

Regular article

Behavioral couples therapy for drug-abusing patients: effects on partner violence

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Abstract

Using data from a previous investigation (Fals-Stewart, Birchler, & O'Farrell, 1996), the purpose of the present study was to examine the effect of Behavioral Couples Therapy (BCT) on the prevalence of partner violence among married or cohabiting substance-abusing men ($N = 80$). Participants were randomly assigned to receive either BCT or individual-based treatment (IBT). The proportion of couples who engaged in male-to-female physical aggression was not different during the year before treatment for dyads in BCT ($n = 17$, 43%) and IBT ($n = 19$, 48%). However, a smaller proportion of couples in the BCT condition reported male-to-female physical aggression during the year after treatment ($n = 7$, 18%) than those in the IBT condition ($n = 17$, 43%). Dyadic adjustment, frequency of heavy drinking, and frequency of drug use during the year after treatment mediated the relationship between type of treatment and the prevalence of male-to-female physical aggression. © 2002 Elsevier Science Inc. All rights reserved.

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1. Introduction

Intimate partner violence (IPV) is a significant public health problem in the United States; based on data from nationally representative surveys, it is estimated that 8.7 million couples experience an incident of physical violence from within the dyad each year (Straus & Gelles, 1990). Additionally, a recent survey of U.S. couples indicated more than 1 in 5 experienced at least one episode of interpartner violence during the previous year (Schafer, Caetano, & Clark, 1998).

Several converging lines of evidence strongly suggest consumption of alcohol and use of other psychoactive substances are associated with greater risk for IPV. For example, Murphy and O'Farrell (1994) found more than

50% of men entering alcoholism treatment had been violent toward a female partner in the previous year. Fals-Stewart (in press) examined the likelihood of partner physical aggression on days of male partners' alcohol consumption, during a 15-month period, for men entering a domestic violence treatment program and domestically violent men entering an alcoholism treatment program. For men entering the domestic violence treatment program, the odds of any male-to-female physical aggression were more than 8 times higher on days when men drank than on days of no alcohol consumption. Men entering the alcoholism treatment program were more than 11 times more likely to engage in male-to-female physical aggression on days when men drank versus days of no drinking. Using data from 2033 women currently in a heterosexual relationship taken from a national family violence survey, Kantor and Straus (1989) found the most important variable that distinguished between women who had been victims of their male partners' violence and those who had not been victimized was male partners' drug use. Schafer, Birchler, and Fals-

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Stewart (1994) found that, among couples in which the male partners were recovering from polysubstance dependence, more than 80% reported at least one episode of partner violence during the previous 12 months.

Given the high prevalence of IPV among couples in which partners misuse alcohol and other psychoactive drugs, some attention has turned to the effect of substance abuse treatment on physical aggression in these relationships. Because there is an increased likelihood of partner physical aggression not only when there is substance use, but also in the context of poor communication and generally negative partner interaction (e.g., Cascardi & Vivian, 1995; Rosenbaum & Maiuro, 1989), which are commonly observed in substance-abusing couples (Fals-Stewart & Birchler, 1998), treatments that address both alcohol and drug misuse and relationship problems would appear to be very promising candidates to reduce IPV. An intervention designed to reduce substance abuse and relationship problems concurrently is Behavioral Couples Therapy (BCT) (O'Farrell & Fals-Stewart, 2000). Findings from multiple studies over the last 2 decades indicate BCT is associated with positive outcomes for alcoholic couples, both in terms of reduced drinking and improved relationship adjustment (e.g., McCrady, Stout, Noel, Abrams, & Nelson, 1991; O'Farrell, Cutter, Choquette, Floyd, & Bayog, 1992). As with alcoholic dyads, many of the couple relationships in which one or both partners primarily ingest psychoactive substances other than alcohol are also significantly distressed (Fals-Stewart, Birchler, & O'Farrell, 1999). In several recent investigations (e.g., Fals-Stewart et al., 1996; Fals-Stewart, O'Farrell, & Birchler, 2001), substance-abusing male patients and their intimate female partners who received BCT reported fewer days of drug use, longer periods of abstinence, fewer drug-related arrests, fewer drug-related hospitalizations, and higher relationship satisfaction through 12-month follow-up than patients receiving individual-based treatment (IBT) (e.g., group therapy, individual counseling). Very similar findings also have been found with married or cohabiting substance-abusing female patients (Winters, Fals-Stewart, O'Farrell, Birchler, & Kelley, in press).

