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A Randomized Clinical Trial of Motivational Enhancement Therapy for Alcohol Problems in Partner Violent Men

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Abstract

This study examined the efficacy of brief alcohol intervention in the context of community-based treatment for partner violence. In a randomized clinical trial, 228 partner-violent men with hazardous or problem drinking were recruited at three Intimate Partner Violence (IPV) treatment agencies and randomly assigned to receive one of two 4-session alcohol interventions: Motivational Enhancement Therapy (MET: $N = 110$) or Alcohol Education (AE: $N = 118$). After completing alcohol intervention, participants received standard agency counseling services for IPV. Participants completed assessments of alcohol use, drug use, and IPV at pre-treatment, post-alcohol intervention, and quarterly follow-ups for 12 months. At the end of the 4-session alcohol intervention, MET participants displayed greater acknowledgment of problems with alcohol than AE participants ($\text{Partial } \eta^2 = .039, p = .006$). Significant changes from baseline across treatment conditions (at $p < .001$) were observed for percent days of alcohol abstinence [95% empirical CI for Partial $\eta^2 = .226, .296$], heavy drinking [.292, .349], illicit drug use [.096, .156] and partner violence [.282, .334]. No significant condition differences (treatment by time interactions) were found for alcohol abstinence [95% empirical CI for Partial $\eta^2 = .007, .036$], heavy drinking [.016, .055], illicit drug use [.005, .035] or partner violence [.001, .004]. Results encourage continued use of brief alcohol interventions in community IPV services, but do not provide evidence of a unique benefit of MET in reducing alcohol use in this population.

Keywords

Intimate partner violence; brief alcohol intervention; motivational interviewing; randomized clinical trial

Intimate partner violence (IPV) is a widespread social problem with substantial negative effects on the physical and mental health of survivors (Campbell, 2002; Okuda et al., 2011). Although counseling interventions for partner violent individuals have only modest efficacy in reducing violence (Babcock, Greene & Robie, 2004; Eckhardt et al., 2013), approaches

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that address motivation to change have been shown to enhance treatment engagement and promote violence reduction (Alexander, Morris, Tracey & Frye, 2010; Crane & Eckhardt, 2013; Musser, Semiatin, Taft & Murphy, 2008; Scott, King, McGinn & Hosseini, 2011).

Psychosocial intervention for IPV offenders is often complicated by co-occurring problems with alcohol and other drugs. About half of partners of men in treatment for IPV report that alcohol is a contributing factor in the violence (Ting, Jordan-Green, Murphy & Pitts, 2009). Partner violent men who screen positive for substance use problems, in contrast to those who do not, have significantly lower rates of treatment initiation and treatment completion, are less compliant with cognitive behavioral therapy task assignments, and provide lower ratings of the working alliance and group cohesion during treatment (Ting et al., 2009). With respect to treatment outcome, one large-scale study found that IPV re-assault prevalence was 3 times higher among men who were drunk at least once during a quarterly follow-up in contrast to men who rarely or never drank, and 16 times higher for men who were drunk nearly every day (Jones & Gondolf, 2001). Research on alcohol dependent populations has shown that remission of problem drinking is associated with substantial reductions in IPV (Murphy & Ting, 2010; O'Farrell, Murphy, Stephan, Fals-Stewart & Murphy, 2004).

The current study was designed to address the need for substance use intervention services for partner violent men by conducting a randomized clinical trial to evaluate the efficacy of Motivational Enhancement Therapy (MET), a brief, empirically-supported intervention for alcohol problems. Participants were recruited from three community agencies offering IPV intervention services. We targeted partner violent men who screened positive for alcohol problems, reported unhealthy patterns of alcohol consumption, and/or reported perpetrating IPV while under the influence of alcohol. The 4-session MET intervention was modeled closely after the Project MATCH protocol (Miller, Zweben, DiClemente, & Rychtarik, 1994), with two notable adaptations. First, we provided additional assessment feedback on relationship functioning and its links to alcohol consumption. Second, rather than delivering the 4 MET sessions over a 12-week interval, we attempted to deliver the MET sessions over 4 consecutive weeks to facilitate progress into standard IPV services. MET was compared to an equal intensity, 4-session alcohol education (AE) control condition in which participants watched videos about alcohol effects and alcohol recovery and received referrals to community treatment resources. Both interventions were delivered in a randomized design prior to the initiation of standard agency services for IPV. In contrast to those receiving AE, we hypothesized that those in the MET condition would display higher readiness to change alcohol consumption at the end of the brief alcohol intervention, and greater reductions from baseline through 12-month follow-up in alcohol consumption, heavy drinking, other drug use, and intimate partner violence.

