

Perceived Risk for Future Intimate Partner Violence among Women in a Domestic Violence Shelter

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Abstract Research investigating women's risk assessments for intimate partner violence (IPV) shows that women can predict future violence with relative accuracy. Limited research has investigated factors that are associated with perceived risk and the potential behavioral consequences of victim risk perception. Results from a survey of women in a domestic violence shelter ($N=56$) indicated that women perceive lower risk of future violence if the abusive relationship were to end and higher risk of violence if it were to continue. Certain abuse experiences were related to elevated perceptions of personal risk for future violence. Further, perceived personal risk predicted the women's intention to terminate their relationship upon leaving shelter. Results are discussed as they may inform interventions preventing IPV.

Keywords Intimate partner violence · Risk perception · Relationship decisions · Domestic violence shelters

Every year in the United States approximately 1.5 million women experience a physical or sexual assault from a

current or former intimate partner. Nationwide, approximately 25% of all women have experienced a physical or sexual assault by a current or former intimate partner or date at some point in their lifetime. Because victimized women are often assaulted on multiple occasions, national prevalence rates of intimate partner violence (IPV) and sexual assaults amount to roughly 4.8 million incidents per year (Tjaden and Thoennes 2000). These numbers, reported from the nationally-representative National Violence Against Women Survey, reflect the high national prevalence of intimate partner violence. Research shows that women sustain injuries from IPV at greater rates than male victims of IPV (Archer 2000; Arias and Corso 2005). Not surprisingly, female victims also seek mental health services and utilize medical care (e.g., emergency medical services, hospital, or physician visits) at disproportionately greater rates than male victims (Arias and Corso 2005). Severe IPV not only carries the risk of serious physical and psychological injury, but is also a significant predictor of future victimization for women (Cattaneo and Goodman 2005; Krause et al. 2006). Given the associated risk of future abuse for victims of severe IPV, it is important to examine how women perceive their risk for re-abuse in their relationships.

It is particularly important to understand women's assessments of risk for future violence once violence has occurred in a relationship, because risk perceptions by female victims of abusive relationships are related to actual future risk for violence¹ (Cattaneo and Goodman 2003;

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¹ The term 'risk assessment' is currently the term of choice in intimate partner violence research, while other literatures (e.g. health behavior research) use the term 'risk perception'. The current study suggests that these two terms address the same fundamental concept; a subjective feeling of being at risk for an event, and thus, the terms will be used interchangeably.

Cattaneo et al. 2007; Gondolf and Heckert 2003; Heckert and Gondolf 2004; Weisz et al. 2000). For example, Heckert and Gondolf (2004) conducted a 15-month longitudinal study of 499 female partners of men in a batterer treatment program. They found that women's perceptions of likelihood of future violence predicted subsequent assault better than risk factors alone and as well as two risk assessment instruments. Additionally, when women's risk ratings were included it increased the predictive accuracy of the model (Heckert and Gondolf 2004). In an 18-month longitudinal study of 246 women pursuing criminal or civil legal action against a batterer and/or seeking shelter assistance, women were asked to predict their personal likelihood of future violence victimization. It was found that 55% of women correctly perceived themselves to be at low risk and subsequently did not experience re-abuse whereas another 11% of women correctly perceived their risk to be high and subsequently experienced re-abuse. That is, 66% of women accurately estimated their future risk. The women who did not accurately predict their future risk (34% of the sample) were equally likely to make false-positive or false-negative errors (Cattaneo et al. 2007). Of note, women who experienced more severe physical abuse in their relationship and perceived low risk for future violence were twice as likely to be incorrect (experience re-abuse) than correct (without re-abuse) at follow-up (Cattaneo et al. 2007).

Research also suggests that women are similarly accurate in predicting their risk whether it is assessed in close temporal proximity to an abuse episode (Cattaneo and Goodman 2003) or when considerable time has passed since the last abuse episode (Weisz et al. 2000). Thus, while women are not perfect at predicting future violence, research unequivocally suggests that their perceptions can improve prediction models and provide valuable information to advocates working in applied settings. Given the relative accuracy of women's risk perceptions, it is important to understand the relationship between risk perceptions and women's intentions and behaviors. In other words, does feeling at risk for violence from a partner translate to an intention to change behavior in an attempt to reduce that risk?

