messman-Moore, Miller, & Stasser, 2005). Results showed that women in general did exhibit a comparative optimistic bias for experiencing sexual victimization in the future and that perceived similarity with the typical sexual assault victim mediated the relationship between personal experience and personal risk perception.

Particularly relevant to the current study, Brown et al. (2005) also found that women with previous experience of sexual victimization showed greater perceived risk for their own future sexual victimization, but experience was not associated with comparative optimism. In addition, psychological distress (anxious arousal, depression, and anger/irritability) was related to increased personal risk perceptions. Thus, personal risk perceptions were consistently related to both depression and experience whereas comparative optimism was not.

### HYPOTHESES

The present study of college women and their dating violence experiences examined depressive symptoms and experience with violence as predictors of personal risk perception and comparative optimism. Although depression and experience have generally been related to both an increase in personal risk perceptions and a reduction in comparative optimism, one study examining these variables with respect to violence against women (sexual assault) found only personal risk perceptions (and not comparative optimism) to be related to experience and depression (Brown et al., 2005). We tentatively predicted that experience and depression would affect both personal risk and comparative optimism. We predicted that (1) women would display comparative optimism for experiencing dating violence in the future, (2) more depressive symptoms would be associated with greater personal risk perception and less comparative optimism, (3) previous dating violence experience would be associated with greater personal risk perception and less comparative optimism, and (4) depression would mediate the relationship between experience and risk perceptions.

### METHOD

#### PARTICIPANTS

The participants were 192 female undergraduate students recruited from classes at a small liberal arts college in central Pennsylvania. Of the participants, 28% were freshmen, 27% were sophomores, 15% were juniors, and 30% were seniors. One participant did not indicate her class. The participants ranged in age from 18 to over 40 years old;

15% were 18, 29% were 19, 23% were 20, 25% were 21, 10% were 21–22 years of age, and 1% were 40 years or older. Considering all their past dating relationships 78% of the women had experienced psychological aggression (none of the 130 women experienced a severe form of psychological aggression), 26% experienced sexual coercion (2 out of 44 of the women experienced severe sexual coercion), 20% experienced an assault by their partner (1 out of the 34 women experienced a severe assault), and 7% had an injury (1 out of the 12 women had a severe injury).

### PROCEDURE

A 22-page survey assessing the characteristics of dating relationships was completed during class time. The study was approved by the IRB and all participants gave informed consent. Participants were informed that the study was completely voluntary, that their answers would be anonymous, and were then given instructions on how to complete the survey.

### MATERIALS

*Overview.* The present survey included a combination of The Personal and Relationship Profile (PRP), the Revised Conflicts Tactics Scales (CTS2), and comparative optimism questions. The PRP and the CTS2 questions were randomly intermixed. The comparative optimism questions appeared at the very end. Participants were instructed to answer the questions in regard to their present partner. If they were not currently in a romantic relationship, they were instructed to respond in regard to their most recent partner. Participants were asked to report only on dating relationships that lasted at least one month.

*Risk Perceptions.* The participants reported their own perceived likelihood of experiencing dating violence in the next ten years ("How likely is it that you in the next 10 years will be pushed, grabbed, slapped, or hit by someone you are dating?") and the perceived likelihood of a typical college student experiencing dating violence in the next ten years ("How likely is it that a typical college student of your gender in the next 10 years will be pushed, grabbed, slapped, or hit by someone they are dating?"). The scale for both

questions ranged from 1 (*very unlikely*) to 5 (*very likely*). Comparative optimism was calculated by subtracting personal risk from other risk. Thus, a positive number indicated relative optimism whereas a negative number indicated relative pessimism.

*The Personal and Relationship Profile (PRP).* The PRP is commonly used for clinical screening and research on family violence or to predict risk factors for violence (Straus, Hamby, Boney-McCoy, & Sugarman, 1999). Participants rated their agreement with each statement on a 4-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). In this study three PRP scales were used: depressive symptoms, sexual abuse history, and violence socialization.

