Attachment, Interpersonal Problems, and Treatment Outcome in Group Therapy for Intimate Partner Violence

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This study examined several types of associations between attachment dimensions, interpersonal problems, and intimate partner violence (IPV) with 49 men who were mandated to treatment for IPV. The main purpose of the study was to examine the degree to which attachment dimensions and interpersonal problems predicted IPV posttreatment variables. Hierarchical multiple regression analyses indicated that (a) pretreatment attachment anxiety and vindictive interpersonal problems predicted posttreatment mild physical abuse and psychological abuse, (b) pretreatment intrusive interpersonal problems predicted posttreatment psychological abuse, and (c) pretreatment attachment avoidance and vindictive interpersonal problems predicted posttreatment total violence severity. Finally, simple regression analysis using pre- to posttreatment residualized gains scores indicated that higher attachment avoidance gain scores (i.e., increasing approaching) predicted lower total violence gain scores.

Keywords: attachment, interpersonal problems, treating partner violent men, intimacy violence

A majority of the clinical research on intimate partner violence (IPV) has focused on the effectiveness of treatment programs in reducing men's partner violence, with a particular emphasis on cognitive-behavioral therapy (CBT) and feminist-based psychoeducation (Babcock, Green, & Robie, 2004; Jones, D'Agostino, Gondolf, & Heckert, 2004). However, modest treatment results (Babcock et al., 2004) and high recidivism rates (15–47%; Gondolf, 1997) have led some researchers to conclude that (a) IPV treatments are lacking and must be improved and (b) little is known about change processes in IPV treatments (Taft, Murphy, King, Musser, & DeDeyn, 2003). A few researchers have begun to examine treatmentrelated relationship variables in addition to the effects of CBT and feminist treatment models (e.g., therapeutic alliance; Taft et al., 2003). The inclusion of relationship variables in IPV research is particularly relevant given emerging treatment models that incorporate elements of psychodynamic therapy that focus on abusers' early and current relationship factors that increase the risk of IPV (Lawson et al., 2001; Sonkin & Dutton, 2003).

Attachment and interpersonal problems are two relationship variables that reflect early caregiver relationships and current interpersonal functioning (Holtzworth-Munroe, Stuart, & Hutchinson, 1997; Horowitz, Rosenberg, & Bartholomew, 1993). Attachment is associated with different types of interpersonal problems (Bartholomew & Horowitz, 1991) and IPV (Holtzworth-Munroe et al., 1997). Furthermore, interpersonal problems are associated with IPV (Murphy & Hoover, 1999).

However, little is know about the relationship between attachment, interpersonal problems, and IPV with clinical samples. Of particular interest in the present study was the degree to which measures of pretreatment attachment dimensions and interpersonal problems predict posttreatment measures of IPV. Although clinicians provide promising anecdotal reports of the importance of pretreatment attachment and interpersonal problems in treating IPV (e.g., Fongy, Target, Gergely, & Jurist, 2002; Sonkin,

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2005), there is no research that addresses the degree to which these variables are related to posttreatment measures of IPV. If these relationships are found, then attachment and interpersonal problems dimensions should receive greater attention in IPV treatment than they currently receive from CBT and feminist psychoeducation models. Such research could provide a better understanding of the underlying relationship variables that contribute to changes in men's use of IPV, which in turn could better inform IPV treatment and improve treatment outcomes.

Attachment

Attachment theory posits that humans are goal directed with basic relational needs to form strong emotional bonds with a predictable attachment figure that provides security, protection, and intimacy (Bowlby, 1988). Depending on their interaction history with attachment figures, children develop various strategies in response to separation and reunion with attachment figures that develop into predictable attachment styles (e.g., secure, avoidant, and anxious-ambivalent; Ainsworth, Blehar, Waters, & Wall, 1978; Main & Solomon, 1986). For example, children who were insecurely attached in infancy exhibit at ages 10–11 and 14–15 more characteristics associated with insecure attachment (e.g., more dependency, less social competency, and lower self-esteem) than did children who were securely attached (Greenberg, 1999; Thompson, 1999). In addition, research indicates that attachment behaviors noted in infants and children are exhibited in adult romantic relationships (Grossman, Grossman, Winter, & Zimmerman, 2002; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). For example, secure adults have a greater likelihood than insecure adults to both seek and provide support to their partners (Fraley & Davis, 1997; Simpson, Rholes, & Nelligan, 1992). Furthermore, adults separating from partners demonstrate both attachment-related protest (e.g., anger) and caregiving behavior (Fraley & Shaver, 1998). Bowlby (1988) believed that while anger is a typical response when an attachment bond is threatened (attachment protest), for an insecure infant or child, it could be a harbinger for IPV in later adult romantic relationships in an

attempt to increase proximity and security with the attachment figure.