O'Farrell and colleagues (e.g., O'Farrell & Murphy, 1995; O'Farrell, Van Hutton, & Murphy, 1999) have conducted a series of naturalistic studies examining changes in the prevalence and frequency of interpartner violence before and after alcoholic men and their intimate partners participated in BCT. Findings indicated levels of partner violence were reduced during the first and second year after treatment and, for remitted patients, levels of partner physical aggression returned to levels experienced by demographically matched nonalcoholic couples. Unfortunately, in these investigations, intimate partner violence was not examined among participants in a "treatment-as-usual" or other control condition, so it is difficult to ascertain the relative effect of BCT on partner physical aggression compared to traditional IBTs more commonly provided in treatment programs (e.g., group and individual counseling, self-help

support groups). Furthermore, these investigations recruited participants who largely or exclusively misused alcohol; participants who primarily abused drugs other than alcohol were not included. Finally, it is not known why IPV is reduced after BCT. Violence reductions may be due to decreased substance use, reduced couple conflicts, or both.

Thus, what is needed are investigations examining the comparative effect of BCT versus other interventions for substance abuse (e.g., "treatment-as-usual," such as individual and group counseling) on partner physical aggression among married or cohabiting men who primarily misuse drugs other than alcohol. In addition, studies need to determine whether changes in the occurrence of partner violence after BCT are mediated by changes in substance use, relationship factors, or both.

Therefore, the purpose of the present investigation was to examine data from a randomized clinical trial, originally conducted to explore the effects of BCT on substance use and relationship outcomes, to determine the effect of BCT on the prevalence of partner violence. Given that BCT for substance abuse was not designed specifically as a treatment for IPV, if we did find that participation in BCT led to a reduction in the prevalence of partner physical aggression, we also sought to investigate factors that might mediate the relationship between BCT and changes in partner aggression, such as relationship adjustment and substance use behavior.

2. Method

2.1. Participants

Data for the present investigation were taken from information provided by participants who engaged in a previously published BCT treatment outcome study conducted by Fals-Stewart et al., (1996). Couples ($N = 80$) in which male partners were entering substance abuse treatment at one of two community-based outpatient clinics located in northeastern U.S. participated in this study. To be included in the investigation, male partners had to (a) be between 20 and 60 years old; (b) be married for at least 1 year or living with a significant other in a stable common-law relationship for at least 2 years; (c) meet abuse or dependence criteria for at least one psychoactive substance use disorder according to the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM-III-R*) (American Psychiatric Association, 1987), with the primary drug of abuse not being alcohol¹; (d) agree to refrain from using psychoactive substances during treatment; and (e) refrain from seeking additional substance abuse treatment

¹ We used a decision tree algorithm to determine husband's primary drug of choice, with decisions based on unweighted combinations of patient self-report data, diagnostic information, prior treatment information, and frequency of use for each drug over the 90 days and 12 months prior to the evaluation (Fals-Stewart, 1996).

except self-help meetings (e.g., Alcoholics Anonymous) for the duration of treatment, unless recommended by their primary individual therapists. Couples were excluded if (a) the female partner met *DSM-III-R* criteria for a psychoactive substance use disorder in the last 6 months; (b) the male or female partner met *DSM-III-R* criteria for an organic mental disorder, schizophrenia, delusional (paranoid) disorder, or other psychotic disorders; or (c) the male or female partner was participating in a methadone maintenance program and were seeking treatment for adjunctive outpatient support. Men entering treatment during the recruitment phase of the study who had male partners ($N = 3$) were eligible for inclusion but chose not to participate.

Typically these male participants were high school educated (years education $M \pm SD = 11.9 \pm 2.4$), were 34.1 (± 7.6) years of age, married 6.1 (± 3.9) years, and had 2.0 (± 1.1) children. Eighty-four percent ($n = 67$) were white, 13% ($n = 10$) were African-American, and the remaining 4% ($n = 3$) were Hispanic. Male partners reported problematic drug and alcohol use for many years (alcohol, 8.4 years ± 4.1 ; opiates, 7.3 years ± 3.4 ; cocaine, 7.0 years ± 3.2 ; cannabis, 7.4 years ± 3.9). The percentage (and number) of the sample who met *DSM-III-R* criteria for current substance dependence on each of the following substances were: cocaine 63% ($n = 50$), alcohol 40% ($n = 32$), opiates 38% ($n = 30$), and cannabis 35% ($n = 28$). Most of the participants were referred by the criminal justice system ($n = 68$, 85%). The remainder were self-referred ($n = 8$, 10%) or referred from other sources (e.g., physician) ($n = 4$, 5%).

Random assignment to treatment conditions was effective. Analysis of variance (ANOVA) for continuous variables and chi-square tests for categorical variables revealed the BCT and IBT groups did not differ significantly ($p < .05$) on any of the variables just described (see Fals-Stewart et al., 1996, for further descriptive information about participants).