1. *Depressive Symptoms Scale.* Depressive symptoms were assessed on the PRP by asking the participants to describe their disturbances in mood, dysphoric cognitions, and somatic disturbances (e.g., "I feel sad quite often" and "I enjoy my day-to-day life"). Five of the eight items were reverse coded before they were combined into a single measure with a mean of 1.74 ( $SD = 0.52$ ) and a Cronbach's  $\alpha$  of .82.

2. *Sexual Abuse History.* The PRP also measured the participants' sexual abuse history. Participants' sexual abuse history included abuse by adults (family and non-family) as well as abuse by other children (family and non-family) occurring before age 18. The sexual abuse scale included eight questions with a mean of 1.23 ( $SD = 0.40$ ) and a Cronbach's  $\alpha$  of .81. This variable was highly skewed because most participants had either none or very little experience and a few participants had a great deal of experience. Thus, the measure was rescored so that the tail end of the distribution (scores of 12 or higher,  $N = 28$ ) all received a score of 12.

3. *Violence Socialization.* The final scale from the PRP measured the participants' violence socialization. This scale measured the participants' experiences with violence, witnessing violence, and the amount of pro-violence advice that the participant received during childhood from family and non-family members. Eight questions were included in the violence socialization scale (e.g., "I was hit a lot by one of my parents" and "I saw a family member kick/punch or beat his/her partner") with a mean of 1.54 ( $SD = 0.44$ ) and a Cronbach's  $\alpha$  of .74.

*The Revised Conflicts Tactics Scales (CTS2).* The CTS2 measures the degree to which individuals in romantic relationships physically or

psychologically attack each other (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). These questions were designed to assess the behaviors of the participant and her partner with respect to assault, injury, psychological aggression, and sexual coercion as experienced by the woman. These four scales include both "minor" and "severe" subscales, as specified by the authors of the CTS2, and a combined total for that scale. For purposes of consistency with the wording of the CTS2 the "minor" and "severe" terminology is retained with the recognition that less severe forms of abuse are often not "minor" but can have serious and painful consequences. Participants were asked how many times they had been the recipient of, or experienced a behavior from their partner. The participants responded on an eight-point scale referring to the number of times the behavior or action occurred (*once in the past year, twice in the past year, 3-5 times in the past year, 6-10 times in the past year, 11-20 times in the past year, more than 20 times in the past year, not in the past year but it did happen before, and this has never happened*). Participants were instructed to skip this section if they had not been in a dating relationship that lasted longer than one month.

1. *Assault by Partner*. This subscale of the CTS2 measured the number of times that the participant was the victim of physical abuse in the past year. This scale included five items assessing minor assault (e.g., "partner slapped me" and "partner pushed or shoved me") and seven items assessing severe assault (e.g., "partner burned or scalded me on purpose" and "partner used a knife or gun on me"). The 12 items had a Cronbach's  $\alpha$  of .81.

2. *Injury by Partner*. The CTS2 also measured the number of instances in which the participant was a recipient of an injury. This scale included two items assessing minor injury ("had sprain, bruise, or small cut after fight with partner" and "felt physical pain that still hurt the next day after a fight with partner") and four items assessing severe injury (e.g., "I went to a doctor because of a fight with my partner"). The six items had a Cronbach's  $\alpha$  of .79.

3. *Psychological Aggression by Partner*. This subscale of the CTS2 measured whether the participant was the recipient of psychological aggression. Four items assessed minor psychological aggression (e.g., "partner insulted me or swore at me" and "partner shouted or yelled at me") and four items assessed severe psychological aggression

sion (e.g., "partner destroyed something of mine" and "partner called me fat or ugly"). The eight items had a Cronbach's  $\alpha$  of .71.

4. *Sexual Coercion*. The final subscale of the CTS2 measured the behavior that was intended to compel the partner to engage in unwanted sexual activity. Three items assessed minor types of sexual coercion (e.g., "partner insisted on sex when I didn't want to") and four items assessed severe sexual coercion (e.g., "partner used force to have anal/oral sex when I didn't want to"). The seven items had a Cronbach's  $\alpha$  of .65.