Several studies support the linkage between adult IPV and insecure childhood attachment. In a longitudinal study examining developmental antecedents of IPV, Magdol, Moffitt, Caspi, and Silva (1998) found that weak attachments to parents, characterized by little warmth, trust, or positive communication, predicted men's later IPV. Dutton and colleagues (Dutton & Gollant, 1995; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Dutton, Starzomski, & van Ginkel, 1995) found that men who were partner violent reported childhood experiences of direct exposure to interparental violence, rejection by fathers, and insecure attachment to mothers. Furthermore, research indicates that men who perpetrate IPV report more insecure attachment styles (e.g., preoccupied or anxious-ambivalent) with their partners than nonviolent men (Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2003; Waltz, Babcock, Jacobson, & Gottman, 2000). Finally, Holtzworth-Munroe et al. (1997) found that compared with nonviolent nondistressed men, men who were IPV perpetrators reported more avoidance of dependency and more anxiety about abandonment. These studies support the importance of considering attachment patterns in treating IPV.

Dutton (2007) developed a model to explain the relationship between attachment and IPV. He suggests that for insecurely attached intimate partner violent men, anger results from perceived separation or abandonment by their partner or what Bowlby (1973) called "anger born of fear" (p. 289). Men who perpetrate IPV are more likely to experience anxiety about abandonment and thus have exaggerated needs to exert control in intimate relationships as a means of reducing the anxiety (Dutton et al., 1994; Holtzworth-Munroe et al., 1997). Violence is one means to regain contact with and control over the attachment figure and, at least temporarily, prevent the immediate threat of partner abandonment. Research suggests that avoiding abandonment and control have their roots in attachment patterns (Babcock, Jacobson, Gottman, & Yerington, 2000; Waters et al., 2000).

In recent research, the attachment dimensions of anxiety and avoidance have become more prominent than in earlier studies that largely emphasized attachment styles (e.g., Dutton et al., 1994). Focus on attachment dimensions is consistent with an increasing body of research suggesting that the continuous attachment dimensions of anxiety and avoidance best represent adult attachment (Brennan, Clark, & Shaver, 1998; Carver, 1997). For example, McKinley, Pullin, Goodfriend, Pritchard, and Lassiter (2007) found that attachment avoidance was positively correlated with IPV and psychological abuse for male but not for female college students. Furthermore, attachment anxiety but not attachment avoidance was significantly correlated with minor and severe IPV for college women (Spidel, Kendrick, Nicholls, & Dutton, 2007). Finally, Doumas, McKinley, Pearson, and Elgin (2007) examined attachment and IPV with 70 community couples and found that pairing highly attachment anxious women with highly attachment avoidant male partners was associated with both male and female perpetrated IPV.

These more recent studies suggest that attachment avoidance may be particularly relevant to examining men's perpetration of IPV. Furthermore, research has examined attachment dimensions and IPV only as contemporaneous variables. No existing studies have examined attachment dimensions as pretreatment predictors of treatment outcome, which would seem to have particular relevance to successful treatment of IPV given that attachment is positively correlated with IPV prior to treatment.

Interpersonal Problems

Interpersonal problems are among the most frequently reported types of problems in psychotherapy (Horowitz, 2004). They occur as a result of experiences relating to others; typically, they are a significant source of distress. Interpersonal problems are viewed as resulting in part from attachment history (Horowitz et al., 1993), such that early attachment experiences influence a person's internal representations of self and others. If these internal models of self and others are predominately negative, such individuals are at greater risk of developing maladaptive perceptions and expectations of others (Horowitz, 2004), which will be manifested in various interpersonal behaviors and problems (Henry, 1994).

Interpersonal models have evolved from interpersonal theory and describe interpersonal behavior on the basis of two orthogonal dimensions (Horowitz & Vitkus, 1986; Kiesler, 1983). From this perspective, every interpersonal behavior can be depicted along these two dimensions. One dimension is affiliation or nurturance and ranges from hostile behavior to friendly behavior. The other dimension is *power* or dominance and ranges from submissive behavior to dominant behavior. On the basis of circumplex theory, these two dimensions can create a number of polar-opposite interpersonal problems arranged around the circumplex figure. For example, Horowitz and Vitkus (1986) posit that interpersonal problems correspond to eight descriptors: domineering, vindictive, cold, socially avoidant, nonassertive, exploitable, overly nurturant, and intrusive. Applying circumplex theory to these eight descriptors results in four pairs of contrasting interpersonal problems, with each pair located at opposite ends of a continuum arranged around the circumplex: from domineering to nonassertive, cold to overly nurturant, vindictive to exploitable, and intrusive to socially avoidant. Each of the opposite pairs describes specific types of interpersonal problems. For example, problems related to controlling behaviors are classified in the quadrant that reflects dominance.

Existing research indicates that interpersonal problems are associated with both physical and psychological aggression (Murphy & Hoover, 1999; Murphy, Taft, & Eckhardt, 2007). Furthermore, dominant-hostile interpersonal problems (i.e., dominance, intrusiveness, and vindictiveness) mediate the relationship between violence in the family of origin and the initiation of physical aggression by college students in dating relationships (Murphy & Blumenthal, 2000) and are associated with anger and IPV (Murphy et al., 2007). Thus, dominant-hostile interpersonal problems are important for predicting IPV. Although no published studies have examined the degree to which interpersonal problems predict posttreatment IPV, interpersonal problems predicted symptom distress change posttreatment for a community sample receiving psychotherapy (Puschner, Kraft, & Bauer, 2004).

