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Battered Women's Cognitive Schemata

**Mary Ann Dutton,¹ Kimberly J. Burghardt,¹ Sean G. Perrin,¹
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This study examined battered women's cognitive schema in relation to their cognitions about violence (i.e., the "meaning" attached to the violence), post-traumatic reactions to violence, and sexual victimization histories. Seventy-two battered women seeking help from an outpatient family violence clinic were subjects. The meaning of the violence (e.g., expectations of recurrent violence and of severe/lethal violence, causal attribution) was found to explain variance in cognitive schemata about SAFETY, SELF, AND OTHER (McCann and Pearlman, 1990a). All measures of cognitive schemata were significantly related to various global and specific measures of posttraumatic stress (GSI, MMPI-PTSD, IES). No differences were found for cognitive schemata based on histories of sexual victimization. Results point to the importance of assessing the impact of traumatic experiences on core cognitive beliefs as a component in the constellation of post-traumatic sequelae.

KEY WORDS: domestic violence; cognitive schemata; post-traumatic stress.

INTRODUCTION

Domestic violence can be characterized by several dimensions of traumatic stress identified by Green (1990), including severe physical harm or injury, threat to one's life or bodily integrity, and receipt of intentional injury or harm. Domestic violence may also include witnessing or learning of violence/threat of violence to a loved one or sudden loss/threat of loss (Green, 1990) when a batterer also abuses a child or threatens to kidnap her/him as a means of controlling the battered woman (Pence and Paymar, 1986). By these criteria domestic violence often can be identified as a traumatic stressor.

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Post-traumatic effects relevant to domestic violence have been categorized within three areas (Dutton, 1992b): (1) symptoms of psychological distress and/or dysfunction, including Post-Traumatic Stress Disorder; (2) cognitions, including disrupted cognitive schemata (Janoff-Bulman, 1992; McCann and Pearlman, 1990a); perception of few alternatives (Blackman, 1989; Walker, 1984), tolerance for cognitive inconsistency (Blackman, 1989); and (3) relational disturbances, such as dependence on the perpetrator (Dutton and Painter, 1981; Graham *et al.*, 1988) and difficulty with trust and intimacy within nonabusive relationships.

Recently there has been an increased recognition of the role cognitive responses play in understanding victims' experience of traumatic events. Cognitive-behavioral theories of psychology (c.f. Beck and Emery, 1985; Hollon and Garber, 1988; Mahoney, 1991) have postulated cognitive variables (e.g., beliefs and attitudes, expectations, appraisals, assumptions, and attributions) as central to understanding human behavior generally. Within the field of traumatology, emphasis has been on cognitions from three different perspectives: (1) cognitions about the traumatic experience, i.e., "fear network" (Foa *et al.*, 1991; Foa *et al.*, 1989), "network formation" (Creamer *et al.*, 1992), and "cognitive appraisal variables" (Resnick and Newton, 1992), which includes attributions, memory, subjective perceptions, and appraisals of the traumatic situation, (2) cognitive reactions to traumatic experience, i.e., intrusive or avoidant responses (Cassidy *et al.*, 1992; Creamer *et al.*, 1992; Horowitz, 1986), which themselves may constitute psychological symptoms, and (3) cognitive schemata or core assumptions presumed to be disrupted or shattered by the traumatic experience (Herman, 1992a, 1992b; Janoff-Bulman, 1992; McCann and Pearlman, 1990a). Although there have been applications of various cognitive theoretical frameworks toward understanding battered women's responses to abuse (Dutton-Douglas and Strom, 1988; Dutton, 1992a, 1992b; Follingstad *et al.*, 1988; McCann and Pearlman, 1990b; Walker, 1984), more empirical research is needed concerning the impact of traumatic experience on the cognitive schemata of this particular trauma group. The purpose of this study was to examine battered women's cognitive schema in relation to their cognitions about violence (i.e., the "meaning" of the violence), post-traumatic reactions to violence, and sexual victimization histories.