The relationship between risk perception and behavior has been studied extensively in the health behavior domain but has not received as much attention in the IPV literature. One can conceptualize intimate partner violence and related behaviors as health behaviors because of the potential for injury associated with relationship decisions (Hendy et al. 2003; Martin et al. 2000). In the health behavior domain, the behavior motivation hypothesis posits that feeling at high risk for a negative event will lead to adoption of protective behavior or a change in behavior in order to reduce the risk (Brewer et al. 2004). The relationship between risk perception and behavior has been supported

empirically. For example, increased perception of risk for a negative health outcome (e.g., "What are my chances of getting the flu") is related to subsequent behavior adoption to reduce the risk (e.g., actually getting a flu shot) (Brewer et al. 2004, 2007; Weinstein et al. 2007). A recent meta-analysis of the risk-behavior relationship suggests that the causal relationship is more consistent and stronger than previously reported in some studies and earlier meta-analyses (Brewer et al. 2007). However, it is important to control for behavioral intentions when assessing risk perceptions (Weinstein et al. 1998). If one simply asks for behavioral intentions without any conditions specified (e.g., "What is your risk of getting lung cancer?") then people answer the question applying their own assumptions or conditions (e.g., "Although I smoke now I plan on quitting at some point so I will answer the lung cancer risk question in that light"). Behavioral intentions can be controlled by asking conditional risk questions (e.g., "Imagine that you smoke 20 cigarettes a day. What is your risk of getting lung cancer?"). The relative accuracy of many women's risk perceptions and the empirically supported relationship between perceived risk and behavior in other health domains underscore the importance of research investigating risk perceptions among women experiencing IPV.

Much research rests on the assumption that ending an abusive relationship is the best way for women to maximize their subjective well-being and minimize the chance for future violence (see Bell et al. 2007 for an excellent discussion on the limitations of existing research on the psychological and re-abuse implications of ending or continuing an abusive relationship). A recent longitudinal study of 406 women experiencing IPV assessed the violence and psychological outcomes associated with staying as opposed to leaving the abusive relationship (Bell et al. 2007). This study differentiated between women who remained apart from their partner throughout the follow-up period, women who remained in the relationship, women who were together at first but subsequently terminated the relationship, and women who exhibited fluctuations in their relationship status throughout the follow-up period. Women who were completely apart from their batterers fared the best in terms of quality of life outcomes and reported the lowest levels of subsequent physical abuse (6%), psychological abuse (17%), and stalking (17%) compared with women who were in the relationship at some point during the follow-up, who reported greater amounts of physical abuse (25%), psychological abuse (65%), and stalking (40%). These findings, which are currently the best attempt to directly compare psychological and violence outcomes among groups in the stay or leave decision, suggest that women who can successfully terminate (and who do so immediately following an abuse episode) seem to have the best outcomes in terms of risk for future violence.

The findings from Bell et al. (2007) also illuminate an important consideration for risk assessment research. Existing research in IPV risk assessment typically examines women's *unconditional* risk assessments (e.g., "What is the likelihood that your partner will physically injure you within the next year") in order to determine accuracy in re-abuse prediction. As relationship decisions are related to types and rates of re-abuse for women experiencing IPV, it is important to also examine women's *conditional* risk assessments (i.e., "What is your risk for future violence if you continue your relationship").

Given that victim risk assessments are predictive of future abuse, and relationship decisions are associated with violence outcomes at follow up, it is important to understand factors that may be associated with personal risk perceptions for future negative events. One such factor is previous personal experience with an event, which in general is associated with increased estimation of personal risk (Helweg-Larsen and Shepperd 2001). This pattern has also been found with respect to sexual victimization in which women with previous experience of sexual victimization showed greater perceived risk for their own future sexual victimization (Brown et al. 2005). Similarly, in a study of dating violence among college students, women with previous experience of dating violence reported higher personal-risk ratings for future violence than women without such experience (Helweg-Larsen et al. 2008). In sum, previous victimization experience in an interpersonal or relationship context is related to increased personal risk perceptions of future victimization. These findings suggest that examining previous experience is one important aspect of understanding risk perception in victimized populations (and consequently, the associated implications in violence prediction and relationship decisions).

The present study examined the risk perceptions, previous abuse experiences, and relationship intentions among women in a domestic violence shelter. The current study explored the associations between risk perception and previous abuse experiences and risk perception and behavioral intention with the following predictions: (1) previous experience with abusive events—defined here as contact with the police, having left the batterer, and more frequent severe violence in the preceding year—will be associated with increased perceptions of personal risk; and (2) the level of perceived risk will be associated with intention to engage in a protective behavior (terminate the relationship).

Method

Participants

Participants were 56 women residing in four domestic violence shelters in Pennsylvania. Women living in the shelters were

invited to participate in the study if they were at the shelter due to intimate partner violence from a current or former male partner. Demographic information is presented in Table 1.