Method

Participants

Participants were recruited, assessed, and treated at one of three comprehensive domestic violence agencies in the Baltimore-Washington area between July, 2004 and June, 2008. Agency staff conducted an initial screening of all male intake cases during the initial program assessment. Clients were referred for brief alcohol intervention if they displayed

any of the following indicators of hazardous drinking: a) any report of physical partner assault perpetration while under the influence of alcohol in the past year; b) a score of 8 or more on the Alcohol Use Disorders Identification Test (AUDIT; Babor, de la Fuente, Saunders, & Grant, 1992); c) four or more binge drinking episodes (defined as 6 or more standard drinks on one occasion) in the past year; or d) average consumption of 15 or more standard drinks per week on a modified quantity-frequency index. Additional inclusion criteria for the current study were as follows: 1) minimum age 18; 2) if serious alcohol withdrawal symptoms are present, indicated by a score above 8 on the Clinical Institute Withdrawal Assessment for Alcohol, Revised (CIWA-Ar; Sullivan, Sykora, Schneiderman, Naranjo & Sellers, 1989), participant has completed medically supervised alcohol detoxification or been medically cleared for services; 3) participant displays no psychotic symptoms on the psychotic screen of the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon & Williams, 1996); and 4) participant is not actively suicidal as assessed by the SCID depression module. Clients referred for brief alcohol intervention were invited to meet with a research staff member, who provided them with information about the trial, assessed them for study eligibility, and obtained informed consent from those who were eligible and interested in participating.

A total of 228 participants met criteria for study inclusion, provided informed consent for study participation, and were randomized to treatment. The achieved sample was somewhat smaller than the initial target sample size of 275 which was selected to detect experimental effects in the small-to-medium range of magnitude (Cohen, 1988). The original plan was to recruit all participants from one treatment program, but two additional sites were added during the trial in order to increase recruitment. Participants were compensated \$30 US for each completed assessment. Study procedures were approved by institutional review at UMBC.

Measures

Screening for study eligibility was conducted by agency staff during routine program intake using the following indicators: 1) the 10-item AUDIT core (Babor et al, 1992; Bohn, Babor & Krantzler, 1995); 2) interview items inquiring about the number of times during the past year that the participant had been physically aggressive toward a relationship partner while drinking or shortly after drinking and the number of occasions during the past year on which the participant had consumed 6 or more drinks containing alcohol; and 3) a modified quantity-frequency index (Cahalan, Cisin & Crossley, 1969) used to calculate average drinks per week and administered via interview questions about the frequency and quantity of typical alcohol consumption on weekdays and weekend days. All subsequent assessments were conducted by trained research staff who were not informed of participant condition assignment.

Substance use diagnoses were made using the substance use disorder module of the Structured Clinical Interview for DSM-IV patient version (SCID; First et al., 1996), administered by trained graduate research assistants during the initial study assessment session.

Motivation to change alcohol consumption was assessed at baseline and post-alcohol intervention using the 32-item University of Rhode Island Change Assessment (URICA; DiClemente & Hughes, 1990), which contains four stage-of-change subscales: pre-contemplation, contemplation, action, and maintenance. The 4-factor structure of the URICA has been supported through confirmatory factor analysis, and the 4 subscales have been shown to have adequate internal consistency.