Given the significant relationships between attachment, interpersonal problems, and IPV, it is important to examine the degree to which these pretreatment variables predict posttreatment IPV. If pretreatment attachment and interpersonal

problem dimensions are found to be related to outcome, it would be important to begin addressing these variables early in treatment. Currently, the predominant IPV treatment models (i.e., CBT and feminist psychoeducation) provide little direct attention to attachment or interpersonal problems.

Purpose of the Study

The present study examined several relationships between men's attachment dimensions (i.e., anxiety and avoidance), dominant–hostile interpersonal problems (i.e., dominant, vindictive, and intrusive), and partner-reported IPV over the course of a 17-week CBT/psychodynamic group treatment program. The main purpose of the study was to identify pretreatment attachment and interpersonal problem variables that predicted IPV treatment outcome.

The hypotheses were as follows:

Hypothesis 1: Pretreatment dimensions of attachment (avoidance and anxiety) and dominant-hostile interpersonal problems (dominant, vindictive, and intrusive) will significantly predict posttreatment measures of psychological and physical abuse (mild and severe).

Hypothesis 2: A change in attachment (avoidance and anxiety) will predict a change in total violence severity.

Hypothesis 3: A change in interpersonal problems (dominant, vindictive, and instrusive) will predict a change in total violence severity.

In considering Hypotheses 2 and 3, we wanted to examine the pre- to posttreatment change relationship between the predictor variables and IPV. Instead of examining all three types of aggression, we chose to use a total violence severity score to reduce the number of analyses to minimize experiment-wise error.

Method

Participants

Participants were drawn from a pool of 68 men in a southwestern, midsize city who were mandated to IPV group treatment. Sixteen men were dropped from treatment either after miss-

ing more than two sessions (probation policy) or dropping out. Two men refused consent, and one man's partner refused research consent, leaving 49 who completed treatment and the study. There were no significant differences between completers and noncompleters on any demographic variables addressed in the study. All men had documented histories of partner violence with their spouses or partners as indicated by an arrest report, partner report, or selfreport. Abuse offenses ranged from mild (e.g., pushing or slapping) to severe (e.g., beating up) violence, as well as psychological abuse (e.g., threatened to hit or threw something). Participant demographic information includes the following characteristics: 21 (42.9%) African Americans, 18 (36.7%) Caucasians, 9 (18.4%) Hispanics, and 1 (2%) Native American; ages ranged from 20 to 54 years (M = 31.73, SD = 8.83), and years of education ranged from 9 to 14 (M = 11.1, SD = 0.69).

The Treatment Model

The treatment groups were led by a male and female cotherapist team and were composed of 8–10 men per group. Seventeen weekly sessions were held, with each lasting 2.5 hr. The treatment model employed in the current study was an integrated CBT and psychodynamic approach that included feminist-based elements concerning attitudes toward women and the power differential between men and women (see Lawson et al., 2001, for a detailed description of the model). This treatment model addresses several levels of nested environmental contexts (nested ecological theory) derived from the work of Bronfenbrenner (1979; i.e., microsystem, mesosystem, exosystem, and macrosystem) and Belsky (1980; individual/ developmental). The CBT and psychodynamic elements emphasize individual (e.g., personality/ individual psychopathology) and microsystem (e.g., couple interaction) levels, and the feminist elements place greater emphasis on the macrosystem (e.g., cultural views of gender, sociopolitical influences) level.

Treatment employed standard CBT procedures (Murphy & Eckhardt, 2005; Wexler, 2000) that included focus on motivation to change, commitment to nonviolence, implementing time-out procedures, exploring and updating attitudes toward women and violence,

responsibility plans, anger and stress management, relaxation training, cognitive restructuring, communication skills, and appropriate assertiveness. In addition, there was a strong emphasis on building and maintaining a therapeutic alliance as a basis for change (Taft et al., 2003). The CBT model included both didactic and experiential components, with the men learning specific self-management skills as well as processing their views and behaviors about partner violence within the group. Skills acquisition included practice in sessions as well as between-sessions homework assignments.

The psychodynamic component of the model included elements suggested by Bowlby (1988) and time-limited dynamic psychotherapy (Strupp & Binder, 1984). This component of treatment emphasizes interpersonal relationships as a critical avenue to change attachmentbased, maladaptive relational patterns learned in the men's families of origin. Treatment focused on the expression of these ingrained patterns, often associated with consistent patterns of interpersonal problems, in the treatment group. The interpersonal transactions that constitute a cyclical maladaptive pattern were explored and addressed (Levenson, 1995; Strupp & Binder, 1984). The aim of this aspect of treatment was for each man to have a different affective and interpersonal experience from the one associated with their cyclical maladaptive pattern leading to partner violence, preferably one that was more positive and prosocial. The group provides multiple opportunities with a variety of people for experiential disconfirmation of a client's maladaptive interactional pattern followed by experiential repair within a therapeutic relationship. Finally, the men explored various ways to apply these new experiences outside treatment, especially with their partners.