COGNITIVE SCHEMATA AND COGNITIONS ABOUT VIOLENCE

Cognitive schemata are considered to be "mental structures that represent organized knowledge about a given concept (Janoff-Bulman, 1992, p. 28)" or "complex cognitive representations of self and others [which]

underlie much of an individual's interpersonal behavior (McCann and Pearlman, 1990a, p. 57)," including the experience of emotion (Mahoney, 1991). These core assumptions are thought to be disrupted by traumatic experiences. Janoff-Bulman (1992) described how traumatic events can facilitate disillusionment, or "an assault on fundamental assumptions [which] is massive (p. 52)," and thus can result in "injury. . . to the victim's inner world (p. 52)." Herman (1993) explained the characterological sequelae following chronic abuse: "subjection to a relationship of coercive control produces profound alterations in the victim's identity. All the structures of the self. . . are invaded and systematically broken down (p. 222)." Further, Herman (1993) described a similar impact on the victim's perception of and relationship to others, as well as to self. Injury to the basic core sense of self and others affects the survivor's post-trauma adjustment (Janoff-Bulman, 1992) and can require considerable restorative efforts.

Generally, a cognitive-processing model of trauma (Creamer *et al.*, 1992; Foa *et al.*, 1989; Horowitz, 1986) postulates that relevant cognitions mediate posttraumatic reactions. Specifically, the meaning given to a traumatic experience by the victim (e.g., attributions, appraisals, perceptions) is thought to influence posttraumatic cognitive schemata (Janoff-Bulman, 1992; McCann and Pearlman, 1990a). Further, Kemp *et al.* (1991) suggest that the interpersonal factor in some traumas (e.g., rape, combat) explains why subjective characteristics of the traumatic event have shown stronger relationships to post-traumatic sequelae than have objective characteristics. That is, how the traumatic experience is interpreted by the victim determines the specific cognitive schemata or core assumptions most affected by it (Janoff-Bulman, 1992). Thus, the first purpose of this study was to examine the relationship between the meaning of the violence and abuse experience by battered women (i.e., cognitions about violence) and cognitive schemata.

COGNITIVE SCHEMATA AND POST-TRAUMATIC STRESS

Newer theoretical developments in traumatology (Blackman, 1989; Herman, 1992a, 1992b; Herman, 1993; Janoff-Bulman, 1992; McCann and Pearlman, 1990a) have focused on a broader spectrum of post-traumatic response than Post-Traumatic Stress Disorder (PTSD), currently the only diagnostic category to reflect posttraumatic phenomena in the DSM-III-R (APA, 1987). There is some evidence to suggest that for battered women symptoms of depression, anxiety, and general psychological distress coexist with PTSD (Kemp *et al.*, 1991). Keane and Wolfe (1990) suggest that "researchers may wish to consider reporting

measures of comorbidity (p. 1766)" along with reports of PTSD. However, recognition of comorbid psychological sequelae requires empirical evidence to establish its relevance, for trauma survivors generally, as well as for those of particular trauma groups.

Psychological well-being is thought to be intimately related to "modified" cognitive schema resulting from the resolution of the disequilibrium brought on by traumatic experience (Dansky *et al.*, 1990; Epstein, 1990). Similarly, McCann *et al.*, (1988) suggest, based on clinical observations, a proposed constellation of affective, cognitive, and behavioral manifestations of negative schemata. For example, trauma victims who exhibit negative schema in the area of self-esteem "may attempt to avoid awareness. . . through attempts at numbing and emotional constriction (p. 83)" and negative safety schemas "may be associated with intrusive thoughts (p. 81)." These and other hypothesized relationships have yet to be empirically validated. The second purpose of this paper is to examine the relationship between battered women's cognitive schemata and indicators of psychological distress, specifically measures used in the literature to assess PTSD.

COGNITIVE SCHEMATA AND SEXUAL VICTIMIZATION AMONG BATTERED WOMEN

Finally, battered women may not first experience abuse at the hands of their intimate partners. It has been estimated that between 25% and 40% of nonclinical samples of women have experienced sexual abuse before the age of 18 years (Wyatt *et al.*, 1992). Sexual revictimization in adulthood is considered to be one effect of childhood sexual abuse (Mandoki and Burkhart, 1989; Wyatt, 1992). Thus, for some battered women the multiplicity and chronicity of exposure to violence and abuse may be even greater than that which is typical of many abusive relationships, although little is known about the effects of multiple types of abuse on women's psychological health. With regard to cognitive schemata, Janoff-Bulman (1992) suggests that "the relative plasticity of the child's inner world provides the possibilities for both greater psychological protection from trauma as well as for greater psychological devastation (p. 84)." Determining differences in cognitive schema between battered women with and without a childhood history of sexual abuse may contribute to a greater understanding of the effect of multiple trauma on this sample as well as to the development of more effective interventions.