The Time-Line Follow-Back Interview (TLFB; Sobell & Sobell, 1996) was used to assess participant report of alcohol use, illicit drug use, and intimate partner violence for the year prior to intervention (at baseline), the period of alcohol intervention (at post-treatment) and four quarterly follow-ups. Each day was coded as alcohol abstinent, light drinking (1–3 standard drinks), moderate drinking (4–6 standard drinks), or heavy drinking (more than 6 standard drinks). Additional questions assessed non-prescribed use of sedatives, hypnotics, anxiolytics, stimulants, opiates, cocaine, hallucinogens, PCP, and cannabis. Psychometric analyses reveal that the TLFB method has high test-retest reliability, is useful across normal and problem drinkers, and has good convergent validity with collateral reports and with urine screens for drug use (e.g., Ehrman & Robbins, 1994; Sobell & Sobell, 1996; Sobell, Sobell, Leo & Concilla, 1988). After completing the TLFB assessment of alcohol and drug use, participants were shown a list of 8 physically assaultive behaviors from the Conflict Tactics Scale (Straus, 1979) and asked whether they had done any of these things during the assessment interval. Positive responses were followed by questions about specific incidents of partner aggression, which were recorded on the calendar. This TLFB method assesses violent incidents rather than specific violent actions (e.g., number of pushes or shoves), and has been used successfully to examine day-to-day associations between IPV and alcohol consumption (Schumacher, Coffey, Leonard, O’Jile & Landy, 2013). Analyses examined the percentage of days within each assessment interval for which the participant reported alcohol abstinence, heavy drinking, illicit drug use, and IPV.

Assessment schedule—The interval from baseline to post-treatment assessment varied due to scheduling challenges, attendance problems, and variation in agency requirements. The median duration of the post-treatment interval was 41.5 days (mean = 53.3 days, $sd = 37.2$). There was no significant difference between treatment conditions in the interval from baseline to post-treatment for those who completed the post assessment, $F(1,200) = 1.08$, $p = .299$. For the TLFB, participants who missed one or more assessments and returned for a subsequent assessment completed the calendar retrospectively for any missed assessments. The follow-ups reflect fixed 90-day intervals beginning the day after post-treatment assessment and calculated from cumulative available data on the TLFB.

Procedures

Randomization to Condition—Participants were assigned to condition using an urn randomization procedure (Stout, Wirtz, Carbonari, & Del Boca, 1994) with three balancing factors: 1) self-identification as non-Hispanic Caucasian (yes/no); 2) score on the self-report component of a prognostic indicator scale for partner abuse treatment (above or below a pre-established median cutoff score of 2.5; Murphy, Morrell, Elliot & Neavins, 2003); and 3) agency referral for additional substance use services (yes/no). Each participant was

randomized after completion of the baseline assessment by a doctoral-level project director using a computer random number generator.

Treatments—Individuals in the Alcohol Education (AE) condition met for 4 individual treatment sessions conducted by a project therapist. During each session, the participant watched a commercially-available video recording, completed a brief test on the content of the video, and received written educational handouts (11 total). AE participants were then given an opportunity to ask questions or discuss related personal concerns with the therapist for approximately 10 minutes. The videos were selected to have compelling content with personal stories regarding the challenges of substance addiction and recovery. For the 4 sequential sessions, video content addressed: 1) the medical effects of alcohol and other drugs and theories of addiction; 2) the effects of alcohol problems on marital and family relationships; 3) alcohol, violence, and intimate partner violence (2 videos); and 4) the process of recovery from alcohol problems. During discussions, AE therapists provided supportive listening and encouraged participants to use community resources to address substance use concerns.

The MET intervention followed the 4-session protocol developed for Project MATCH (Miller et al., 1994). This intervention is based on the principles of motivational interviewing (Miller & Rollnick, 2013), and includes personalized assessment feedback on alcohol consumption and its effects. Rather than conducting the 4 sessions over a 12-week interval, the intervention was adapted to be delivered over 4 consecutive weeks to facilitate timely transition into partner violence groups.