Materials

Overview The nine-page survey contained five sections that were relevant to the current study: Background Information, Risk Perceptions, Current Intentions, Relationship Behaviors, and Demographic Information. The survey generally took between 15 to 25 min to complete. The survey was administered by one of the researchers or a trained staff member. Participants were informed that their participation was voluntary and their responses were completely anonymous. Participants were instructed to answer the questions with regard to the abusive relationship they left upon entering the shelter; therefore, any abuse

Table 1 Demographic description of sample

Variable	N	%
Race or ethnic identification		
White	32	58.2
Black	15	26.8
Hispanic	4	7.1
Mixed race	4	7.1
Did not respond	1	1.8
Employment status		
Full time	18	32.1
Part-time	6	10.7
Unemployed	23	41.1
Disability	7	12.5
Student	2	3.6
Average monthly income		
<\$500	18	32.1
\$500–999	20	35.7
\$1,000–1,999	13	23.2
\$2,000–2,999	2	3.6
Do not know	3	5.4
Cohabitation status prior to shelter stay		
Living with batterer	48	87.3
Living away from batterer	7	12.7
Previous police contact		
Yes	38	67.9
No	18	32.1
Left batterer previously, prior to this shelter stay		
Yes	37	66.1
No	19	33.9
Type of relationship with batterer		
Married	13	23.6
Married, but separated	4	7.3
Dating/sexual partners/engaged	23	41.9
Ex-sexual partners	4	7.3
Living together/domestic partners	6	10.9
Father of child(ren)	4	7.3
Other-unspecified	1	1.8

experienced in a previous relationship other than the most current was not included in the present study. The survey questions referred to the abusive partner as “your batterer,” upon suggestion from shelter staff who argued that this is the most accurate and inclusive descriptor, and currently the term of choice used by domestic violence services.

Background information Relationship status prior to shelter stay was assessed by asking “How would you define your relationship to your batterer pre-shelter?” Participants were asked to check one of the following: Married, Married but separated, Sexual partners, Divorced, Dating, Ex-sexual partners, or Other (write in what). Cohabitation status prior to shelter stay was assessed by asking “Were you living in the same house or residence with your batterer before you came to this shelter?” Participants were instructed to check *yes* or *no*. Previous police involvement was assessed by asking “In the past, have you contacted police due to a violence episode with your batterer?” Participants were instructed to check *yes* or *no*. If participants indicated that they had contacted the police, they were then asked “How many times?” and “Of the times you called the police, how many times was your batterer arrested?” Participants were instructed to write in one number on the line provided.

Risk perceptions Participants were asked to rate the likelihood that they would personally experience future relationship violence from a partner. We assessed personal risk perception in three ways: unconditional risk, risk conditional upon ending the relationship, and risk conditional upon continuing the relationship. Unconditional personal risk perception was assessed by asking “What do you think the chances are that you will be pushed, shoved, or hit by a partner in the next year?” Ratings were made on a five-point Likert scale on which participants indicated a rating from 1 (*Not at all likely*) to 5 (*Very likely*). Next, conditional personal risk was assessed by asking participants to respond to the questions, “If you choose to continue your relationship with your batterer when you leave this shelter, what do you think your chances are that you will be pushed, shoved, or hit by your batterer in the next year?” This question was then posed in terms of the likelihood of future violence conditional upon ending the relationship (“If you choose to end your relationship with your batterer when you leave this shelter, what do you think your chances are that you will be pushed, shoved, or hit by your batterer in the next year?”). Ratings were made on a five-point Likert scale in which participants indicated a rating from 1 (*Not at all likely*) to 5 (*Very likely*).

Intentions Participants were asked their intention regarding the future of their relationship. Participants were instructed to rate how much they agreed or disagreed with a given

statement. The statements included: “I intend to return to a shared residence with my batterer upon leaving the shelter,” and “I intend to resume my relationship with my batterer upon leaving the shelter.” Responses were made on a five-point Likert scale ranging from 1 (*Completely agree*) to 5 (*Completely disagree*). These two statements were included to accurately measure women’s intentions regarding the relationship, given that some women may intend to end the relationship but may not immediately move out, or alternately may move out but not end the relationship. Our results showed that these two items were correlated ($r=0.74, p<0.01$), and thus they were averaged to create the intention item used for analyses.

Participants who indicated intent to return to their batterer upon leaving the shelter were asked to indicate possible factors or reasons that affected their decision. Participants were instructed “If you currently intend to return to a shared residence with your batterer after your stay in this shelter, please check those factors that play a role in your decision.” A list of possible factors followed, including items such as “He promises to change,” “You feel safer with him, because you know what he is doing,” and “You don’t have the money to support yourself.” Participants who had previously left a shared residence with their batterer before for a night or more (other than the present stay in shelter) were asked to reflect upon factors that influenced their decision to return, and were provided the same list of options. The list of possible factors was taken from a previous study assessing victim-reported impediments to safety (Anderson et al. 2003). This list was supplemented with additional factors based on input from staff and residents from one of the participating shelters.