For some women the battering experience also includes sexual abuse by the batterer. It has been estimated that between 32% and 59% of battered women also experience sexual abuse in their battering relationship (Shields *et al.*, 1990; Walker, 1984). Finkelhor and Yllo (1983) recognized the role of varying forms of coercion in sexual abuse within a relationship, ranging from (implicit or explicit) threats of physical harm to social coercion (e.g., sex-role expectation). Sexual abuse in a battering relationship serves the similar function of control over the battering victim as do physical, and even psychological, abuse. However, the incremental traumatic effect of sexual abuse in a physically battering relationship has not yet been examined. Accordingly, a final purpose of the study is to examine differences in battered women's cognitive schema due to variation in their sexual abuse histories.

METHOD

Subjects

Seventy-two battered women from a specialized family violence outpatient clinic located in an urban location were selected for inclusion in the study based on the availability of selected data from a routine intake protocol. Anglo (82.1%), African-American (11.9%), and Hispanic (6.0%) women were included in the study. Women ranged from 18 to 55 years of age, with a mean age of 32.7 years ($SD = 9.2$). At the time of the intake evaluation, most women were married (50.7%) and living with an intimate partner (43.3%). A substantial number of women were divorced (11.9%) or had a divorce action pending (14.9%), with 22.4% of women never married. Women not living with their partners reported being either temporarily (13.4%) or permanently (43.3%) separated from them. Income levels were relatively low with 70.1% of women reporting a family income of less than \$20,000. Most women reported a high school (58.2%) or some college (28.4%) education, while 11.9% reported less than high school and 1.5% graduate level education.

Procedure

For women requesting services from the family violence clinic, routine intake evaluation procedures which include preliminary questionnaires, clinical interview, and assessment battery are completed within the first few weeks. Measures used in the present study were selected from this protocol.

Measures

Demographic information, family history, and a comprehensive abuse history were obtained using a structured clinical interview developed for this program. The Traumatic Stress Institute Belief Scale-Version D (TSI; Stamm and Bieber, 1992; Stamm *et al.*, 1991) was used to measure *cognitive schemata*. Possible responses range from 1 (disagree strongly) to 6 (agree strongly) with some items reverse scored. Higher scores are theorized to indicate greater "disruption" in the cognitive schemata assessed. Disruption in cognitive schemata should not be confused with psychopathology, however, since they are presumed to reflect the traumatic experience and thus be based the reality of the battered woman's experience. Adequate internal consistency has been demonstrated for both student and clinical populations on the subscales SAFETY (0.76), SELF-TRUST (0.84), SELF-ESTEEM (0.82 and 0.86, respectively), SELF-INTIMACY (0.76 and 0.82, respectively), OTHER-TRUST (0.84 and 0.88, respectively), OTHER-ESTEEM (0.83), OTHER-INTIMACY (0.82 and 0.83, respectively). The remaining subscales were eliminated from these analyses since they have been dropped from subsequent versions of the instrument. Average scores were obtained for the seven subscales by dividing the total score by the number of items on each subscale. The TOTAL SCORE represents the sum of all TSI items.