2.2. Measures

2.2.1. Male-to-female partner violence

The scale for partner violence consisted of 13 physical abuse items. Nine of these items were taken from the Conflict Tactics Scale (CTS; Form R) (Straus, 1990); the remaining four items describe other physically abusive behaviors. The items on the scale were: (a) physically twisted your partner's arm; (b) pushed, grabbed, or shoved your partner; (c) slapped your partner; (d) physically forced sex on your partner; (e) shaken your partner; (f) thrown or tried to throw your partner bodily; (g) thrown an object at your partner; (h) choked or strangled your partner; (i) kicked, bitten, or hit your partner with a fist; (j) hit or tried to hit your partner with something; (k) beaten up your partner; (l) threatened your partner with a knife or gun; or (m) used a knife or gun on your partner. Both partners in each couple were asked to check which of the behaviors listed had been committed by the male partner toward the female partner during the last year. However, only results based on the

female partners' reports of the male partners' violent acts are reported here because: (a) this minimized missing data; (b) reports by recipients of aggressive relationship behaviors are less contaminated by social desirability response bias than are reports by perpetrators (Dutton & Hemphill, 1992; Riggs, Murphy, & O'Leary, 1989); and (c) generally men under-report their own violent acts relative to what their female partners report about the men (Archer, 1999).²

The measure was administered twice, once at the time when male partners entered treatment and once at the 1-year posttreatment follow-up interview. This partner violence checklist has been used previously in other investigations (e.g., Moffitt et al., 1997).

2.2.2. Substance use

The *Time-Line Follow Back Interview* (TLFB) (Fals-Stewart, O'Farrell, Freitas, McFarlin, & Rutigliano, 2000; Sobell & Sobell, 1996) measures frequency of alcohol and other drug use (i.e., cannabis, cocaine, hallucinogens, inhalants, opiates, phencyclidine, sedative-hypnotics, and stimulants) during a specified time period. We derived four primary substance use outcome measures from the TLFB interview: (a) Percent Days of Alcohol or Drug Use (PDAD) was defined as the percentage of days in the target interval the male patient drank alcohol or consumed illicit psychoactive substances; (b) Percent Days of Alcohol Use (PDA) was operationalized as the percentage of days in which the male partners engaged in any drinking; (c) Percent Days of Heavy Alcohol Use (PDHA) was the percentage of days in which the male partners engaged in heavy drinking (i.e., 6 or more standard drinks on a given day; Sobell & Sobell, 1996); and (d) Percent Days Drug Use (PDD) was the percentage of days male partners used illicit drugs other than alcohol.

At admission, male patients were interviewed concerning their substance use during the 12 months before treatment. At the completion of treatment and quarterly intervals after that for 12 months, male patients provided the same information concerning substance use since last reporting. Female partners were also asked about the male partners' drug and alcohol use at these same intervals; however, only analyses based on male partners' data are reported here. Male partners' and female partners' reports showed substantial agreement on the different measures of substance use frequency during the year before treatment and during the follow-up period (i.e., intraclass correlation coefficients ranged from .73 to .84 and all $ps < .001$).

² Although all male partners completed the partner violence measure at pretreatment, only 33 (83%) completed this assessment at the 1-year posttreatment follow-up. Furthermore, although the analytic results were similar to those reported when data provided by male partners was used, the reported prevalence rates of violence reported by the male partners was lower at pretreatment and at posttreatment when compared to reports of the female partners. Results of analyses using data from the male partners reports are available from the first author upon request.

2.2.3. Relationship adjustment

The *Locke-Wallace Marital Adjustment Test* (MAT) (Locke & Wallace, 1959) is a widely used 15-item self-report measure of general relationship satisfaction with acceptable reliability and validity (Hunt, 1978). Scores can range from 2 to 158, with higher scores indicating higher levels of adjustment. A total score of 100 has been the traditional cutoff point for relationship distress.

On *The Areas of Change Questionnaire* (ACQ) (Weiss, Hops, & Patterson, 1973), each partner notes, on a 7-point scale, how much partner change is desired in 34 common relationship behaviors (e.g., initiating sex, completing household tasks, arguing, etc.). Possible endorsements can vary from -3 (much less often) to $+3$ (much more often). A rating of 0 indicates that no change is desired. Weiss and Birchler (1975) describe the most widely adopted scoring system for the ACQ, which takes into account the degree of agreement and disagreement between the spouses about the desirability of each person changing on each item. The ACQ reliably discriminates between distressed and nondistressed couples (Birchler, Weiss, & Vincent, 1975). The sum of Agreements and Disagreements, referred to as the Total Change Score, was the index used in the present study.

2.3. Procedure

Married and cohabiting male applicants ($N = 154$) entering one of two outpatient substance abuse treatment programs were asked, along with their partners, to participate in an extensive interview to determine eligibility for the study. Fifty-one applicants declined; 17 couples who agreed met one or more of the study's exclusion criteria. The 86 remaining couples were assigned randomly to either BCT or IBT.