## RESULTS

### HYPOTHESIS 1: WOMEN SHOW COMPARATIVE OPTIMISM

The first hypothesis examined comparative optimism in the entire sample of women. Consistent with the hypothesis and previous research, women in this sample exhibited a comparative optimism for being a victim of dating violence in the future. Women consistently rated their personal risk for dating violence victimization as lower ( $M = 1.5$ ,  $SD = 0.9$ ) than the risk of other women ( $M = 3.4$ ,  $SD = 1.1$ ), indicating clear comparative optimism,  $F(1, 190) = 430.89$ ,  $p < .001$ ,  $\eta^2 = .69$ . Said differently, only 2% of the sample rated their personal risk as greater than others, 12% thought their risk was the same, and 86% thought their risk was smaller than others. Thus, the first hypothesis was supported in that women did indeed exhibit comparative optimism for future dating violence.

### HYPOTHESIS 2: DEPRESSIVE SYMPTOMS ARE ASSOCIATED WITH RISK PERCEPTIONS

The second hypothesis stated that depressive symptoms are associated with greater personal risk perception and less comparative optimism. As shown in Table 1, depressive symptoms were found to be correlated with increased personal risk ratings,  $r(189) = .30$ ,  $p < .001$ , and increased other risk ratings,  $r(189) = .19$ ,  $p = .01$ , but not comparative optimism,  $r(189) = -.04$ ,  $p = .58$ . That is, depression was significantly associated with risk perceptions in that women who were depressed rated as higher *both* their personal risk and others' risk. However, depression was not correlated with comparative optimism.

TABLE 1. Correlations between Risk Perceptions, Depressive Symptoms and Four Types of Experience

	1	2	3	4	5	6	7	8
1. Personal Risk	—	.16*	-.54**	.30**	.23**	-.21**	.15*	.29*
2. Other Risk		—	.75**	.19*	.08	.05	.06	.12
3. Comparative Risk			—	-.04	-.08	-.10	-.05	-.10
4. Depressive Symptoms				—	.18*	.25**	.34**	.41**
5. Minor Assault					—	.67**	.24**	.27**
6. Dating Violence Experience						—	.24**	.23**
7. Sexual Abuse							—	.44**
8. Violence Socialization								—

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

### HYPOTHESIS 3: EXPERIENCE WITH VIOLENCE IS ASSOCIATED WITH RISK PERCEPTIONS

The third hypothesis stated that prior experience with violence was associated with greater personal risk perception and less comparative optimism. We operationalized prior experience with violence four different ways moving from experience that is *most* to *least* directly related to the assessed risk (i.e., the risk of being pushed, grabbed, slapped, or hit by a dating partner in the next 10 years). First, we examined prior experience with minor assault which is the type of experience that most closely corresponds to the assessed risk. Second, we examined general dating violence aggression (minor and severe assault, injury, psychological aggression, and sexual coercion). The third and fourth measures involved assessing more distal prior experience that is not directly related to dating, namely sexual abuse (unwanted family or non-family sexual contact before age 18) and violence socialization (family and non-family pro-violence attitudes and behavior before age 12).

First, we examined dating violence experience specific to the risk assessed namely the risk of being pushed, grabbed, slapped, or hit by a dating partner. The minor assault subscale of the CTS2 assessed this type of previous experience. As displayed in Table 1, women with specific experience had greater personal risk perceptions compared to women without such experience  $r(167) = .23, p = .003$ . Minor assault experience was not related to perception of other women's risk or comparative optimism ( $ps > .28$ ).