Cognitions about the violence from an intimate partner were measured using the Attribution of Violence (ATB) and Appraisal of Violence (APV) questionnaires developed by the first author (Dutton, 1992b). Similarly to the Attributional Style Questionnaire developed by Peterson *et al.*, (1982), the ATB measures the battered woman's attributions about the cause of violence by her intimate partner on a 5-point Likert-type scale where higher scores reflect greater internal (ATB2), stable (ATB3), and global (ATB4) attributions. Internal attribution is the belief that the violence is caused by something about herself (vs. her partner). Stable attribution of the cause of violence would indicate that the respondent believes that the cause of the violence will (vs. will not) continue to be present in the future. Finally, global attribution reflects the belief that aspects of one's life other than the violence are also influenced (vs. are not influenced) by that which causes the violence. The ATB also measures the battered woman's expectation that violence toward her will recur (ATB7). On a 3-point Likert-type scale, the APV was used to measure the battered woman's appraisal of severity of prior violence toward her by her intimate partner (APV1) and the expectation of severe or lethal violence toward her (APV5).

Five measures of *post-traumatic stress* were obtained. Three measures assessed a global post-traumatic stress response. Two of the three meas-

ures are based on the Symptom Checklist (SCL-90-R; Derogatis, 1977), a self-report instrument designed to measure psychological distress. The first global measure of distress, the Global Symptom Index (GSI) of the SCL-90-R, has been previously used in the literature as an indicator of post-traumatic reactions since they "tend to be pervasive in nature and are not necessarily confined to those symptoms required for a formal diagnosis of PTSD (Creamer *et al.*, 1991, p. 455)." The GSI has been widely used as "the best single indicator of the current level of depth of the disorder (Derogatis, 1977, p. 11)." The GSI has been used in studies of post-traumatic stress with battered women (Kemp *et al.*, 1991; Wayland *et al.*, 1991), students (Dansky *et al.*, 1990), childhood sexual abuse survivors (Testa *et al.*, 1992). Litz *et al.* (1992) found the GSI to correlate with the SCID PTSD module ($r_{pb} = .55$), with a sensitivity measured at 0.86 and specificity at 0.76 in a study with Vietnam veterans.

The second global measure of distress was the CR-PTSD scale developed by Saunders *et al.* (1991). The 28-item scale is derived from the Symptom Checklist-90-R (Derogatis, 1977) and has been shown to correctly classify 89.3% of female crime victims with Post-Traumatic Stress Disorder (PTSD) with a high level of internal consistency (Chronbach alpha coefficient = 0.93). The CR-PTSD average raw score was used for analysis.

The third global post-traumatic stress measure used was the 49-item MMPI-derived PTSD subscale (MMPI-PTSD; Keane *et al.*, 1984). The total raw score was used for analysis. Correct classification rates across various studies, using different methodologies and comparison groups, have ranged from 56% to 88% (Lyons and Keane, 1992). The MMPI-PTSD has been shown to have good internal consistency (Keane *et al.*, 1984).

Additionally, specific components of post-traumatic stress were measured using the Intrusion (IES-I) and Avoidance (IES-A) subscales of the Impact of Event Scale (IES; Horowitz *et al.*, 1979). Utility of the IES has been demonstrated in numerous studies, including with rape victims (Rothbaum *et al.*, 1992) and battered women (Kemp *et al.*, 1991). The IES has been to correctly classify 85% and 84% of PTSD-positive and PTSD-negative female crime victims, respectively (Arata *et al.*, 1991). Total subscale scores were used for analysis.

Sexual Abuse History

Sexual abuse was examined in two ways. First, battered women were divided into two groups based on their responses concerning a history of childhood sexual abuse. Data analyses were based on the 67 women who

provided an answer to the question, "Were you ever touched sexually, sexually abused, molested, or raped between the ages of 0-17 years by an adult, including parent or someone more than 5 years older than you"? Forty-nine percent of these women indicated a history of childhood sexual abuse ($n = 33$); the remaining 51% ($n = 34$) did not.

Second, the sample of battered women was divided into two groups based on their report of sexual abuse in the battering relationship. Thirty-three percent ($n = 22$) endorsed the question, "forced sexual activity when you didn't want it"; the remaining sixty-seven percent ($n = 45$) did not.

Data Analysis

The SPSS-X Release 3.0 computer software package for VAX/UNIX 8550 mainframe computer was used for statistical analyses. Demographic data were analyzed using the FREQUENCIES procedure and means and standard deviation for the TSI were obtained using the DESCRIPTIVES procedure.