The psychodynamic aspects of treatment are flexibility integrated into the more content-based elements of CBT. The integration of these approaches addresses societal influences, cognitive and behavioral precipitants, and ingrained maladaptive relational dynamics that contribute to partner abuse. The participants are held accountable for their violence and are assisted in changing relevant maladaptive thoughts and behaviors that support partner violence. Although limited, some research provides preliminary evidence for the effectiveness of an integrated CBT and psychodyanamic approach in reducing

IPV for men (Lawson et al., 2001; Lawson, Barnes, Madkins, & Francios-Lamothe, 2006).

Therapists

Six doctoral students (four Caucasians, one Hispanic, and one African American; two men and four women) in a PhD counseling psychology program conducted seven separate groups. The groups were coled by a man and woman who had been members of the domestic violence research team for at least 1 year before coleading groups. All group leaders received year-long didactic training based on a manual that detailed session activities along with experiential training with the treatment model. During the last 4 months of the year, they sat in session with an experienced group leader and were allowed to gradually assume a coleadership position in the group. Group leaders were participants in supervision and training sessions provided by licensed psychologists.

Measures

The Adult Attachment Scale (AAS; Collins & Read, 1990) was used to measure attachment dimensions. The AAS was developed by deconstructing Hazan and Shaver's (1987) threeparagraph descriptions that identified three attachment styles (i.e., secure, anxiousambivalent, and avoidant) into 21 items. These items were factor analyzed, resulting in 18 viable items (six for each scale), producing three underlying attachment dimensions: (a) close measures the extent to which a person is comfortable with closeness and intimacy, (b) depend measures the extent to which a person is comfortable depending on others and believes that people can be relied on when needed, and (c) anxiety measures the extent to which a person is worried about being rejected and abandoned. Higher scores (from 1 = not at allcharacteristic of me to 5 = very characteristic of me) indicate increasing comfort with closeness, comfort depending on others, and increasing anxiety about being rejected or abandoned. The participants responded to the AAS items on the basis of their perspective of romantic relationships.

The AAS was chosen over the more widely used Experiences in Close Relationships Scale (ECR; Brennan et al., 1998) because the

AAS has been used in research with male partner abuses (e.g., Holtzworth-Munroe et al., 1997; Waltz et al., 2000). To date, the ECR has not been used with intimacy violence research. Furthermore, the AAS has fewer items than the ECR (18 items vs. 36 items), which increases the probability that the men will complete the instrument. Completion of the instruments is often a challenge with this population. Both instruments measure the same attachment dimensions, and both are considered valid measures.

Test–retest reliability (2-month interval) with a sample of college students was .68 for close, .71 for depend, and .52 for anxiety (Collins & Read, 1990). Furthermore, Sperling, Foelsch, and Grace (1996) found convergent validity of the AAS with several measures of attachment (e.g., Attachment Style Measure, Hazan-Shaver Attachment Self-Report, and Anxious Romantic Attachment Scale) with a sample of college students. Collins and Read (1990) found the following average alpha coefficients based on three separate samples: close, .80; depend, .79; and anxiety, .84. Alpha coefficients for the present study were close, .74; depend, .76; and anxiety, .81. Collins (1996) holds that the Close and Depend scales can be combined to reflect the avoidance (vs. approach) dimension of attachment. Collins found the Close and Depend scales to be highly correlated (r = .53 and r =.57 with present study), and both scales were negatively correlated with anxiety (r = -.34)and r = -.46, respectively; r = -.24 and r =-.30, respectively, in the present study). The avoidance dimension reflects the degree of comfort or discomfort in approaching (or avoiding) others in relationships. Lower scores indicate increasing avoidance in intimate relationships, and higher scores indicate increasing approaching in intimate relationships. This method of combining the AAS scales to form an anxiety and avoidance dimension has been employed in attachment-related studies (e.g., Collins & Feeney, 2000; Lawson et al., 2006). Shaver and Fraley (2004) hold that Collins' two-dimensional measure of anxiety and avoidance derived from the AAS is a viable measure of these two attachment dimensions.

Following Collins (1996), the present study converted the AAS attachment dimensions to two dimensions: anxiety and avoidance, the two most consistent and most widely used attach-

ment dimensions (Brennan et al., 1998; Carver, 1997). Alpha coefficients for the present study were .81 for anxiety and .73 for avoidance.

The frequency of partner abuse was assessed with the 19-item Conflict Tactics Scale (CTS; Straus, 1979). The CTS is the most widely used measure of partner violence in the field. The CTS, rather than the more recently developed CTS-2, was used because the CTS has fewer items (19 items vs. 38 items). We found the CTS-2 to be more difficult to complete on the phone with participants' partners than the shorter CTS. CTS scores were based on the number of incidences of a particular behavior within a category: 1 = once, 2 = twice, 3 = 3-5times, 4 = 6-10 times, 5 = 11-20, 6 = morethan 20, and 0 = never. When using frequencies (e.g., 3-5 or 6-10) rather than categories (e.g., 1, 2, 3, etc.), the middle number in the range is used for analysis (e.g., 4 for 3–5 and 15 for 11–20). We used frequency scores for the analyses. Three types of aggression were assessed (Straus's alpha coefficients followed by present study alphas): (a) psychological aggression (.73 and .76; five items; e.g., insulted, swore, threatened to hit), (b) mild physical aggression (.82 and .75; four items; e.g., pushed, slapped, threw something at partner), and (c) severe physical aggression (.87 and .88; six items; e.g., kicked, hit, and chocked). Four items were not used in the analyses: Three addressed reasoning (e.g., discussed issue calmly), and one item referred to "crying." Concurrent validity was found between college students and their parents' report of violence committed by parents, with correlations on violence being .64 with fathers and .33 with mothers (Bulcroft & Straus, 1975, as cited in Straus, 1979). Finally, evidence supports both the content and construct validity of the CTS (Straus, 1979, 1990).