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This second test of the experience hypothesis involved using the full range of dating violence experiences women in this sample had (including minor and severe assault, psychological aggression, sexual coercion, and injury). Because the sample was highly skewed and most participants reported having either no experience with dating violence or had suffered minor (as opposed to severe) experience we divided participants into a "no experience group" and an "experience group" for each of the four types of aggression. Thus, a woman received a score of zero ("no experience") if she answered it had "never happened" in response to all items on that subscale (e.g., she answered that it "never happened" to all eight items on the psychological aggression subscale). The "experience" group consisted of women who answered that it had happened to them for at least one of the items on that subscale. Then, a composite variable was created in which women received one point for each type of dating violence aggression they had experienced out of the four measured. Thus, each woman received a score from 0 (experienced none of the four types of aggression) to 4 (experienced all four of the four types of aggression). Eighteen percent of the women had experienced none of the four types of dating violence aggression, 40% experienced one type, 22% experienced two types, 7% experienced three types, and 3% experienced all four types. Was experience with more types of dating violence associated with risk perceptions? Table 1 shows that the more types of dating violence experienced the higher the estimated personal risk,  $r(167) = .21, p = .006$ . Experience was not associated with assessments of other risk or comparative optimism ( $ps > .21$ ).

Did having dating violence experience contribute to women feeling less comparatively optimistic? To determine if women in each group thought their risk was significantly smaller than the typical female college student, we used a one-sample *t*-test to compare each mean to a score of zero (which indicate that women rated their risk the same as that of other college women). Results showed that women with no dating violence experience thought they were less at risk than other college women,  $t(29) = -9.37, p < .001$ , as did women with one type of dating violence experience,  $t(76) = -13.57, p < .001$ , women with two types of dating violence experience,  $t(41) = -8.66, p < .001$ , women with three types of dating violence experience,  $t(12) = -4.20, p < .001$ , and marginally women with four types of dating vio-

lence experience,  $t(4) = -2.36, p = .08$ . Furthermore, the means for comparative optimism for the group with no dating violence experience ( $M = 2.03, N = 30$ ), one type of experience ( $M = 2.05, N = 77$ ), two types of experience ( $M = 1.86, N = 42$ ), three types of experience ( $M = 1.62, N = 13$ ), and all four types of experience ( $M = 1.60, N = 5$ ), were approximately the same,  $F(4, 162) = 0.49, p = .75$ . Thus, although greater experience was associated with increased personal risk perception, this did not translate to an increased vulnerability relative to other female college students. Women consistently thought they were less at risk than their peers.

Turning to the third and fourth measures of experience we examined if distal experiences of sexual abuse and violence socialization were related to risk perceptions. As can be seen in Table 1, sexual abuse was correlated with personal risk perception,  $r(186) = .15, p = .05$  and violence socialization was correlated with personal risk perception,  $r(188) = .29, p < .001$ . However, neither type of experience was associated with other risk perception or comparative optimism ( $ps > .11$ ). In sum, both direct dating violence experience and indirect experience with sexual abuse or violence socialization showed the same pattern: experience was associated with increased perception of personal risk but was not related with perceived risk of others or comparative optimism.

Because these three types of experiences (minor assault, sexual abuse, and violence socialization) are interrelated (and related to depression) we decided to examine which type of experience best predicted personal risk, holding depression constant. Thus, a multiple regression analysis was conducted in which the predictor variables were depression, minor assault, sexual abuse, and violence socialization (we excluded the composite dating violence experience variable because it included the minor assault variable) and the criterion variable was personal risk perception. The linear combination of these experiences was significantly related to personal risk perception,  $F(4, 161) = 6.23, p < .001$ . Table 2 presents the standardized beta coefficients and  $t$ -values as well as the zero-order correlations. Both minor assault and violence socialization predicted personal risk perception when accounting statistically for depressive symptoms and the other types of experience. Thus, violence socialization and dating violence experience independently explain part of the variance in personal risk for future dating violence.