Pearson correlations coefficients were derived to examine the relationship between TSI scores and other identified variables. Finally, MANOVA procedures were used to determine differences between battered women reporting (1) the presence versus absence of childhood sexual abuse and (2) the presence versus absence of sexual abuse in the battering relationship. Multiple correlation coefficients (R), R^2 , and beta weights were obtained from REGRESSION procedures.

RESULTS

Average scores and standard deviation scores are presented in Table I. There are no published norms against which to compare these data, although there is currently ongoing data collection for several different general samples, including therapists, students, outpatient clients, and chronic patients (Pearlman & MacIan, 1992). These results provide the basis for comparison of TSI scores to other trauma groups and perhaps as a measure of change resulting from domestic violence interventions.

Cognitive Schemata and Cognitions About Violence

The TSI TOTAL SCORE was significantly correlated with all measures of battered women's cognitions about their experience with violence and abuse in their intimate relationships, including attributions about the

Table I. Mean Raw Scores and Standard Deviation Scores on TSI for Battered Women ($n = 72$)

Scale	Mean	SD	Range
Safety	3.40	1.04	1.43–5.71
Self-trust	3.08	1.05	1.00–5.29
Self-esteem	2.22	.87	1.00–5.11
Self-intimacy	2.81	1.06	1.17–5.71
Other-trust	3.10	1.01	1.00–5.50
Other-esteem	3.15	.76	1.55–5.27
Other-intimacy	2.93	1.20	1.00–5.83
Total score	242.54	52.53	127–357

cause of violence, appraisal of past violence, and expectations about future violence. Correlations with TSI subscales varied (see Table II).

In order to determine the extent to which specific cognitions about violence contributed to the explanation of variance in cognitive schemata, multiple correlation coefficients (R) were calculated. Interpretation of R was based on R^2 and beta weights (Kachigan, 1982).

The multiple correlation coefficient between the cognitions about violence and TSI TOTAL was $R = 0.61$. Thus, taken together, the cognitions about violence accounted for 37% of the variance in the total measure of cognitive schema. Multiple correlations for TSI subscales were then examined to determine how specific cognitions contributed to particular cognitive schemata.

Battered women's cognitions about violence explained 28% of the variance in OTHER-ESTEEM ($R = 0.53$), 26% in SAFETY schema ($R = 0.51$), 24% in OTHER-TRUST ($R = 0.49$), and 23% in SELF TRUST ($R = 0.48$). Examination of beta weights suggests that one cognitive variable, expectation of severe violence, accounted for most of the variance in OTHER-ESTEEM, SAFETY, and (along with stable attributions of causation) OTHER-TRUST. Examination of beta weights for SELF-TRUST indicates that expectations of recurrent violence and internal attributions of causation contribute nearly equal amounts of variance, and together account for the largest portion of variance. For all other TSI subscales (e.g., SELF-ESTEEM, SELF-INTIM, OTHER-INTIM), cognitions about violence explained less than 20% of the variance.

Table II. Correlations Between Scores on the TSI and Cognitions about the Violence

Scale	Cognitions about Prior Violence			Expectations of Violence	
	Attribution of Violence		Appraisal Severity of Past Violence ^b (<i>n</i> = 66)	Expectation of Recurrent Violence ^a (<i>n</i> = 66)	Expectation of Severe Violence ^b (<i>n</i> = 66)
	Internal ^a (<i>n</i> = 61)	Stable ^a (<i>n</i> = 61)	Global ^a (<i>n</i> = 61)		
SAFETY Correlation	ns	ns	0.41 ^c	ns	0.48 ^c
SELF-TRUST Correlation	0.30 ^d	0.23 ^c	0.30 ^d	0.28 ^c	ns
SELF-ESTEEM Correlation	0.33 ^d	0.30 ^d	0.22 ^c	0.32 ^d	ns
SELF-INTIMACY Correlation	0.27 ^e	ns	0.20 ^c	ns	ns
OTHER-TRUST Correlation	ns	0.21 ^e	ns	ns	0.32 ^d
OTHER-ESTEEM Correlation	ns	ns	0.20 ^c	ns	0.30 ^d
OTHER-INTIMACY Correlation	0.25 ^e	ns	0.36 ^d	0.29 ^d	0.26 ^c
TOTAL SCALE Correlation	0.27 ^e	0.27 ^e	0.36 ^c	0.25 ^e	0.37 ^c

^a Attribution of Violence Questionnaire items ATB2, ATB3, ATB4, and ATB7, respectively (Dutton, 1992).^b Appraisal of Violence Questionnaire items APV1 and APV5, respectively (Dutton, 1992).^c $p \leq .001$.^d $p \leq .01$.^e $p \leq .05$.Note: The size of *n* varies across variables due to missing data.