A severity weighted scale (CTS total violence severity) was computed that takes into account both the severity of the violence (mild to severe) and the frequency of violence (Straus & Gelles, 1990). The weighted scale considers the injury-producing potential of each violent act by applying a larger weighted multiplier with increasingly more severe types of partner violence (Straus & Gelles, 1990). The severity weighted scale is a result of multiplying the frequency of the violent act reported by the following weights. Minor violence (e.g., threw

something at her; pushed, grabbed, or shoved) was unweighted, that is, it has a weight of 1. The weights for the remaining types of partner violence were kick, bit, punch \times 2; hit with an object \times 3; beat up, choked, burned, scalded \times 5; threatened with a knife or gun \times 6; used a knife or gun \times 8 (Straus & Gelles, 1990). The coefficient alpha for the CTS total violence severity scale was .85 in the present study.

Both the men in treatment as well as their partners completed the CTS. However, the analysis included only the partners' CTS scores to minimize underreporting bias by the male participants.

Interpersonal functioning was assessed with the 32-item short form of the Inventory of Interpersonal Problems (IIP-SC; Soldz, Budman, Demby, & Merry, 1995). The IIP-SC includes eight subscales: Dominant, Vindictive, Overly Cold, Socially Avoidant, Nonassertive, Exploitable, Overly Nurturant, and Intrusive. Higher scores indicate increasing distress experienced with a particular interpersonal problem. Internal consistency for the eight subscales in an outpatient sample (Soldz et al., 1995) ranged from .69 to .89. In the present study, coefficient alphas for the eight subscales ranged from .68 to .84 and .94 for the total score. Soldz et al. (1995) determined that test-retest reliabilities ranged from .61 to .79 across the eight subscales with an outpatient sample. Furthermore, the IIP-SC was highly correlated with the original longer version of the IIP (r = .91 to .94 across the eight subscales). As noted above, only the dominanthostile interpersonal problems scales (i.e., Dominant, Vindictive, and Intrusive) were used in the analysis. This was due to their consistent association with intimate partner violence (Murphy & Blumenthal, 2000; Murphy et al., 2007).

Finally, all the men completed a demographic questionnaire.

Procedure

All men signed a consent form that provided details of the study (approved by a university institutional research board), including their choice not to provide data for the study, although they were required to participate in the treatment. The form also included consent to contact their partners. The men were administered the AAS, CTS, and IIP-SC at pre- and posttreatment. Partners were contacted by phone and responded to the CTS on the basis of their participating partner's behavior. With regard to the CTS, only partners' pre- and post-CTS scores were used in the study.

Results

Descriptive Data

Before the primary analyses were conducted, we checked the data for normality, linearity, and multicolinearity. No violations of these assumptions were detected. Pretreatment intercorrelations for all variables are presented in Table 1, and means and standard deviations for all variables are presented in Table 2.

Table 1	
Pretreatment Intercorrelations of All	Variables

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Variable	1	2	3	4	5	6	7	8
1. CTS-T								
2. CTS-M	.60**							
3. CTS-S	.87**	.75**						
4. CTS-P	.45**	.70**	.58**					
5. AAS-An	.18	.10	.15	.23				
6. AAS-Av	.15	.11	06	.00	25			
7. Dominant	.23	.36*	.55**	.37*	04	.08		
8. Vindictive	.04	13	.31*	.11	.15	28*	.72**	
9. Intrusive	.03	.10	.40**	.23	.29*	.04	.53**	.38*

Note. CTS-T = Conflict Tactics Scale—Total violence severity; CTS-M = Conflict Tactics Scale—Mild physical violence; CTS-S = Conflicts Tactics Scale—Severe physical violence; CTS-P = Conflict Tactics Scale—Psychological abuse; AAS-An = Adult Attachment Scale—Anxiety; AAS-Av = Adult Attachment Scale—Avoidance. For the AAS-Av scale, lower scores indicate more avoidance, and higher scores indicate more approaching in intimate relationships. $^*p < .05$. $^{**}p < .01$.

Table 2
Group Means and Standard Deviations for Preand Posttreatment

	Pretre	atment	Posttreatment	
Measure	M	SD	M	SD
Conflict Tactics Scales				
Total violence severity	46.00	37.44	13.85	19.58
Mild violence	7.25	12.70	3.39	6.22
Severe violence	6.00	13.42	3.34	8.58
Psychological abuse	23.53	24.14	20.00	17.47
Adult Attachment Scale				
Anxiety	2.35	.65	2.00	.62
Avoidance	2.88	.82	3.70	.55
Inventory of Interpersonal Problems				
Dominant	2.80	1.40	2.15	1.20
Vindictive	2.85	1.43	2.14	1.42
Intrusive	2.85	1.68	2.18	1.40

Note. For the Avoidance scale, lower scores indicate more avoidance, and higher scores indicate more approaching in intimate relationships.