2.3.1. IBT condition

The male partner was the only partner in the IBT condition who received treatment provided by the clinics. He met with a therapist for two 60-minute individual therapy sessions and one 90-minute therapy group each week. The goal of this treatment was to help these male partners develop coping skills that would help them remain abstinent from drugs and alcohol. This cognitive-behavioral coping skills training intervention, which was adapted from cognitive-behavioral treatment programs for alcoholism, has been shown to be effective with patients who abuse other drugs (e.g., Carroll, 1998). All of the 10 counselors who provided IBT were state-certified substance abuse counselors. Three of the 43 male partners assigned to IBT attended fewer than half of their scheduled sessions and were excluded from analyses.

2.3.2. BCT condition

Male partners in the BCT condition received one 60-minute weekly individual session and one 90-minute weekly drug abuse counseling therapy group (both of which

emphasized cognitive-behavioral coping skills training as described for male partners in the IBT condition). Additionally, male partners receiving BCT and their female partners met conjointly with a therapist once per week over a 12-week period for 60-minute BCT sessions. The BCT sessions, which are described in greater detail by O'Farrell and Fals-Stewart (2000), were used to: (a) help male partners remain abstinent from drugs and alcohol by reviewing and reinforcing compliance with a verbal contract, negotiated by the partners during the first two BCT sessions, for the partners to discuss and positively support the male partners' sobriety on a daily basis; (b) teach more effective communication skills, such as active listening and expressing feelings directly; and (c) increase positive behavioral exchanges between partners by encouraging them to acknowledge pleasing behaviors and engage in shared recreational activities. One of three master's level therapists conducted BCT sessions. Three of the 43 couples assigned to receive BCT attended fewer than half of their scheduled sessions and were thus excluded from analyses.³

2.3.3. Treatment phases

During the first 4 weeks after admission, male partners in both conditions participated in the *orientation phase* of the program, during which background and medical information was collected. They also began counseling sessions with their group (once weekly) and individual counselor (twice weekly). During the following 12-week *primary treatment phase*, the male partners randomly assigned to the BCT condition began attending conjoint sessions with their partners one time weekly, in addition to one group and one individual session each week. Male partners in the IBT condition continued to attend two individual and one group therapy session each week. Thus, the only difference between the BCT and IBT conditions was that during the 12-week primary treatment phase, the BCT cases received one couples therapy session and one individual session each week, while the IBT cases received two individual sessions each week. For the final 8 weeks, or the *discharge phase*, all male partners were scheduled to meet with their individual therapist for one 60-minute session each week.

In total, male partners in both conditions were scheduled to receive 56 treatment sessions. Male partners' in both conditions were allowed to attend emergency individual counseling sessions at any time. Attendance and treatment satisfaction ratings were high and did not differ for participants in BCT and IBT, indicating the two treatments

³ In the original study, we analyzed data only from those couples who received a credible dose of treatment (i.e., 50% or more of scheduled therapy sessions), which is often referred to as a "per protocol" analysis. In many randomized clinical trials, analyses are conducted on all individuals who are assigned to conditions, which is referred to as an "intent-to-treat" analysis. However, to remain consistent to the findings reported in the Fals-Stewart et al. (1996) report, the present study used data only from those participants whose data were analyzed in the original study.

were equally credible. Fals-Stewart et al. (1996) provide further information on the treatments and other methodological details.

2.3.4. Pretreatment and 1-year follow-up data collection

Upon entering the study, at the completion of the discharge phase of treatment, and every 3 months thereafter for 1 year, male partners and female partners were contacted and interviewed by a research assistant. Participants were queried about the male partners' drug and alcohol use and completed self-report questionnaires pertaining to dyadic adjustment. *Pretreatment* refers to assessment information collected at program entry regarding participants' reports about their behavior during the previous 12 months. *One-year follow-up* refers to both aggregated data collected during assessment interviews conducted every 3 months during the year after treatment was completed and to data collected only at the 1-year posttreatment interview. Participants were informed upon entry into the study that the data they provided would be confidential and would not be available to referral agents or other potentially interested individuals (e.g., probation officers).

We collected the partner violence assessment measure from partners at pretreatment and at the 1-year follow-up assessment. There was some missing data from participants on other measures throughout the follow-up period; values for these missing data points were imputed using ordinary least squares regression estimates. Further information about missing data and methods used to address this problem in the study is available in Fals-Stewart et al. (1996).