Relationship behaviors Relationship behaviors were assessed using the Revised Conflicts Tactics Scale (CTS2) (Straus et al. 1996). The CTS2 measures the prevalence and severity of physical, sexual, and psychological abuse occurring within romantic relationships. The CTS-2 is a widely used acts scale used in the intimate partner violence literature, and research has demonstrated evidence for the construct validity of this scale (i.e., research illustrating the differences in response by gender and by perpetrator status) as well as its discriminant properties (i.e., negative correlations with measures of social integration) (see Straus et al. 1996 for psychometric data). The scale contains questions that assess both the behaviors of the participant, as well as her partner. Because this study is solely concerned with the victimization experiences of the women, only the questions assessing the behavior of the partner and not the women were utilized. Participants were presented with items assessing specific abusive acts and behaviors, and were asked how many times their partner had committed the behavior within the previous year. The

participants responded on an eight point scale indicating the number of times the behavior or action occurred (once in the past year, twice in the past year, three to five times in the past year, six to ten 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 more than one year ago, and this has never happened). The CTS2 accounts for severity of violence by including items specified as either “minor” or “severe.” The CTS2 includes five subscales: physical assault, injury, psychological aggression, negotiation, and sexual coercion (the negotiation subscale was not used for analyses in this study).

The physical assault subscale of the CTS2 assessed the amount of physical abuse the women sustained from their batterers. This subscale included 12 items assessing both minor physical assault (e.g., “My batterer twisted my arm or pulled my hair”) and severe physical assault (e.g., “My batterer choked/strangled me”) and had a Cronbach’s α of 0.93.

The psychological aggression subscale of the CTS2 assessed the amount of psychological abuse occurring in the relationship. This subscale included eight items and assessed both minor psychological aggression (e.g., “My batterer insulted me or swore at me”) and severe psychological aggression (e.g., “My batterer destroyed something belonging to me”), and had a Cronbach’s α of 0.85.

The sexual coercion subscale measured behavior that was intended to force the women to engage in unwanted sexual activity. This scale included seven questions that assessed the use of three types of coercion (insisting on sex, using threat of force, and using physical force) with three types of sexual acts (vaginal, anal, and oral). Cronbach’s α was 0.89.

The injury subscale of the CTS2 assessed the amount of physical injury the women sustained in the relationship. The injury subscale included six items assessing both minor injury (“I had a sprain, bruise, or small cut because of a fight with my batterer”) and severe injury (“I had a broken bone because of a fight with my batterer”), and had a Cronbach’s α of 0.78.

Minor wording changes were made to the CTS2 by suggestion of the shelter staff in order to improve the clarity of the given items, as well as to change references to the partner from “partner” to “batterer” in the interest of preserving the continuity of wording choice in the survey. An example of a change is an item altered from “My partner threw something at me that could hurt” and modified to read “My batterer threw an object at me with the intent of injuring me.”

Demographic information Participants’ age, employment status, income level, and ethnic identification were assessed.

Procedure

Participants were asked to participate in a study assessing the thoughts and behaviors of women residing in a domestic violence shelter. Participants were recruited at

domestic violence shelters either by the first author or a trained staff member at the shelter. The method of recruitment differed slightly by shelter site. At one site, the study was advertised in a common area of the shelter, and women were informed of the date and time when the researcher would arrive to administer the survey. Women who were not available at the specified time were given the opportunity to take the questionnaire at a different time. At other sites, the survey was advertised either in group meetings or on an individual basis by the shelter staff. We do not have data on the percentage or characteristics of the women who declined to participate in the survey and thus cannot make any inferences about any characteristics that may differentiate the women who self-selected into the study. A cover sheet explained that the purpose of the study was to further understand women’s risk perceptions and relationship intentions in abusive relationships. The cover sheet also outlined the procedure, risks, and benefits associated with participation. Informed consent was implied with removal of the cover sheet and completion of the survey. Upon completion of the survey, participants were compensated with a \$10.00 Wal-Mart gift card. The survey and procedures were approved by the Institutional Review Board.

Results

The 56 women in this sample reported experiencing varying levels of psychological abuse, physical assault, physical injury, or sexual coercion in the year prior to the survey. As Table 2 demonstrates, some of the women experienced very severe forms of abuse (e.g., 45.5% of the sample endorsed being threatened with a knife or gun, and 18.9% of the women reported having a broken bone as the result of the abuse). Risk ratings indicate that the women viewed ending the relationship to be the lower risk condition ($M=2.14$, $SD=1.20$) compared to continuing the relationship, which was viewed as the high risk relationship condition ($M=3.96$, $SD=1.49$). $t(53)=8.04$, $p<0.01$, $d=0.94$ (see Fig. 1). On average, women rated their unconditional risk for future violence ($M=2.28$, $SD=1.45$) the same as their risk if they were to end the relationship ($M=2.14$, $SD=1.20$), $t(55)=0.77$, $p=0.45$.