The personalized assessment feedback was modeled after the Project MATCH protocol, but with no feedback provided on liver enzymes and enhanced feedback provided on interpersonal and relationship functioning. Feedback addressed the following topics: weekly alcohol consumption; estimated peak blood alcohol level; tolerance; risks associated with other drug use, family history, age of onset; neuropsychological functioning (Trails A and B); alcohol problem severity (AUDIT); negative consequences of drinking (SIP; Miller, Tonigan, & Longabaugh, 1995); confidence to abstain (Situational Confidence Questionnaire; Annis, 1984); drinking in response to interpersonal conflict (Inventory of Drinking Situations; Annis, 1982); drinking in response to marital problems and marital problems associated with drinking (Alcohol Use Inventory; Horn, Wandberg & Foster, 1987); and relationship adjustment (Dyadic Adjustment Scale; Spanier, 1976).

Therapists—Eight therapists participated in the trial: one doctoral-level clinical psychologist, four doctoral students in clinical psychology, one marriage and family therapist, and two social workers. Each therapist delivered both AE and MET treatments. Therapist caseloads varied as a function of site, time commitment, and duration of involvement with the trial. Within the MET condition, two therapists treated 3 cases each, one treated 6 cases, two treated 7 cases each, one treated 8 cases, one treated 20 cases, and one treated 51 cases. Therapists received 10 hours of background training on IPV and its links with substance use, crisis intervention, safety planning, and ethical practice with violent clients. Subsequent training in MET consisted of targeted readings, a two-day workshop on MI principles and practice techniques, videotaped full-session role plays with

detailed feedback, detailed review of initial MI sessions delivered in the trial, and weekly supervision.

Treatment Integrity—MI adherence was assessed with the Motivational Interviewing Treatment Integrity (MITI) coding system, version 3.1.1 (Moyers, Martin, Manuel, Miller & Ernst, 2010). Coding was completed by two advanced undergraduate students trained in a multistage process involving review and discussion of MITI manual sections, coding of standard transcripts, and practice coding with feedback and discussion. Inter-coder agreement, assessed via intra-class correlation at the end of training, was adequate for complex (.69) and simple (.54) reflections, open- (.92) and closed-ended (.98) questions, MI non-adherent behaviors (.76), and mean global ratings (.62). Therapist proficiency in MI was examined by selecting 5 MI sessions for each of the 7 therapists who treated 20 or fewer cases, and 10 sessions for the therapist who treated over 50 cases. For each therapist, sessions were selected to represent distinct cases over the duration of the therapist's involvement with the trial. Within sessions, 20-minute segments were selected at random. Only MI sessions 2–4 were selected for coding, as the range of therapist behaviors during session 1 was artificially limited by the provision of structured assessment feedback. Summary data presented in Table 1 reveal that the therapists in general adhered to the principles and technical requirements of MI, with the exception that relative use of open- versus closed-ended questions was somewhat below the proficiency threshold, on average.

Data Analysis—Variable distributions were examined for violations of normal theory assumptions. Skewness values exceeding ± 2.0 or kurtosis values exceeding 7.0 have been considered to reflect distributions that depart substantially from normality (West, Finch & Curran, 1995). Variables with these characteristics were log transformed. The immediate effects of treatment condition on motivation to change were assessed using Analysis of Variance on the URICA subscales at post-treatment, constraining the sample to those who completed the 4-session alcohol interventions. All other analyses were conducted on the intent-to-treat sample using mixed design Analysis of Variance to examine change over time across conditions and differential change by treatment condition from baseline through 12-month follow-up.

Missing data on substance use and IPV outcomes were addressed using multiple imputation with SPSS (version 25). Given that there is no generally accepted method for pooling estimates from multiple imputation for repeated-measures ANOVA models (van Ginkel & Kroonenberg, 2014), we used an empirical approach to test the significance of effects from multiply imputed data sets. Mixed-design ANOVA models were run on 1000 imputed data sets using the GLM procedure in SPSS 25, and the lower and upper bound estimates of effects were reported at the 5th and 95th percentiles for the 1000 obtained results. The null hypothesis was rejected if all obtained results in this window were associated with p values less than .05.