#### HYPOTHESIS 4: DEPRESSION MEDIATES THE RELATIONSHIP BETWEEN EXPERIENCE AND RISK PERCEPTIONS

The fourth hypothesis examined the relationship between dating violence experience (with minor assault) and depression in predicting personal risk perceptions. Is experience associated with greater perception of personal risk because women with experience also are more depressed? That is, does depression mediate the relationship between experience and risk perception? Because experience was not related to comparative optimism this question was only examined with respect to perception of personal risk. We used the minor assault scale although the results with the composite dating violence experience variable (scored on a 0 to 4 point scale) revealed identical findings. Using the recommendations by Baron and Kenny (1986) we estimated three regression equations. First, the mediator (depressive symptoms) was regressed on the independent variable (experience), standardized beta =  $.165, t(166) = 2.16, p = .03$ . Second, the dependent variable (personal risk perception) was regressed on the independent variable (experience), standardized beta =  $.381, t(166) = 5.31, p < .001$ . Third, the dependent variable (personal risk perception) was regressed on both the independent variable (experience) and the mediator (depressive symptoms). Here the effect of the independent variable was smaller but still significant, standardized beta =  $.191, t(165) = 2.56, p = .01$ . According to Baron and Kenny this last equation should have a smaller effect than the effect in the second regression, which it does. However, recent work updating the Baron and Kenny recommendations for testing mediation (Shrout & Bolger, 2002), suggest using a bootstrap analysis to test the indirect effect. The regression proposed by Baron and Kenny do not directly test the indirect path (in this case the path from experience to depression to personal risk perception) and this approach also suffers from low statistical power (Preacher & Hayes, 2004). Bootstrapping involves an empirically derived sampling distribution of the indirect effect, which makes no assumptions about the shape of the sampling distribution and remedies the power problem. In this case the analysis with 5000 bootstrapped resamples revealed a significant indirect effect in that the confidence interval around the indirect effect did not contain zero (point estimate unstandardized  $b = .05, 95\%$  confidence interval around  $b$  from  $.0076$  to  $.0953, N = 167$ ). Thus, the indirect ef-

TABLE 2. Summary of Regression Analysis for Three Types of Experience Predicting Personal Risk Controlling for Depressive Symptoms

	$\beta$	$t$	Zero-Order Correlation
Minor Assault	.11	1.92*	.19*
Sexual Abuse	-.07	-0.30	.07
Violence Socialization	.23	2.36**	.22**

Note.  $N = 166$ . \* $p < .05$ , \*\* $p < .01$ .

fect was indeed significantly different from zero at  $p < .05$  (two tailed). In sum, depressive symptoms partially mediated the relationship between dating violence experience and perceptions of personal risk of future dating violence.

## DISCUSSION

The current study examined the relationship between experience with violence and risk perceptions of future dating violence victimization. Results indicated that women displayed comparative optimism of becoming a victim of future dating violence. Depressive symptoms and several types of violence experiences (minor assault, general dating violence experience, violence socialization, and sexual abuse) were associated with greater personal risk perception but not perception of other women's risks nor with comparative optimism. Controlling for depression, experience with minor assault and violence socialization independently predicted personal risk perceptions. Finally, depressive symptoms partially mediated the relationship between experience and personal risk. Thus, depressive symptoms were part of the reason why women with dating violence experience estimated their personal risk as greater than women with less (or no) experience.

As expected women on average thought that their personal risk of future dating violence was less than that of the average female college student. It is not surprising that women show comparative optimism given the prevalence of this pattern of risk judgments (Helweg-Larsen & Shepperd, 2001). In addition, women with dating violence experience thought their personal risk of future violence was higher (compared with women with less or no dating violence experience) but even women with past dating violence thought they

were less at risk than other college women for experiencing future dating violence. Considering that past dating violence is a key predictor of future dating violence one might expect that a more objective risk assessment would include beliefs of greater future risk compared to other college women. However, research on comparative risk assessment shows that people are remarkably resistant to changing their risk beliefs away from one of comparative optimism (Weinstein & Klein, 1995).

Our results also indicated that depression was part of the reason why women with previous dating violence experiences estimated their personal future dating violence risk as greater. This is consistent with research on depression and dating violence in that depression is both a risk factor for subsequent dating violence (Cleveland et al., 2003) and a consequence of dating violence (Howard & Wang, 2003). Furthermore, we found that depressive symptoms and experience with violence attenuated personal risk perceptions but did not affect comparative optimism. In a study of college students' risk perceptions of sexual assault Brown et al. (2005) similarly found that experience and depression predicted personal risk perception but did not affect comparative optimism.