3. Results

3.1. Relationship and substance use outcomes of participants who received BCT and those who received IBT

Mean (*SD*) scores on the substance use and the relationship adjustment measures at pretreatment and 1-year follow-up for participants in the BCT and IBT conditions are presented in Table 1. Using one-way ANOVAs, we found no significant differences (all $ps > .05$) at pretreatment between those who participated in the BCT or IBT conditions on any of the measures. However, with the exception of PDA and ACQ, all 1-year follow-up outcomes favored those who received BCT.⁴ This is a brief synopsis of the differences between primary outcomes of BCT and IBT participants; other measures taken at 1-year follow-up not reported here also indicated superior outcomes for those

⁴ In the original study, participants in the BCT condition had lower ACQ scores (indicating better adjustment) than those in the IBT condition at posttreatment and 3-month follow-up. As with all of the relationship adjustment measures, these differences dissipated over the course of the follow-up and, in the present report, are masked as a result of aggregating scores during the posttreatment period.

Table 1

Mean (and standard deviation) scores on substance use and relationship adjustment measures for participants who received behavioral couples therapy and those who received individual-based treatment

Scale and assessment period	BCT	IBT	<i>F</i> (1, 78)
<i>Substance Use</i>			
Percent days alcohol and drug use			
Pretreatment	68.7 (38.6)	71.8 (34.4)	2.02
Posttreatment	19.0 (26.9) ^a	29.7 (26.1) ^a	7.78**
Percent days drug use			
Pretreatment	62.1 (30.1)	61.7 (30.4)	1.37
Posttreatment	16.5 (25.1) ^a	26.1 (24.0) ^a	8.34**
Percent days alcohol use			
Pretreatment	21.7 (46.5)	20.6 (40.7)	1.23
Posttreatment	16.4 (30.3)	22.3 (29.9)	5.12*
Percent days heavy alcohol use			
Pretreatment	17.9 (31.2)	18.3 (33.6)	1.64
Posttreatment	8.4 (19.2) ^a	16.9 (20.4)	10.24**
<i>Relationship Adjustment</i>			
MAT			
Pretreatment	67.5 (20.1)	66.9 (20.8)	1.84
Posttreatment	76.0 (20.4) ^a	69.9 (19.0)	4.37*
ACQ			
Pretreatment	34.4 (10.9)	36.2 (13.0)	1.67
Posttreatment	32.4 (11.9)	37.3 (13.4)	3.91

Note. BCT = Behavioral Couples Therapy; IBT = Individual-Based Treatment.

^a The score is significantly different (i.e., all $ps < .05$) from pretreatment to posttreatment follow-up, using a paired *t* test.

* $p < .05$.

** $p < .01$.

who received BCT (e.g., drug-related hospitalizations, fewer couple separations). For a complete report of the outcomes, see Fals-Stewart et al. (1996).

3.2. Partner violence outcomes

The different types of violent acts and the number and percentage of couples in which the female partners reported the violent act had occurred in the relationship at pretreatment and 1-year follow-up are located in Table 2. At pretreatment, a binary logistic regression revealed the percentage of couples who reported at least one act of male-to-female physical aggression in the BCT condition ($n = 17$, 43%) and in the IBT condition ($n = 19$, 48%) was not significantly different (Model χ^2 [1, $N = 80$] = 0.20, ns). During the 1-year follow-up period, there was a significant reduction in the percentage of couples in the BCT condition who reported male-to-female physical aggression ($n = 7$, 18%) compared to pretreatment (McNemar χ^2 [1, $N = 80$] = 10.00, $p < .01$). However, the percentage of couples in the IBT condition who reported at least one act of male-to-female aggression during the 1-year follow-up period ($n = 17$, 43%) was not significantly different from the percentage of IBT couples who reported violence at pretreatment (McNemar χ^2 [1, $N = 80$] = 2.00, ns). During the 1-year follow-up, a binary logistic regression revealed the percentage of couples in the IBT condition who engaged in male-to-

Table 2

Number (percentage) of couples in which the female partner reported specific violent behaviors by the male partner

	BCT		IBT	
	Pretreatment	1-year posttreatment	Pretreatment	1-year posttreatment
Physically twisted your partner's arm	3 (8)	1 (3)	4 (10)	3 (8)
Pushed, grabbed, or shoved your partner	10 (25)	4 (10)	12 (30)	9 (23)
Slapped your partner	4 (10)	3 (8)	5 (13)	3 (8)
Physically forced sex on your partner	5 (13)	2 (5)	6 (15)	5 (13)
Shaken your partner	8 (20)	2 (5)	9 (23)	9 (23)
Thrown or tried to throw your partner bodily	1 (3)	0 (0)	1 (3)	1 (3)
Thrown an object at your partner	4 (10)	2 (5)	5 (13)	4 (10)
Choked or strangled your partner	0 (0)	0 (0)	0 (0)	0 (0)
Kicked, bitten, or hit your partner with a fist	7 (18)	2 (5)	7 (18)	6 (15)
Hit or tried to hit your partner with something	8 (20)	3 (8)	9 (23)	6 (15)
Beaten up your partner	0 (0)	0 (0)	0 (0)	0 (0)
Threatened your partner with a knife or gun	0 (0)	0 (0)	0 (0)	0 (0)
Used a knife or gun on your partner	0 (0)	0 (0)	0 (0)	0 (0)

Note. BCT = Behavioral Couples Therapy; IBT = Individual-Based Treatment.

female physical aggression was significantly higher than the percentage of couples in the BCT condition who reported at least one act of male-to-female physical aggression (Model $\chi^2 [1, N = 80] = 6.09, p < .05$).