Results

Descriptive Analyses and Data Transformations

The following TLFB variables had notable positive skew and kurtosis, and were transformed by adding 1 to the observed value and taking the base 10 log: percent days of heavy drinking, percent days of illicit drug use, and percent days of participant-to-partner violence.

Recruitment and Checks on Randomization

Figure 1 provides details on sample screening, recruitment, and retention. There were no significant differences between the MET and AE conditions in rates of sample retention. Table 2 contains information on demographic and baseline clinical characteristics by treatment condition. At the baseline assessment, participants assigned to MET versus AE did not differ significantly (all p values $> .10$) in background characteristics, alcohol diagnoses, lifetime alcohol problems (SIP), readiness to change alcohol consumption (URICA), or percent days of alcohol abstinence, heavy drinking, drug use, and participant-to-partner violence in the previous year (TLFB).

Alcohol Session Attendance

Compliance with brief alcohol interventions was good. Overall, 90.0% of MET participants and 85.6% of AE participants completed the 4-session alcohol intervention, χ^2 (df = 1, N = 228) = 1.03, $p = .311$. The average number of sessions attended was 3.71 ($sd = 0.95$) for MET and 3.55 ($sd = 1.17$) for AE. There was no significant difference between treatment conditions in alcohol session attendance, $F(1,226) = 1.24$, $p = .267$, and no significant difference in attendance across the three agency treatment sites, $F(2,225) = 1.62$, $p = .201$.

Readiness to Change Alcohol Consumption

Multivariate Analysis of Variance for the four URICA subscales revealed a significant difference between treatment conditions at posttreatment, *Pillai's Trace* = .091, $F(4,188) = 4.68$, $p = .001$. Follow-up univariate tests, displayed in Table 3, revealed that in contrast to those who completed AE, participants who completed MET displayed greater acknowledgment of alcohol problems, as indicated by significantly lower scores on the URICA Precontemplation scale.

Alcohol Use, Illicit Drug Use, and Intimate Partner Violence

As displayed in Table 4, for percent days alcohol abstinent, percent days of heavy drinking, percent days of illicit drug use, and percent days of partner violence, mixed design ANOVA revealed a significant change over time across treatment conditions (significant time effect), and no significant difference between the MET and AE conditions (no significant treatment $\times$ time interaction). Figure 2 displays the mean levels on these variables across time and condition, with missing data estimated through multiple imputation. Figure 2 reveals an increase from the year before treatment (baseline) to the post-treatment assessment across both conditions in alcohol abstinence, and a decrease in heavy drinking, illicit drug use, and IPV. Observed changes in IPV and illicit drug use were sustained over the 12-month follow-up period. Changes in alcohol abstinence and heavy drinking were largely sustained, with

some modest movement back toward baseline levels observed during follow-up. Using standard conventions and interpreting the lower bound estimates displayed in Table 4, the effect sizes for change over time in alcohol abstinence, heavy drinking, and IPV fall in the large range of magnitude (*Partial η^2* > .14), and the effect size for change in illicit drug use falls in the medium range of magnitude (*Partial η^2* > .06).

Discussion

Relative to the Alcohol Education condition, Motivational Enhancement Therapy had an intended effect on acknowledgment of alcohol problems for individuals who completed the brief intervention, as revealed by lower scores on the Precontemplation scale of the URICA at the assessment conducted immediately after the 4-session interventions. Counter to our hypotheses, the effects of MET on alcohol abstinence, heavy drinking, illicit drug use, and participant-to-partner violence were not significantly greater than the effects of AE. Significant and substantial change from the baseline year to the follow-up year was observed for days of alcohol abstinence, heavy drinking, and IPV across both treatment conditions. Significant change was also observed for illicit drug use across both conditions, with a smaller effect than observed for the drinking and IPV variables. Overall, the compliance with both brief alcohol interventions was very good.