The first hypothesis was that perceived risk would be associated with prior experience, in that women with greater abuse experience would exhibit elevated levels of perceived personal risk for future violence. Previous experience was defined in three ways: having left the batterer on a previous occasion; having contacted the police due to violence in the past; and the frequency of severe violence experienced in the past year.

Having left the batterer on a previous occasion For 37 of the women (66.1%), the current shelter stay was not the

Table 2 Percentage of women experiencing each abuse item in the previous year from an intimate partner

Abuse item	<i>N</i>	Percentage of women experiencing in the past year
Psychological abuse—Minor subscale		
Insulted me or swore at me	55	98.2
Shouted or yelled at me	54	96.3
Stomped out of the house during a disagreement	54	70.4
Psychological abuse- Severe subscale		
Ruined my plans out of spite	53	84.9
Threatened to hit me or throw something at me	53	77.4
Destroyed something belonging to me	55	72.7
Called me fat or ugly	55	52.7
Accused me of being a lousy lover	53	37.7
Physical assault—Minor subscale		
Pushed or shoved me	55	96.4
Grabbed me	55	94.5
Twisted my arm or pulled my hair	55	70.9
Threw an object at me with intent to injure	54	70.4
Slapped me	54	68.5
Physical assault—Severe subscale		
Slammed me against a wall	55	78.2
Beat me up	55	70.9
Punched me	55	69.1
Choked/strangled me	55	58.2
Kicked me	53	54.7
Threatened me with a knife or gun	55	45.5
Burned or scalded me	53	9.4
Injury- Minor subscale		
Felt pain the day after a fight	53	84.9
Had a sprain, bruise, or small cut because of fight	55	80.0
Injury—Severe subscale		
Needed to see a doctor, but didn't	54	51.9
Went to a doctor because of a fight	55	43.6
Had a broken bone	53	18.9
Passed out from being hit in the head	55	16.4
Sexual coercion- Minor subscale		
Insisted on sex (no physical force)	54	64.8
Made me have sex without a condom	53	45.3
Insisted on oral or anal sex (no physical force)	52	34.6
Sexual coercion—Severe subscale		
Used force to make me have sex	54	50.0
Used verbal threats to make me have sex	52	50.0
Used force to make me have oral or anal sex	55	43.6
Used verbal threats to make me have oral or anal sex	54	31.5

first time leaving their batterer. Women who had left before reported leaving between one and ten times ($M=2.79$, $SD=2.42$). Self-reported reasons contributing to women's decision to return to their batterer after temporarily leaving are reported in Table 3. Independent samples *t*-tests assessed differences in personal risk perceptions among women who had left previously and women who had not left previously. Results revealed that women who had left their batterer on a previous occasion ($M=2.27$) did not differ significantly from women who had never left

($M=2.31$) for perceived personal risk (unconditional), $t(54)=0.11$, $p=.91$, $d=.03$. There was also no difference with respect to perceived personal risk (conditional-end relationship) in that women who had left their batterer on a previous occasion ($M=2.03$) estimated their conditional risk to be the same as women who had never left ($M=2.37$), $t(52)=1.01$, $p=.32$, $d=.26$. The women did differ for perceived personal risk (conditional-continue relationship), $t(54)=3.16$, $p<.01$, $d=.86$. Women who had left their batterer on a previous occasion ($M=4.40$) estimated their

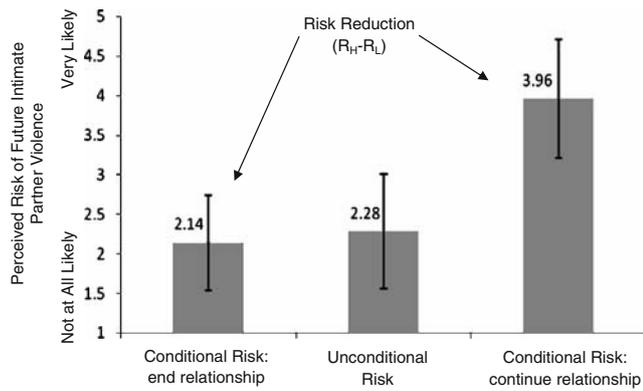


Fig. 1 Participants’ perceived personal risk of future violence dependent on condition (ending the relationship, continuing the relationship, or unspecified condition). Bars reflect the standard deviations

conditional risk to be greater than the women who had never left ($M=3.16$). Thus, women who had left their batterer on a previous occasion viewed continuing the relationship as riskier than women who had never left their batterer. When assessing risk associated with ending the relationship or with an unconditional risk question, women who had left their batterer did not differ in their risk ratings from women who had never left.