Cognitive Schemata and Posttraumatic Stress

TSI TOTAL SCORE was correlated with all measures of post-traumatic stress, including both global (i.e., CR-PTSD, MMPI-PTSD, and GSI) and specific (i.e., IES-I, IES-A) measures (see Table III).

SAFETY was significantly correlated to all measures of post-traumatic stress, except IES-A. All measure of self-schemata (SELF-TRUST, SELF-ESTEEM, and SELF-INTIMACY) scores were significantly correlated with all three global measures of posttraumatic stress (CR-PTSD, MMPI-PTSD, AND GSI) and with IES-I. Only SELF-ESTEEM was correlated with IES-A.

All three measures of other-schemata (OTHER-TRUST, OTHER-ESTEEM, OTHER-INTIMACY) were correlated with all three global measures of post-traumatic stress (CR-PTSD, MMPI-PTSD, GSI) and with IES-I. OTHER-TRUST and OTHER-INTIMACY (but not OTHER-ESTEEM) were also correlated with IES-A.

Cognitive Schemata and Sexual Victimization

MANOVA procedures were employed in a 2×2 design with the occurrence and nonoccurrence of PARTNER SEXUAL ABUSE and CHILDHOOD SEXUAL ABUSE as independent variables and TSI TOTAL scores as dependent variables. The analysis produced nonsignificant differences for both main effects and the interaction effect.

DISCUSSION

Cognitive Schemata and Cognitions About Violence

Significant correlations between the TSI TOTAL score and all measures of the battered women's cognitions about their experience with violence and abuse support the notion that the meaning attached to the traumatic experience by the battered woman influences its psychological impact, specifically negative cognitive schemata (Janoff-Bulman, 1992; McCann and Pearlman, 1990a). These findings are consistent with the literature which suggests that subjective characteristics of interpersonal trauma (c.f. Gidycz and Koss, 1991; Kilpatrick *et al.*, 1985) are related to levels of posttraumatic symptomology or adjustment. Although other studies have demonstrated the relationship between objective measures of traumatic experience (e.g., severity, degree, frequency) and post-traumatic reaction (Follingstad *et al.*, 1991; Kemp *et al.*, 1991), the present results

Table III. Correlations Between Scores on the TSI and Measures of Post-Traumatic Stress

Scale	Global Measures		Specific Measures	
	CR-PTSD ^a (<i>n</i> = 72)	MMPI-PTSD ^b (<i>n</i> = 67)	GSI ^c (<i>n</i> = 72)	IES-A ^d (<i>n</i> = 70) IES-I ^d (<i>n</i> = 70)
SAFETY Correlation	0.59 ^e	0.65 ^e	0.59 ^e	ns 0.38 ^f
SELF-TRUST Correlation	0.55 ^e	0.69 ^e	0.58 ^e	ns 0.34 ^f
SELF-ESTEEM Correlation	0.66 ^e	0.71 ^e	0.67 ^e	0.26 ^f 0.32 ^f
SELF-INTIMACY Correlation	0.27 ^f	0.45 ^e	0.30 ^f	ns 0.27 ^f
OTHER-TRUST Correlation	0.49 ^e	0.59 ^e	0.51 ^e	0.29 ^f 0.43 ^e
OTHER-ESTEEM Correlation	0.42 ^e	0.48 ^e	0.42 ^e	ns 0.28 ^f
OTHER-INTIMACY Correlation	0.63 ^e	0.67 ^e	0.63 ^e	0.25 ^f 0.24 ^g
TOTAL SCORE Correlation	0.73 ^e	0.80 ^e	0.75 ^e	0.31 ^f 0.46 ^e