The effect of MET on self-reported motivation to change is noteworthy given that all participants were receiving services for a problem other than alcohol and the vast majority were court-mandated to treatment. These characteristics of the setting and population may explain why the effect of MET, relative to AE, was limited to attitudes reflecting the earliest stage of change (acknowledging a problem with alcohol). However, the effect of MET on acknowledging problems with alcohol, observed at the end of the 4-session intervention, did not translate into greater long-term benefits in reducing substance use or IPV relative to the AE condition.

The observed changes over time in substance use and IPV across treatment conditions are encouraging. However, in the absence of a no-treatment control group, it is difficult to attribute those changes directly to the brief alcohol interventions. Three general explanations warrant consideration. The first possibility is that there were no actual behavior changes in substance use or IPV, and the results reflect a shift in response bias, specifically a tendency to report fewer problem behaviors after intervention than before. This explanation seems unlikely given that pre- to post-treatment changes observed through self-report from this population generally parallel changes observed through partner reports (e.g., Morrell, Elliott, Murphy, & Taft, 2003). In addition, the methods were designed to promote honest reporting through assurance of confidentiality, including the use of a federal confidentiality certificate and separate staff to conduct assessment versus treatment.

The second possibility is that changes in substance use and IPV are real, but independent of the brief alcohol interventions, and attributable to other causal influences. Changes may have resulted from other aspects of the IPV intervention system (e.g., arrest, prosecution, probation monitoring; IPV counseling), factors outside of the intervention system (e.g., relationship dissolution; self-help programs; community supports; victim services), or from

a self-monitoring effect of completing extensive and repetitive assessments of substance use and IPV. The importance of such influences is supported by the clinical observation that a subset of participants reported initiating changes in substance use prior to treatment in response to legal proceedings or pressure from their relationship partner.

The third explanation is that both treatments reduced participants' substance use and IPV, with roughly equal efficacy. This explanation is supported by the timing of observed behavior change, which corresponded with the alcohol interventions (i.e., change was evident at the post-intervention assessment). In addition, a larger treatment effect was observed for alcohol use, which was directly targeted by both interventions, than for illicit drug use, which was not. This explanation further rests on the assumption that AE, which was designed as a control condition, is an active intervention. Study clinicians observed that many participants reported benefit from the AE intervention, commenting positively on the video content and noting increased awareness of the effects of drinking on family problems and violent behavior.

Observed changes in substance use and IPV may also reflect the additive or interactive influences of various factors noted above. For example, brief alcohol interventions may have a unique added benefit that accounts for some, but not all, of the observed change. It is also possible that alcohol intervention may accelerate or sustain client change processes that began prior to treatment. Efforts to test these hypotheses require complex data modeling or research designs that are beyond the scope of the present analysis.

It is interesting to consider the results in light of a similar clinical trial for partner violent men by Stuart and colleagues (2013). Their study compared the addition of a brief motivational intervention for alcohol problems to IPV treatment-as-usual, in which all participants received one treatment session focused on alcohol and IPV. Although their MET intervention was delivered in one 90-minute session, the approach shared many elements with the 4-session MET program in the current study, including structured assessment feedback, elicitation of change talk, and structured change planning. Also, they used more restrictive inclusion criteria and their sample had higher average levels of drinking and alcohol use disorders at baseline than the current sample. For example, only 7% of their sample had no DSM-IV alcohol diagnosis at baseline versus 42% of the current sample. Stuart and colleagues found that participants who received MET, relative to control, had more alcohol abstinent days, fewer drinks per drinking day, and lower rates of severe IPV and injury perpetration during the 3–6 months after intervention. Despite differences in sampling and delivery format, the magnitude of change observed in the MET conditions in the two trials is quite similar. For example, the average change from baseline to 3-month follow-up in the MET condition in the Stuart trial was 19 percentage points for days of alcohol abstinence (versus 16 in the current trial) and 15 percentage points for days of heavy drinking (versus 12 in the current trial). They also observed notable change in the control group receiving only IPV intervention, specifically 9 percentage points in alcohol abstinence and 10 percentage points in heavy drinking. These results suggest that MET has a unique, but relatively small, effect on alcohol consumption in this population, and that some change in drinking is expected for participants receiving standard IPV services alone.