Experience influenced personal risk perceptions which is consistent with research showing a similar relationship in the domains of breast cancer (Absetz et al., 2000), sexual assault (Brown et al., 2005), and STD infections (van der Velde, van der Plight, & Hooykaas, 1994). Researchers have operationalized prior experience in a range of ways including loss of money or suffering personal injury in an earthquake (Helweg-Larsen, 1999), testing positive for an STD (van de Velde et al., 1994), getting injured in a car accident (McKenna & Albery, 2001), or having a relative with cancer (Absetz et al., 2000). Experiencing a negative event likely result not only in increased personal risk perception but also in other changes, including emotional reactions (sadness, depression, worry, and anger), lower perceived control, increased vividness, etc. For example, Absetz et al. compared women's personal risk estimate of getting breast cancer as a function of their experience with breast cancer among friends and family. Women with a first-degree relative (mother, daughter, or sister) with breast cancer thought their personal breast cancer risk was higher than women did who had some other blood relative with breast cancer. Obviously women with a first-degree relative had



greater medical risk, experience of seeing the disease at close range, and possibly other emotional and cognitive reactions. Brown et al. (2005) also found a relationship between sexual assault experience and personal risk perception of future sexual assault. They further found that perceived similarity to a typical victim mediated this relationship (depression was a partial mediator and perceived control was not a mediator). In the present study we found that depressive symptoms created one pathway between experience and personal risk perception. It is clearly important that researchers examine a variety of reasons why experience is associated with greater personal risk.

Some research examining the link between negative experiences and risk perceptions have focused on whether a single experience (e.g., sexual victimization) affects risk perceptions on a range of issues (e.g., being injured in a car accident, being diagnosed with cancer, having to withdraw from college) (e.g., Brown et al., 2005). In the present research we asked if a range of experiences (sexual abuse, violence socialization, dating violence) were associated with personal risk estimation for a single event (future dating violence). We found that both distal experiences (i.e., violence socialization) and more recent and directly relevant experiences (i.e., past dating violence) predicted personal risk perceptions even when controlling for depressive symptoms. One might have expected that distal experiences played a lesser role than direct and more recent experience. It is difficult to know if this finding is unique to the domain of dating violence. Research on predictors of dating violence show that watching violence in the home as a child, child maltreatment, and child abuse are all typically predictors of dating violence victimization in college women (e.g., Whitfield et al., 2003; Wolfe et al., 2004) although Smith et al. (2003) found that dating violence in college was better predicted by adolescent dating violence experience compared to childhood violence experience. Future research on risk perceptions will have to further examine and replicate the current findings of broad effects of past violence experience on personal risk perceptions of future dating violence.

The primary limitation in this study was its cross-sectional nature. The wording of the questions was such that sexual abuse and violence socialization questions referred to times in childhood, dating violence questions referred to experiences during adoles-

cence/young adulthood, and future risk perception questions asked the women to assess their likelihood of experiencing dating violence in the future. However, it is possible that their current state of mind or recent experiences colored both their past recollections and their future predictions. In addition, it is possible that enhanced perceptions of personal risk lead to increased reporting of depressive symptoms. Finally, we did not examine how long ago the reported dating violence occurred. To the extent that direct and vivid experiences influence risk perceptions future research should also examine the timing of the past experiences.

Examining personal risk perceptions for dating violence and other forms of interpersonal violence is important because risk perceptions can improve the predictive power of traditional risk factors in predicting future violence (Weisz et al., 2000). While factors associated with violence perpetration rightfully remain an important area of investigation, risk perception and other variables associated with victims of IPV also provide vital information and need not be associated with blaming the victim (Harned, 2002). Understanding risk perceptions is clearly an important undertaking for theoretical but also applied perspectives. College campus counselors might be able to play a unique role in reaching women at risk for or experiencing dating violence (e.g., Murray & Kardatzke, 2007). Understanding the factors that influence women's risk perceptions and the consequences of such risk perceptions can aid in effective interventions.

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