3.3. Mediation analyses

In exploratory analyses, we determined whether or not substance use and relationship adjustment after treatment mediated the relationship between the type of treatment received and the extent of reduction in violence prevalence during the 1-year follow-up period. To demonstrate that one or more of these variables mediate the effect of treatment on the occurrence of male-to-female physical aggression, the following four conditions must be met (Baron & Kenney, 1986): (1) treatment must be associated with the occurrence of male-to-female physical aggression; (2) treatment must be associated with the mediator; (3) the mediator must be associated with the occurrence of male-to-female physical aggression when controlling for treatment condition in the model; and (4) the relationship between treatment and the

occurrence of male-to-female physical aggression must be meaningfully reduced when controlling for the mediator.

The analyses completed thus far have demonstrated that condition 1 (i.e., a significantly smaller proportion of couples in the BCT condition reported episodes of male-to-female physical aggression during the 1-year follow-up period than couples in which male partners received IBT) has been met. Furthermore, condition 2 has been met for many of the variables examined (i.e., PDAD, PDD, PDHD, and MAT scores were significantly different for participants in the two treatment conditions), as shown in Table 2. The analyses to determine whether or not conditions 3 and 4 were met for each potential mediator that met conditions 1 and 2 are summarized in Table 3. PDD, PDHA, and MAT met conditions 3 and 4. More specifically, each of these variables was significantly related to the occurrence of male-to-female physical aggression during the 1-year follow-up period. When each of these variables was entered into the binary logistic regression model, along with treatment condition, as an explanatory variable, the relationship between treatment condition and the occurrence of male-to-

Table 3

Effects of potential mediating variables on the effect of treatment on the occurrence of male-to-female physical aggression

Potential mediating variable	Relationship to the occurrence of male-to-female physical aggression at 1-year posttreatment			Treatment effect after controlling for the potential mediating variable		
	<i>B</i>	<i>SE</i>	Step χ^2 (1, <i>N</i> = 80)	<i>B</i>	<i>SE</i>	Step χ^2 (1, <i>N</i> = 80)
Percent days drug or alcohol use	0.20	0.13	2.36	1.18	0.53	4.96*
Percent days drug use	0.23	0.11	4.59*	1.04	0.59	3.10
Percent days heavy alcohol use	0.25	0.11	4.81*	1.06	0.60	3.19
Marital Adjustment Test	-0.04	0.02	5.05*	1.11	0.66	2.99

Note. For the logistic regression models examining treatment effects, the occurrence of male-to-female physical aggression served as the dependent variable. Each potential mediator was entered into the model as the first, followed by treatment condition. The first Step χ^2 evaluates the significance of the relationship between the mediator and male-to-female physical aggression while controlling for treatment condition. The second Step χ^2 evaluates the significance of the relationship between treatment condition and the occurrence of male-to-female physical aggression after controlling for the mediator. Because the relationship between treatment condition and occurrence of male-to-female physical aggression was significant when no other variables were in the model, a nonsignificant Step χ^2 indicates the relationship was significantly reduced when the mediator was added to the model. These results indicate complete mediation.

female physical aggression was reduced to nonsignificance, indicating complete mediation.

4. Discussion

The results of several studies suggest that, compared to the general population, the prevalence of IPV is significantly elevated in the romantic relationships of married or cohabiting patients seeking substance abuse treatment. Because partner physical aggression is such a pressing and, unfortunately, an all-too-common presenting problem for counselors to address with substance-abusing patients and their families, it becomes increasingly important for researchers and clinicians to explore how different treatments may influence this behavior. If we assume intoxication from alcohol or other drugs and relationship dissatisfaction are important precursors to the occurrence of interpartner violence, interventions that address these issues may serve to reduce aggression between partners where these problems are significant.