^a CR-PTSD = PTSD subscale derived from the SCL-90-R (Arata *et al.*, 1991).^b MMPI-derived PTSD subscale (Keane *et al.*, 1984).^c GSI = Global Symptom Index from the SCL-90-R (Derogatis, 1977).^d IES-A = Avoidance subscale; IES-I = Intrusion subscale from the Impact of Event Scale (Horowitz *et al.*, 1979).^e $p \leq .001$.^f $p \leq .01$.^g $p \leq .05$.Note: The size of *n* varies across variables due to missing data.

support the importance of including the subjective meaning attached to the abuse by the battered woman for understanding post-traumatic sequelae, especially cognitive schemata.

Results of the present study suggest that particular cognitive schemata are explained by cognitions about violence differently. Nevertheless, a single cognition, expectation of severe violence, was responsible for explaining a substantial portion of variance accounted for in three of four cognitive schemata (e.g., OTHER-ESTEEM, SAFETY, OTHER-TRUST) for which at least 20% of the variance was explained. Expectation of recurrent violence, regardless of its expected severity, was important for explaining the largest portion of variance accounted for in SELF-TRUST. Thus, of the variables examined in this study, expectation of some form of violence in the future appears to be one of the most important variables for explaining battered women's negative cognitive schemata. These findings suggest the detrimental impact on core beliefs concerning safety, others, and self which are associated with living in a "state of siege" where continued violence is expected and ongoing, a pattern characteristic of domestic violence (Dutton, 1992b; Stark and Flitcraft, 1988). These results underscore the importance of addressing issues concerning physical safety, due not only to the obvious risk of physical harm, but to the psychological damage which may result from living in an environment of chronic victimization (McCann *et al.*, 1988).

Further, results suggest that self-blame, or internal attributions for the cause of prior violence, appears to be important for explaining the battered woman's difficulty in trusting herself, at least when paired with the expectation that violence will recur. The "adaptive" mechanism of some forms of self-blame suggested in the literature (c.f. Janoff-Bulman, 1992) appears not to operate in this sample, as also has been found to be true of rape victims (Koss and Harvey, 1991).

Taken together these results have important implications for clinical intervention with battered women and are consistent with a treatment approach where cognitions have been thought to be an important component of post-traumatic therapy (Foa *et al.*, 1989; Resick and Schnicke, 1992; Solomon *et al.*, 1992). More specifically, addressing the attributions battered women make about the cause of prior violence may prove useful for modifying negative core beliefs, thus enabling a more satisfying relationship at least with oneself. Further, it can be argued that effort toward eliminating the risk of continued violence, thus reducing the battered woman's expectation of its continuance, is the most essential first step in post-traumatic therapy with battered women, as well as the most obvious one for the purpose of increasing her safety.

Because of the battered woman's extensive experience with her abusive partner's behavior, understanding her appraisal of the situation is essential. "Dangerousness" may be considered a complex construct involving not only the occurrence of a given behavior (e.g., hit, shove, punch, point gun), but one's subjective impression of it as well (e.g., attribution of causation of violence, perception of both motivation and inhibitors to violence). While a particular gesture, for example, may not be objectively defined by the casual observer as dangerous, the message of intimidation and danger is quite clear to those who have been forced, through experience, to understand its meaning. In contrast, even the obviously dangerous behavior of pointing a loaded gun is interpreted differently by a battered woman who believes that her partner is willing to pull the trigger versus by the woman who sees the behavior as an attempt to frighten her without any expectation of its going further. These results point clearly to the importance of including subjective measures of the "meaning" of traumatic events in (clinical and research) assessment procedures, not relying solely on objective indicators.

Cognitive Schemata and Post-traumatic Stress

The present study found that for battered women, negative cognitive schemata co-occur with measures of post-traumatic stress, thus providing evidence of construct validity for the TSI as an assessment device for measuring post-traumatic sequelae. Although the hypothesized constellation of "affective, cognitive, and behavioral manifestations (McCann *et al.*, 1988, p. 80)" of cognitive schemata needs further refinement, these results support the hypothesis with regard to a constellation of both general and specific indicators of post-traumatic stress. Further, these findings are consistent with those by Dansky *et al.* (1990) which demonstrated a relationship between psychological distress (measured by SCL-90-R) and both self (i.e., "Negative Self Schemas/Affect") and other (i.e., "Hostile World") schemata. More specifically, results in this study were similar to correlations found in Dansky *et al.*'s (1990) study between GSI (from SCL-9-R) and self ($r = 0.53$) and other ($r = 0.40$) schemata.