Several important limitations of the current study warrant consideration, including the reliance on self-report data, the use of the TLFB to measure IPV, the exclusive focus on physical assault as the IPV outcome variable, and the high rate of sample attrition over time. In addition, the same therapists provided both treatments, and no test of treatment discrimination was conducted between the study conditions. Therefore, it is possible that participants in AE experienced similar levels of support and empathy as did those in MET, although for a much briefer portion of each session. Other important limitations arise from the high degree of sample variation on key dimensions including the nature and extent of alcohol problems. More specifically, many participants reported very infrequent drinking, some had additional court or agency mandates to receive substance use services in the community, and some reported having initiated changes in drinking prior to study enrollment. The inclusion of these participants reflected our assumption that alcohol can increase IPV risk even in the absence of formal diagnosis, and our expectation that brief intervention may enhance or maintain self-initiated change. However, the high degree of heterogeneity in the sample may have limited the detection of treatment condition effects.

Although the multi-site design was a strength of this investigation, site was confounded with alcohol problem levels, race/ethnicity, and socioeconomic factors, and was therefore not tested as a moderator of treatment efficacy. The effectiveness of MET may be influenced by the availability and quality of social network and community resources to promote and sustain self-directed change. Variation in life conditions may also complicate these effects, particularly for individuals struggling with unemployment, child care, transportation, community safety concerns, residential instability, untreated mental health problems, and other drug addiction. These observations are consistent with research showing high unmet needs for health care and social services among partner violent men in the general population (Lipsky, Caetano & Roy-Byrne, 2011). In addition, social norms regarding alcohol consumption may vary as a function of social demographics and neighborhood context, and can play an important role in individuals' perception of the need for change. Finally, the data for this trial were collected a number of years ago. Other than the trial by Stuart and colleagues (2013), which was conducted at the same time as the current study, we are not aware of any other controlled clinical trials of alcohol intervention for IPV offenders that have been published in the meantime.

The current findings should be interpreted in light of prior research on motivational treatment strategies focused specifically on reducing partner violent behavior, which support the longstanding observation that IPV interventions can be significantly improved by enhancing motivation to change (Murphy & Baxter, 1997). Controlled studies have identified favorable impact on treatment engagement, pro-therapeutic attitudes, and/or violence reduction, of interventions including brief MET delivered by phone to community men who responded to a multi-media marketing campaign (Mbilinyi et al., 2011), motivational interviewing prior to IPV intervention (Crane & Eckhardt, 2013; Kistenmacher & Weiss, 2008; Musser et al., 2008), motivational enhancement groups for initially resistant clients (Scott et al., 2011), a stage-of-change based IPV group program (Alexander et al., 2010), and a computer-administered intervention that provides advice matched to stage of change (Levesque, Ciavatta, Castle, Prochaska & Prochaska, 2012). The current findings, in

concert with the trial by Stuart and colleagues' (2013), provide more equivocal evidence of the potential impact of MET for alcohol problems in this population.

More research is needed to model the complex array of factors that may influence ongoing alcohol use, alcohol relapse, and the alcohol – IPV association over time in order to identify the most efficacious alcohol intervention strategies for this population. In addition, it will be important to compare brief interventions, such as those in the current trial, to approaches that integrate substance use and IPV services over a more extended time frame (e.g., Easton et al., 2007). The extent to which different patterns of alcohol use (e.g., binge versus stable drinking) and different levels of substance use problems (alcohol diagnosis; comorbid drug use disorders) influence the efficacy of various treatment approaches is also of considerable importance for this population.