4.1. Summary of findings

The purpose of the present investigation was to examine the effect of BCT on the prevalence of male-to-female physical aggression during the year after treatment compared to IBT among married or cohabiting men and their nonsubstance-abusing female partners. We found that, at pretreatment, the reported prevalence of partner violence in the sample was more than 2 times higher than the prevalence observed in the general population. More important, participation in BCT resulted in a significant reduction in the proportion of dyads in which male patients perpetrated violence against their female partners during the year after treatment. Specifically, the prevalence of male-to-female physical aggression was reduced by more than half when compared to levels reported for the year before treatment. In contrast, patients who received IBT did not report a significant reduction in the perpetration of male-to-female physical aggression during the year after treatment compared to levels reported by these couples for the year before treatment. Thus, participation in BCT resulted in a significantly greater reduction in the prevalence of male-to-female physical aggression compared to IBT.

Because reducing partner violence is not a primary goal of BCT, we also explored variables that might mediate the relationship between the type of treatment received and the reduction in violence prevalence. We chose as candidates for mediating variables measures of behaviors that BCT was designed to address, namely, substance use and relationship adjustment. We did find that general relationship adjustment met that criteria for being a mediator. Interestingly, more severe types of substance use behavior, such as frequency of drug use and frequency of heavy drinking, were identified as mediators, whereas frequency of any drinking (which

would include days of light and moderate alcohol consumption) and frequency of drug or alcohol use (which would also include days of light and moderate drinking) were not found to be significant mediators.

However, the findings from the exploratory mediation analyses should be interpreted with caution. Implicit in these models is the assumption that reductions in relationship distress or frequency of substance use resulted in reduced male-to-female physical violence. Because of the timing of the different assessments, it is not possible to determine such a temporal sequence. The information about the prevalence of posttreatment male-to-female physical aggression used was collected only at the 1-year posttreatment assessment. The episodes of violence could have occurred at any point during the follow-up period. Thus, it is plausible the occurrence of violence resulted in reduced relationship satisfaction or increased substance use.

4.2. Relevance of present findings to extant literature

In several respects, this investigation represents an interesting addition to both the substance abuse and partner violence treatment literatures. Although the elevated rates of partner violence among substance-abusing patients have been well-established, with more recent investigations suggesting BCT may reduce intimate partner violence in alcoholic couples, the present study is the first randomized clinical trial to examine the effect of different treatments on partner violence between substance-abusing patients and their partners. The effect of BCT on the prevalence of violence among these drug-abusing patients is consistent with the finding reported by O'Farrell and colleagues on the effect of BCT with alcoholic couples. However, the present study also included a treatment-as-usual control group, which allowed for interpretation of the changes in violence prevalence in a comparative context. Perhaps as important as the finding that participation in BCT reduced violence was that IBT did not have a significant effect on intimate partner violence reduction. Because BCT or other couples or family-based treatments are underutilized in substance-abuse treatment programs (e.g., Fals-Stewart & Birchler, 2001), while IBTs are widely used in community-based settings, it is possible that treatments for substance abuse that do not involve the family are not having a meaningful impact on partner violence among married or cohabiting patients entering these programs.

Moreover, this is one of only a very few randomized trials that has explored the effect of any treatment on IPV (for a review, see Babcock & La Taillade, 2000). Although research on the prevalence and frequency of partner violence has grown dramatically in the last decade (e.g., American Psychological Association, 1996; Crowell & Burgess, 1996), treatment outcome research is less well-developed. Furthermore, although not unprecedented, the present study is one of the few investigations that have explored the effect of conjoint treatment on partner violence.

O’Leary, Heyman, and Neidig (1999) compared conjoint treatment to gender-specific treatment (GST; men’s and women’s groups) for psychological and physical aggression and found neither form of treatment was superior in terms of 1-year posttreatment levels of psychological aggression, moderate physical aggression, nor severe aggression. Brannen and Rubin (1996) compared GST and conjoint approaches with male batterers; both approaches were associated with significant reductions in physical aggression during the 6-month posttreatment follow-up period. Interestingly, for couples with a history of alcohol problems, the couples-based approach was superior. The participants in the Brannen and Rubin study were referred to treatment by the criminal justice system, which is also the case for the majority of participants in the present investigation. Thus, from the findings of the Brannen and Rubin study, coupled with those of the present investigation, it may be best concluded that conjoint-based treatment can be used successfully with batterers, but that this effect may largely occur in the context of surveillance by an agency within the criminal justice system (e.g., probation, parole).