Primary Analyses

Three hierarchical multiple regression analyses were conducted to explore the first hypothesis: Pretreatment dimensions of attachment (avoidance and anxiety) and dominant-hostile interpersonal problems (dominant, vindictive, and intrusive) will significantly predict posttreatment measures of psychological and physical abuse (mild and severe). In each of the three analyses, posttreatment scores for each of the CTS subscales served as the criterion variable (i.e., psychological abuse, mild physical violence, and severe physical violence; see Table 3). Pretreatment scores for the respective posttreatment criterion violence variables were entered as covariates in the first step. In the second step, we entered a block of five pretreatment variables consisting of the two adult attachment variables (AAS anxiety and avoidance) and the three dominant-hostile interpersonal problems subscales (IIP-SC Dominant, Vindictive, and Intrusive scales).

In all three regression analyses, the amount of variance explained by the regression equation in Step 1 and Step 2 differed significantly from zero, with a statistically significant increase in explained variance between the two steps (see Table 3). In the first regression analysis, after Step 2, with all independent variables in the equation, $R^2 = .33$, F(6, 42) = 3.40, p < .01, there was

a significant increase in explained variance between the two steps ($\Delta R^2 = .23$; see Table 3). At Step 2, attachment anxiety ($sr^2 = .11$) and vindictive ($sr^2 = .09$) and intrusive ($sr^2 = .07$) interpersonal problems were significant predictors of posttreatment psychological abuse. Higher scores on pretreatment attachment anxiety and vindictive and intrusive interpersonal problems were associated with higher scores on postreatment psychological abuse.

In the second analysis, after Step 2, with all independent variables in the equation, $R^2 = .32$, F(6,42) = 3.25, p < .01, there was a significant increase in explained variance between the two steps ($\Delta R^2 = .21$; see Table 3). At Step 2, attachment anxiety ($sr^2 = .09$) and vindictive ($sr^2 = .08$) interpersonal problems were significant predictors of posttreatment mild physical abuse. Higher scores on pretreatment attachment anxiety and vindictive interpersonal problems were associated with higher scores on posttreatment mild violence.

In the third analysis, after Step 2, with all independent variables in the equation, $R^2 = .31$, F(6,42) = 3.10, p < .01, there was a significant increase in explained variance between the two steps ($\Delta R^2 = .23$; see Table 3). At Step 2, attachment avoidance ($sr^2 = .08$) and vindictive interpersonal problems ($sr^2 = .10$) were significant predictors of posttreatment severe physical abuse. Higher scores on pretreatment attachment avoidance and vindictive interpersonal problems were associated with higher scores on posttreatment severe violence.

Finally, a series of simple regression analyses were conducted to examine Hypotheses 2 and 3. Residual gain scores were computed for total violence severity, attachment avoidance, attachment anxiety, and the three interpersonal problems: dominant, vindictive, and intrusive. A residualized gain score is calculated by first computing a gain score (e.g., posttreatment attachment avoidance minus pretreatment attachment avoidance) and then performing a regression with the gain score as the criterion variable and the pretreatment score (e.g., pretreatment attachment avoidance) as the predictor variable. From this regression, the residuals are saved, and these residuals become the adjusted gain scores. The rationale is to create gain (change) scores that are adjusted for pretreatment level of functioning.

Table 3
Hierarchical Multiple Regression Using Pretreatment Attachment and Interpersonal Problems Variables to Predict Psychological Abuse and Physical Violence (Mild and Severe)

Step and variable	B	β	sr^2	ΔR^2	R^2
	Criterion variable: Po	osttreatment CTS—P	sychological abuse	e	
Step 1					.10*
Pre psych abuse	0.25	.31*	.10		
Step 2				.23*	.33*
Pre psych abuse	0.23	.28*	.06		
Anxiety	9.23	.32*	.11		
Avoidance	3.12	.10	.00		
Dominant	-0.61	04	.00		
Vindictive	5.41	.40*	.09		
Intrusive	-3.21	.30*	.07		
(Criterion variable: Pos	ttreatment CTS—Mi	ld physical violen	ce	
Step 1					.12*
Pre mild violence	0.16	.33*	.11		
Step 2				.21*	.32*
Pre mild violence	0.17	.34*	.10		
Anxiety	2.64	.28*	.09		
Avoidance	0.89	.08	.01		
Dominant	0.60	.10	.01		
Vindictive	2.13	.32*	.08		
Intrusive	-0.71	15	.02		
C	riterion variable: Post	treatment CTS—Sev	ere physical viole	nce	
Step 1					.09*
Pre severe violence	0.19	.28*	.08		
Step 2				.23*	.31*
Pre severe violence	0.21	.31*	.08		
Anxiety	2.74	.19	.02		
Avoidance	4.40	.28*	.08		
Dominant	2.10	.20	.03		
Vindictive	3.22	.32*	.10		
Intrusive	-0.62	09	.00		

Note. CTS = Conflict Tactics Scale; Pre psych abuse = pretreatment CTS psychological abuse; Pre mild violence = pretreatment CTS mild violence; Pre severe violence = pretreatment CTS severe violence. For the Avoidance scale, lower scores indicate more avoidance, and higher scores indicate more approaching in intimate relationships. p < .05. ** p < .05.