Comparison of correlations between GSI and intrusion (IES-I) and avoidance (IES-A) symptoms also suggest consistency across studies (Dansky *et al.*, 1990). In the current study, intrusion symptoms were consistently related to all measures of cognitive schemata, whereas avoidance symptoms were less consistently so. The contrast between the significant correlation between SAFETY and IES-I and the nonsignificant correlation between SAFETY and IES-A suggests that "recollections" of the trauma (i.e., intrusion symptoms), but not the avoidance of it, may function to maintain

generalized fear structures (i.e., negative SAFETY schema) (Creamer *et al.*, 1992; Foa *et al.*, 1991; Foa *et al.*, 1989). The relationship between IES-A and other schemata (i.e., OTHER-TRUST, OTHER-INTIMACY) suggests that high levels of avoidance regarding abuse may not mitigate a negative impact on beliefs about closeness in relationships with others generally, although it appears not to be related to the value or benevolence battered women bestow upon others (i.e., OTHER-ESTEEM).

These results support the notion of examining cognitive schemata as an important component in the constellation of post-traumatic stress reactions among trauma victims (Dansky *et al.*, 1990; Herman, 1992b; Janoff-Bulman, 1992; McCann and Pearlman, 1990a), especially battered women (Dutton, 1992a,b).

Cognitive Schemata and Sexual Victimization

These results suggest that for this sample the occurrence of childhood sexual abuse, sexual assault in the battering relationship, nor their interaction contribute to greater "negative" cognitive schemata for women beyond that which is accounted for by the battering alone. These results are consistent with Kemp *et al.* (1991), who found that battered women with prior abuse and trauma histories (including childhood and adult physical and sexual abuse as well as other traumas) did not differ from those with only a current physically abusive relationship. They are also consistent with Wayland *et al.* (1992), who found that although sexual assault status was significantly associated with overall psychological functioning, it did not predict psychological distress once the effects of physical abuse were removed.

Adequately examining the influence of myriad combinations of current and prior victimization histories is a challenge facing researchers. Further research is needed to sort out the impact of prior victimization, and other traumas, on the constellation of post-traumatic sequelae of domestic violence. These results are needed for the development of effective interventions for subgroups within the population of domestic violence (and other trauma) victims. Further, these results would address concerns raised about mental health services versus those in need of support or education alone.

Limitations

Results of the present study are limited by a number of factors. The sample does not adequately represent women of color nor is it large enough to enable testing for differences between battered women based on ethnicity or socioeconomic status. Further, all subjects in this study were taken

from a population of battered women seeking help from a mental health clinic. Thus, results should be viewed cautiously with regard to their generalization to battered women of various ethnic and socioeconomic groups and to battered women in the general population not seeking help.

Second, larger sample sizes would enable the use of statistical procedures such as path analysis which would address the complex interrelationships between cognitions about violence, cognitive schemata, and post-traumatic stress. The present results can be useful in the development of such models.

Third, the measure of sexual abuse in a battering relationship as a dichotomous measure may lack the sensitivity to detect differences in post-traumatic reactions, if they exist. Variations such as use of physical force (vs. intimidation) to gain sexual compliance, the frequency of occurrence of sexual abuse, and other factors may prove useful in further study. Future research should include these and other more refined measures of the extent to which sexual abuse has occurred.

Finally, the direction of causality between cognitive schemata and other variables (e.g., cognitions about violence, post-traumatic stress, sexual victimization) is unknown based on the current methodology. Prospective studies are needed to determine with greater precision the impact of domestic violence on previously held cognitive schemata. Ethical considerations, however, preclude the prospective examination of the effects of domestic violence without the impact of the research process itself. Even providing referral information constitutes an intervention, a potentially salient social response to domestic violence victims.

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