4.3. Treating IPV among substance-abusing patients

Despite the promising findings in this preliminary investigation, we do not advocate the use of BCT as the primary treatment for partner violence among married or cohabiting substance-abusing men or other batterers. Certainly, use of conjoint treatment with domestically violent partners is highly controversial (see O’Leary, 1996; McMahon & Pence, 1996 for a debate of this issue). It should be emphasized that partner physical aggression was not, at the time this investigation was conducted, a focus of the BCT intervention we used with our patients. In fact, our clinical interview with couples during the assessment phase of the investigation included only one question, posed to each partner separately, about IPV (i.e., “Over the last year, have there been any episodes of violence between you and your partner, such as pushing, shoving, hitting, or slapping?”). Given our raised awareness of this highly prevalent behavior among our couples, based on research data we have collected and our clinical experience over the last decade, we now conduct a more extensive and thorough assessment of the frequency and severity of violence and address the violence during BCT sessions (O’Farrell & Murphy, in press). In our ongoing investigations, we do not recommend the use of BCT with substance-abusing couples in instances where the reported violence is significant enough to result in serious injury or intimidation or when participants do not agree to refrain from engaging in partner violence during treatment. In such instances, separate IBTs for both partners may be a more appropriate context for intervention.

For partners reporting episodes of physical violence who are engaged in BCT in our current trials, we now use several simple strategies to reduce violence between the partners.

We ask the partners to enter into a “No Violence Pact,” in which partners agree not to engage in any type of “angry touching” or other physically violent behavior during treatment; adherence to this agreement is expressly evaluated at each meeting. We also advise partners to avoid any type of conflict resolution discussion or argument of any kind when either partner is intoxicated. Partners are also asked to come up with a safety plan if physical violence occurs or if there is fear that it will occur. Use of these strategies was not part of the BCT intervention used for the study reported here; thus, it is not clear if these interventions would further enhance the effect of BCT with respect to partner violence reduction.

The findings of the exploratory mediation analyses indicate that, from the perspective of reductions in partner violence, the active components of BCT on reductions in partner physical aggression are improvements of dyadic adjustment and reductions in drug use and heavy drinking. Thus, it is plausible that any relatively effective treatment that reduces substance use by male partners and improves relationship adjustment, which would include but not be limited to BCT, would serve to reduce male-to-female physical aggression. For example an IBT, not involving the nonsubstance-abusing partner, that is equally effective as BCT in reducing substance use and improving relationship adjustment, may have similar effects on partner violence without including the partner in the treatment. The IBT was not as effective as BCT along these dimensions and thus was not as effective in reducing the prevalence of male-to-female physical aggression.

4.4. Strengths and limitations

Although this study had several important strengths, including random assignment to conditions, long-term follow-up with excellent levels of retention and participation, and use of well-validated and widely used substance use and relationship adjustment measures, several significant limitations of this investigation should also be highlighted. The measure of intimate partner violence we used only assessed the prevalence of violence, not frequency. Thus, couples who engage in male-to-female physical aggression on one occasion during the previous year are not discriminated from those couples in which this behavior is a frequent occurrence. In contrast, the widely used Conflict Tactics Scale (Straus, 1990) measures both prevalence and frequency of different types of violent behaviors. Furthermore, the measure we used is not typically administered in partner violence investigations, making comparisons to findings from other studies more difficult.

The partner violence measure used in the present study also aggregates behavior over a 1-year time frame, making it impossible to examine the temporal course of intimate partner violence over the period. A newly developed partner violence measure, the *Timeline Followback Interview-Spousal Violence (TLFB-SV)* (Fals-Stewart, Birchler, &

Kelley, in press) assesses the daily occurrence of violence over a specified time period, which provides not only information about the prevalence, frequency, and timing of physical aggression, but also allows for the examination of the relationship between daily behaviors, such as substance use and the occurrence of violence.

This investigation focused exclusively on one type of partner violence, namely, male-to-female physical aggression. We did not query participants about episodes of female-to-male aggression. We also did not collect information about female partners' substance use; thus, we cannot determine if there was a relationship between the female partners' drinking or drug use and the prevalence of male-to-female physical aggression. Although couples were excluded if the female partners met diagnostic criteria for an abuse or dependence on alcohol or other illicit drugs, this does not mean that these partners did not engage in sub-threshold use of such substances.

Although the findings from the mediation analyses were interesting, it is important to highlight these were exploratory, *post hoc* analyses, using variables that happened to be collected during the course of the original investigation. Although the variables chosen for evaluation were plausible candidates as mediators, selection of such variables prior to execution of the investigation would have been optimal. Thus, other variables that would be likely and theoretically interesting mediators, such as couples' problem solving strategies and communication skill levels, were not collected as part of this study and thus could not be examined in the mediation analyses.

The participants consisted largely of men who were referred by an agency within the criminal justice system, such as probation, parole, and so forth. It is not clear how such legal entanglements, with their concomitant surveillance of participants, influenced the results obtained. It is possible that our findings would not generalize to a sample of primarily or exclusively voluntary participants.

4.5. Conclusion

In our present randomized clinical trials with BCT, we have followed many of the recommendations noted herein, including the use of a comprehensive assessment of violence. More important, the results of the present investigation and those of other studies by our team have raised our consciousness about the significance of this behavior in our patients and have led to important changes in the way we address partner violence in our couples.

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