Police contact Thirty-eight of the women (67.9%) had contacted the police at least once in the past year due to a violent episode. Women who had contacted the police reported calling between one and thirty times ($M=3.7$, $SD=5.45$, $Mdn=2.0$). Police contact resulted in an arrest between zero and three times ($M=0.63$, $SD=0.71$, $Mdn=1$), and 20 of the batterers (52.6%) have been arrested at least once in the past. Results were marginally significant for unconditional personal risk perceptions, in that women who had called the police on a previous occasion ($M=2.53$) perceived greater personal risk (unconditional) than women who had never called ($M=1.78$), $t(52)=1.85$, $p=.07$, $d=0.56$. Similarly, results were marginally significant for conditional personal risk perception (conditional on continuing the relationship), in that women who had called the police ($M=4.22$) also perceived greater personal risk of future violence than women who had not called the police ($M=3.44$), $t(52)=1.85$, $p=0.07$, $d=0.51$. For perceived personal risk if the relationship ended (conditional-end relationship), women who had called the police ($M=2.26$) did not differ significantly from women who had not ($M=1.89$), $t(52)=0.28$, $p=0.28$, $d=0.24$. Thus, the relationship between experience and personal risk perception was marginally significant for unconditional risk and conditional risk if the relationship continues, and not significant for conditional risk if the relationship ends.

Table 3 Self-reported reasons for returning to a batterer after leaving temporarily among women who have left their batterer on a prior occasion

Reason for returning	N ^a	%
He promised to change	24	64.9
He was sorry for the abuse	23	62.2
You loved him	21	56.8
You feared being alone	21	56.8
You felt that you had nowhere to go or stay	19	51.4
You feared becoming homeless	17	45.9
You didn't have enough money to support yourself	17	45.9
He was stalking or harassing you	15	40.5
You missed him	15	40.5
You feared that you were unable to survive financially on your own	15	40.5
You felt that he needed you	13	35.1
Belief that you should try to make your marriage vows work	12	32.4
He was threatening to find and kill you	12	32.4
You believed your children would suffer without him	11	29.7
You feared what he might do if you didn't return	10	27.0
He threatened to kill himself if you didn't return	8	21.6
He was threatening to harm your family	7	18.9
You feared losing your children in a custody battle	7	18.9
You didn't trust the courts or police to protect your safety	6	16.2
Your children wanted you to stay with him	6	16.2
Family or friends advised you to stay	5	13.5
You feared losing your children to Children and Youth Services	4	10.8
You felt safer with him, because you knew what he was doing	3	8.1

^a Total $n=37$

Frequency of severe violence sustained in the previous year In general, the women in this study have experienced extensive abuse by their batterers (see Table 2). Pearson correlations were used to test the hypothesis that women with higher frequency scores on the severe injury, physical assault, sexual coercion, and psychological abuse subscales would exhibit elevated personal risk ratings for experiencing future violence. Results revealed that a greater frequency of severe sexual coercion was related to elevated perceived personal risk perceptions for all three risk conditions (see Table 4). Contrary to predictions, the other abuse subscales were not related to personal risk perceptions.

The first hypothesis predicted that previous experience with abusive events—defined here as contact with the police, having left the batterer, and more frequent severe violence in the preceding year—would be associated with increased perceptions of personal risk. Our results provided partial support for this hypothesis. Women who had left their batterer on a prior occasion or previously called the police exhibited elevated personal risk perceptions for the condition of continuing the relationship (police contact was also marginally significant for the unconditional risk item). The only previous abuse experience that emerged as a significant predictor of personal risk perception was sexual coercion, which was associated with elevated personal risk perceptions for all risk conditions. Contrary to predictions, physical assault, psychological abuse, and injury were not associated with personal risk perceptions.

The second hypothesis tested the behavioral motivation hypothesis, with the expectation that perceived risk would predict relationship intentions in that women who perceived higher risk would be more likely to intend to engage in protective measures. In this case, not resuming the relationship and not returning to a shared residence with the batterer was conceptualized to be the optimal action (as evidenced by Bell et al. 2007). To test this hypothesis, a new variable was created by taking the difference of R_H

(the women's perceived personal risk given the high-risk condition—that the relationship continues) and R_L (the women's perceived personal risk given the low-risk condition—that the relationship ends). This risk-reduction variable ($R_H - R_L$), represents the difference in women's personal risk perceptions dependent on the hypothetical risk conditions. When examining risk and behavioral intentions with a causal hypothesis using a cross-sectional study, as in this case, correlating the risk reduction variable with behavioral intentions is the correct way of testing the motivational hypothesis (Weinstein et al. 1998). Higher scores for risk reduction indicate greater perceived benefit of ending the relationship, and therefore a positive correlation between risk reduction and intention to end the relationship was expected. Results indicated that higher risk reduction did predict intent to end the relationship, $r(56) = 0.36$, $p = 0.01$. Figure 1 illustrates the mean risk values women exhibited for personal risk perceptions for the unconditional and conditional items.