In the first analysis for Hypothesis 2, the residualized gain score for attachment anxiety was the predictor variable, and the residualized gain score for total violence severity score was the criterion variable. The prediction model was not significant, $R^2 = .01$, F(1, 47) = 0.24, p > .05. In second analyses, the residualized gain score for attachment avoidance was the predictor variable, and the residualized gain score for total violence severity was the criterion variable. The prediction model was significant, indicating that a residual gain in attachment avoidance predicted posttreatment total violence severity, $R^2 = .10$, F(1, 47) = 4.32, p = .03, $\beta = -.30$. Higher attachment avoidance

gain scores (i.e., increasing approaching) were associated with lower total violence gain scores.

In the second set of analyses for Hypothesis 3, the residulized gain score for each interpersonal problem scale was the predictor variable, and the residualized gain score for the total violence severity score was the criterion variable. The prediction model was not significant for either the Intrusive scale, $R^2 = .05$, F(1, 47) = 2.0, p > .05, or the Vindictive scale, $R^2 = .02$, F(1, 47) = 0.81, p > .05. The prediction model was significant for the Dominant scale, $R^2 = .10$, F(1, 47) = 4.50, p = .04, p = .32, indicating that the residual gain in dominant interpersonal problems predicted total

violence severity. Lower dominance gain scores (i.e., decreasing dominance) were associated with lower total violence gain scores.

Discussion

The results indicated a number of modest but significant relationships between pretreatment attachment and interpersonal problem dimensions and posttreatment IPV. With respect to the first hypothesis, attachment anxiety and vindictive interpersonal problems scores predicted higher scores on psychological abuse and mild physical violence at posttreatment. In addition, intrusive interpersonal problems scores predicted higher psychological abuse. With respect to attachment, many hold that attachment anxiety for some men leads to increased fear of loneliness and fear of losing the partner, which ultimately lead to an attempt to control the female partner, particularly if she is perceived as moving away from or leaving her male partner (Dutton, 2007; Follingstad, Bradley, Helff, & Laughlin, 2002). Men who experience attachment anxiety, unlike attachment avoidance, are more prone to increase proximity to intimate others to prevent abandonment and to reduce their anxiety (Dutton et al., 1994). Furthermore, the vindictive interpersonal problem theme that "I want to get revenge against people too much" in addition to a fear of rejection and abandonment (attachment anxiety) may trigger frustration that leads to anger and, if prolonged, it may precipitate Bowlby's (1973) "anger born of fear" (p. 289). If the partner's behavior is not perceived as reassuring, the man's increased anxiety level would tend to intensify, leading to more extreme means of maintaining contact and attachment protest, such as mild violence or psychological abuse. Finally, the intrusive interpersonal problem theme related to psychological abuse (i.e., "I open up to people too much" or "It's hard for me to keep things from other people") would seem to support the use of verbal abuse, which is a variant of psychological abuse. Partner abusive men with intrusive interpersonal problems would likely have difficulty keeping their thoughts and feelings to themselves, particularly anger and fear.

The predictors for severe violence varied somewhat from those of psychological abuse and mild violence. Attachment avoidance and vindictive interpersonal problems scores predicted higher posttreatment severe violence. Both scales indicate a theme of discomfort and conflict with people, especially in intimacydemanding situations. The positive association between attachment avoidance and severe violence indicates that lower avoidance (higher scores indicate more comfort approaching others) was associated with higher severe violence. With the mean for this analysis being a little above the midpoint on a 5-point scale (M = 3.3), avoidance is in the moderate range. Perhaps with our sample of men, a moderate range of attachment avoidance (i.e., leaning toward approaching) increases the tendency toward engagement by an intimate partner as compared with greater attachment avoidance (lower scores) that might lead to more intense disengagement from a partner. Furthermore, when accompanied by the interpersonal problem of vindictiveness, it likely increases the possibility of severe violence in an attempt to get revenge toward the partner. Perhaps the men engaging in more severe forms of partner violence possess characteristics similar to the generally violent antisocial batterers identified by Holtzworth-Munroe and colleagues (Holtzworth-Munroe & Stuart, 1994; Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000). Such men tend to use the most severe forms of violence, have hostile attitudes toward women, and are often avoidant in attachment style.