Discussion

The current study examined the relationship between risk perceptions of future violence and intentions to engage in protective behaviors among women in a domestic violence shelter. An additional aim was to explore the association between previous abuse experiences and perceptions of personal risk for future intimate partner violence. When women had experienced an occurrence of an event in the past year that is conceptualized here as signifying a severe abuse episode (i.e., leaving the batterer or calling the police), women with such experience perceived continuing the relationship to be riskier than women without these experiences (for police contact, unconditional risk perception was also marginally significant). When experience was defined as frequency of severe violence in the past year,

Table 4 Pearson correlations between personal risk perceptions and frequency of severe violence sustained within the previous year

Abuse Subscale	Type of Personal Risk	<i>r</i>	<i>p</i>
Severe physical assault	Unconditional	0.07	0.63
	Conditional-End	-0.01	0.97
	Conditional-Continue	0.15	0.28
Severe injury	Unconditional	-0.08	0.55
	Conditional-End	0.01	0.96
	Conditional-Continue	0.12	0.41
Severe psychological abuse	Unconditional	0.04	0.79
	Conditional-End	-0.02	0.91
	Conditional-Continue	0.18	0.21
Severe sexual coercion	Unconditional	0.27	0.05
	Conditional-End	0.31	0.02
	Conditional-Continue	0.25	0.08

sexual coercion was associated with increased personal risk perceptions (both unconditional and conditional risk); however, the physical assault, injury, and psychological abuse subscales were not associated with increased personal risk perceptions. Thus, the predicted relationship between frequent severe abuse experiences and perceived risk was partially supported. Further, perceptions of risk were associated with intended relationship decisions, in that women who perceived relatively greater risk for continuing the relationship exhibited greater intention to terminate.

The use of conditional risk perception items provides novel information about how women view risks in a situation-dependent manner. On average, women viewed continuing the relationship to be a high risk relationship decision, and ending the relationship a relatively less risky decision. Women seem to sense that they will be better off if they successfully terminate their abusive relationship, which is consistent with the recent finding showing that women who immediately and successfully terminate the relationship have the lowest rates of physical abuse, psychological abuse, and stalking at follow-up (Bell et al. 2007). However, it should be emphasized that there are potentially severe risks associated with terminating an abusive relationship, and while women are relatively accurate predictors of violence, they are not perfect. Research shows that relationship change or termination is a time of increased risk for homicide and more severe violence and injury for some women (Anderson 2003; Campbell et al. 2001, 2003; Nicolaidis et al. 2003; Wilson et al. 1993). The finding that women in this study viewed ending the relationship to be the low risk condition has important implications for advocates working with women in abusive relationships. While some women may correctly perceive low risk in this condition (and do not experience re-abuse), other women may incorrectly perceive low risk, and leave themselves vulnerable to a potentially more severe form of retaliatory violence. While we did not assess the accuracy of the women's risk assessment in the current study, our findings nevertheless indicate that using conditional risk items provides situation-specific risk information, and that women do indeed perceive their risk differentially depending on their intended actions once they leave the shelter.

The relationship between experience and risk perception was inconsistent, illuminating the need for further examination of the role of previous abuse in women's risk assessments. Contrary to expectations, injury, psychological abuse, and physical abuse experiences in the past year were not related to elevated perceptions of personal risk. One potential explanation for the null findings is the restricted range of abuse experience. All of the women in the study had experienced physical or emotional abuse that was severe enough to cause them to seek emergency shelter away from their batterer. While some research indicates that populations with varying

degrees of the same experience exhibit differences in risk perceptions (Helweg-Larsen 1999; Weinstein 1989), the literature that focuses on perceived risk and experience within personal relationships and physical victimization has traditionally compared a victimized population to a non-victimized population (Brown et al. 2005; Helweg-Larsen et al. 2008). Differences that are apparent between these groups are potentially more robust than differences among the severity of abuse sustained among women in a domestic violence shelter when experience reflects a rating of severity versus a dichotomous variable defined by occurrence. The current study attempted to control for the restricted range of abuse experience by using the severe abuse subscales. It is possible that even the range of severe abuse was so restricted in this sample that it made it difficult to detect the effect of experience.

Interestingly, sexual coercion experience was associated with increased personal risk perceptions for all risk conditions. There are several possible explanations for this finding. First, it is possible that sexual coercion is a more psychologically salient form of abuse that increases victims' responses to cues of danger. For example, research has shown that sexual abuse predicts generalized fear of one's partner (Kernsmith 2006). The relationship between sexual abuse and perceptions of fear or risk may be explained by the psychological outcomes of sexual abuse (e.g., posttraumatic stress symptoms). A recent study assessing variables contributing to victim assessments of risk for future IPV victimization found that PTSD symptoms were among the factors that contributed significantly to victims' risk assessments (Cattaneo 2007). A second, interpretation is that certain types of batterers may be more likely to utilize sexually coercive forms of violence perpetration, and women may (accurately) perceive these batterers as more dangerous. Marshall and Holtzworth-Munroe (2002) found that subtypes of male perpetrators characterized by more severe physical violence perpetration also engage in the most sexual coercion. The current findings indicated that sexual coercion was associated with perceptions of increased risk for future IPV, suggesting that future research on IPV risk perception should also assess the psychological ramifications of this type of abuse and the characteristics of men engaging in sexually coercive behaviors.

When experience was defined as leaving the batterer or police contact, experience was associated with increased personal risk perceptions if the relationship continued (police contact was also marginally significant for the unconditional personal risk item), but not with increased personal risk perceptions if the relationship ended. Women with these experiences judged themselves to be at greater risk for future violence if the relationship continued compared to women without these experiences. A possible interpretation is that these women have experienced

continuing violence after these intervention attempts, and thus, feel at greater risk for abuse if the relationship continues. Research has shown that women often suffer increased violence when they return to their partner after leaving temporarily (Anderson 2003). Calling the police and leaving the batterer can be interpreted as past behaviors that occurred in response to severe violence in the past. The women's current presence in a domestic violence shelter indicates that even after attempted intervention through police contact or a leave attempt, the violence subsequently resumed. The relationship between these previous experiences and risk perceptions may help explain why women often have multiple leave attempts before leaving a relationship for good.

The finding that women who exhibited a greater difference between their perceived risk for continuing the relationship and their perceived risk for ending the relationship (i.e., had a greater risk reduction score) expressed greater intent to end the relationship, compared to women with lower risk reduction scores, is consistent with literature that shows that risk reduction is a motivator for assuming protective behavior (Brewer et al. 2007; Weinstein 1988; Weinstein and Nicholich 1993; Weinstein et al. 2007). Understanding factors that influence risk perceptions, and thus perceived risk reduction, has potentially important implications for advocates and counselors working with victims of IPV. Women are relatively accurate predictors of future violence, but they are imperfect. As illustrated here, women's risk assessments are a variable worth considering with regard to their intended behaviors, and thus, understanding factors that are associated with their risk perceptions have implications in helping to maximize women's ability to 'read' their situation and adopt behaviors accordingly. Theoretically, our finding supports the hypothesis that risk perception is an important component of understanding adoption of or change in behavior. While these findings support that risk reduction is a motivator of intention to assume protective behavior, the use of longitudinal data would be preferable, to measure actual behavioral outcome instead of intentions. Future research that utilizes follow-up with the women could determine whether they successfully terminate their relationships following their stated intention to do so, as well as their actual re-abuse outcome.

The cross-sectional design of the study did not allow us to examine the relationship between perceived risk and a behavioral outcome, although research in the health behavior domain suggests that intentions may be used as an adequate substitution for behavior when follow-up is not obtained (Weinstein et al. 1998). Future research examining the relationship between intended and actual relationship change among IPV victims would provide better support for this substitution. An additional limitation of our study was the possible oversimplification of women's relationship choices upon leaving a domestic violence shelter. The

current study represented women's decisions as a dichotomized choice: ending or continuing the relationship—the most basic decision that women make in an abusive relationship. We recognize that this may oversimplify the women's situation upon leaving shelter. For example, women may leave a shared residence but continue a relationship, or return to a shared residence although their relationship status may change. Further, the women were asked to recall the numbers of abusive episodes occurring within the past year, some of which (especially psychologically abusive events) may occur so frequently it is difficult to accurately report. Perhaps the most statistically important limitations of our study were the relatively small sample size (56 women) and the restricted range of abuse in our sample—all women were abused to the degree that they left their batterer and sought safe shelter, perhaps obscuring the predicted relationship between experience and risk perception. The generalizability of our findings is also limited. This was a relatively small sample of mostly low-income women seeking help from domestic violence services. These limitations are important to consider, but should not undervalue the contribution of this study to the current body of research on risk assessment and intimate partner violence.

Women's risk perceptions are often accurate and, as supported by the current findings, related to intended relationship behavior. Advocates and counselors of intimate partner violence survivors are trained to assist the woman to develop a plan of action that relies on the dynamic feelings of safety and risk that the woman feels in her particular situation. Risk perceptions remain a vital consideration when helping women to maximize their safety and research should continue to explore the correlates and potential consequences of perceived risk in a condition-specific manner. Future research using longitudinal data to observe how risk perceptions and behaviors may fluctuate and change during the course of an abusive relationship may further illuminate this complex relationship. The current study highlights the importance of examining previous experiences as they relate to victims' risk perceptions in the context of potential relationship outcomes, and the potential intended behavioral ramifications of these risk perceptions within the relationship. This continues to be an area of study with important implications for advocates working with IPV victims, and future research will continue to inform and, hopefully, improve interventions for the many victims of intimate partner violence.

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