However, the above explanation does not address why different models predicted different types of IPV. A partial explanation may be related to the differences between the two attachment dimensions. Some conflict in close relationship research suggests that during conflict, people more prone to attachment anxiety tend toward engagement and hyperactivation of the attachment system in order to avoid abandonment (Kobak & Duemmler, 1994; Simpson, Rholes, & Phillips, 1996). Conversely, individuals who are more prone toward attachment avoidance tend to deactivate the attachment system and disengage in order to maintain independence, reflecting the belief that others will be unavailable. During conflict, such individuals may experience pressure from their partners to remain engaged in response to their attempts to disengage (Pietromonaco, Greenwood, & Barrett, 2004). Christensen and Heavey (1990) refer to this dynamic as demand-withdrawal,

with women most often demanding and men most often withdrawing. If this literature were applicable to our sample, for some men with attachment avoidance, pursuance by a partner may be experienced as an aversive dynamic, leading to more extreme behavior, such as severe violence to terminate the pursuance (demand). Conversely, men with attachment anxiety would have a different goal in a conflict: to stay connected, which may temper the use of severe violence but not mild violence and psychological abuse. The addition of the respective interpersonal problem themes with each attachment dimension would add valence in predicting IPV.

The last two hypotheses examined whether a change in attachment (anxiety and avoidance) and interpersonal problems (dominant, vindictive, and intrusive) predicted a change in total violence severity. A change in attachment avoidance predicted a significant reduction in total violence severity outcome. These results provide the clearest support for the effects of a healthy change in attachment (less avoidance) being associated with a reduction in total violence severity. Results suggest that becoming more comfortable being close to and depending on a partner (approaching) is associated with a reduction in the frequency of total violence severity. On the basis of the pre- and posttreatment means, it appears that a modest increase in approaching others is associated with a notable reduction in total violence severity. This result is consistent with most attachment research with nonclinical samples, suggesting that no or less IPV is associated with more comfort with closeness and depending on others (lower avoidance; Holtzworth-Munroe et al., 1997; Waltz et al., 2000). It is possible that many of these men learned to activate the attachment system over the course of treatment, which enhanced relating to a partner and, as a result, reduced total violence severity. Future research will be necessary to empirically examine this explanation. Attachment anxiety was not a significant predictor in this model.

In addition, a reduction in dominant interpersonal problems predicted a decrease in total violence severity. An association between dominant interpersonal problems and IPV is consistent with previous research (Murphy & Blumenthal, 2000; Murphy et al., 2007). However, the current results go beyond previous research

by indicating that a small reduction in dominant interpersonal problems is strongly associated with a substantial reduction in the frequency of total violence severity. Combined with the association between attachment avoidance and violence severity, these results have clear implications for treatment. Small decreases in attachment avoidance and dominant interpersonal problems in treatment may result in substantial reductions in the frequency of IPV.

Together, these results suggest the importance of therapists' attending to attachment and interpersonal problems in treating intimate partner violent men. These results provide a basis for more focused conceptualization and interventions in the initial stages of treatment. For example, awareness of the differential influence of each combination of attachment and interpersonal problems could provide a more precise focus in group therapy when addressing differences between severe violence on one hand and mild violence and psychological abuse on the other. Moreover, a reduction in attachment avoidance and dominant interpersonal problems provided the most direct evidence of a means to reduce total violence severity. Enhancing comfort with closeness and depending (approaching) on others would seem to be a critical goal of treatment along with teaching the men skills to reduce dominant interpersonal problems. At least with this sample of men, such changes are associated with a moderate reduction in total violence severity, which translates into a reduction or elimination of slapping, pushing, kicking, hitting with a fist, and beating up behavior toward the partner (as reported by the partner).

Limitations

Limitations of this study include a modest sample size that may have provided insufficient power to identify all the important relationships related to outcome. In addition, the interdependent nature of the groups increases the possibility of nonindependence, and thus increases the chance of a Type I error. Furthermore, given the population, it is possible that participants provided socially desirable responses on the self-report measures of attachment and interpersonal problems. An interview format (e.g., Adult Attachment Interview) in addition to the self-report measures might provide different results.

This would point to the need for multiple methods of data collection.

A final issue relates to the statistical results. The effect sizes were modest for the individual predictor scales in all analyses. However, we did not make corrections for an experimentwise Type I error in order to highlight the modest though important differences that were found. Thus, these results should be considered with this caveat in mind. As such, the results may indicate the relatively moderate effect attachment and interpersonal problems actually have on IPV, or other factors may be involved that were not included in the analyses. For example, some literature would suggest that sociopolitical variables such as attitudes toward women and traditional masculine orientation might mediate or moderate relationship variables in predicting IPV (Moore & Stuart, 2005; White & Kowalski, 1998). It will be important to consider such possibilities in future research.

Future research might include attachment and interpersonal problems data from partners. This would make it possible to examine more fully interpersonal theory with the men and their partners. Finally, although the sample was relatively small, the ethnically diverse make up of the participants increases the generalizability of the findings to a wider group of male participants. However, these results may be less relevant to female offenders.

Conclusions

The current study extends prior knowledge about attachment and interpersonal problems with IPV beyond descriptive studies with contemporaneous variables to predicting clinical outcomes. Given the severe consequences of IPV, these results support the need for clinicians to focus on attachment patterns and interpersonal problems in their clinical work. Finally, a clinical focus on attachment and interpersonal problems is viewed as augmenting rather than replacing existing CBT and psychoeducational (e.g., feminist-based) interventions.

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