Despite uncertainties in interpretation arising from the lack of a no-treatment control condition, the results of the current study and a similar prior investigation (e.g., Stuart et al., 2013) encourage continued use of brief alcohol treatments that are engaging, informative, and supportive within the context of community intervention for IPV perpetrators. However, the evidence to date is not sufficient to argue that a motivational approach is superior to other treatment options, and important questions remain about the unique benefit of brief alcohol intervention for individuals with varied levels of alcohol and other drug use problems. Given that alcohol abuse is a strong risk factor for violence recidivism (Jones & Gondolf, 2001), and given that recovery from alcohol problems has been consistently linked to reductions in IPV (Murphy & Ting 2010), these avenues of research and practice are of crucial importance in community efforts to reduce violence and enhance victim safety.

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Highlights

MET produced greater acknowledgment of alcohol problems than AE

Significant change from baseline to 12-month follow-up were found for both conditions in substance use and IPV

No significant difference between MET and AE were found for substance use and IPV outcomes

Figure 1.
Consolidated Standards of Reporting Trials (CONSORT) flow diagram

Figure 2. Average levels of Alcohol Abstinence, Heavy Drinking, Illicit Drug Use, and Male-to-Female Partner Violence through 12-Month Follow-Up
Note: Values estimated through pooled results from multiple imputation of missing data.

Table 1

Therapist Proficiency in Motivational Interviewing

Indicator	Proficiency Threshold	Overall Average	N (%) of Therapists Exceeding Proficiency Threshold
% MI non-Adherent Codes	< 10%	1.3%	8 (100%)
% Open-Ended Questions	> 50%	42.6%	2 (25%)
% Complex Reflections	> 40%	52.7%	7 (87.5%)
Ratio of Reflections to Questions	> 1.0	2.2	7 (87.5%)
Mean Global Rating ^a	> 3.5	3.8	7 (87.5%)

^a Average of ratings for evocation, collaboration, autonomy / support, and empathy.

Table 2**Demographic and Clinical Characteristics by Treatment Condition at Baseline**

Variable	MET (N=110)	AE (N = 118)
Race, number (%)		
Asian / Asian American	0 (0)	2 (1.7)
Black / African American	60 (54.5)	64 (54.2)
Hispanic / Latino	9 (8.2)	16 (13.6)
Native American	1 (0.9)	1 (0.8)
White / Caucasian	35 (31.8)	35 (29.7)
Other	5 (4.5)	0 (0)
Education Level, number (%)		
Less than High School	28 (25.5)	32 (27.4)
High School Graduate	34 (30.9)	44 (37.6)
Some College or Vocational	33 (30%)	26 (22.2)
College Graduate	15 (13.6)	15 (12.8)
Employment Status, number (%)		
Unemployed	36 (32.7)	38 (32.8)
Employed Part-Time	11 (10.0)	15 (12.9)
Employed Full-Time	63 (57.3)	63 (54.3)
Referral Status, number (%)		
Court Referred	99 (90.8)	109 (92.4)
Voluntary	10 (9.2)	9 (7.6)
Relationship with victim, number (%)		
Currently Together	55 (50.5)	66 (55.9)
Currently Separated	54 (49.5)	52 (44.1)
Age, mean (SD), years	33.25 (9.33)	34.40 (11.00)
Gross income, mean (SD), \$1000US	21.2 (20.1)	21.6 (20.7)
Alcohol Diagnosis, number (%)		
No Diagnosis	40 (36.4)	41 (34.7)
DSM-IV Abuse	22 (20.0)	29 (24.6)
DSM-IV Dependence	48 (43.6)	48 (40.7)
SIP Mean (SD), Lifetime Problems	5.74 (4.78)	5.15 (5.16)
URICA, Mean (SD):		
Precontemplation	2.29 (.67)	2.45 (.77)
Contemplation	3.80 (.79)	3.72 (.83)
Action	3.80 (.78)	3.74 (.72)
Maintenance	2.95 (.85)	3.04 (.88)
TLFB, Mean (SD), percent days:		
Alcohol Abstinent	59.69 (33.36)	62.90 (30.18)
Heavy Drinking	23.06 (30.42)	17.79 (25.53)
Illicit Drug Use	10.14 (20.43)	11.45 (24.57)
Male to Female IPV	0.51 (1.31)	0.49 (1.61)

Note. URICA = University of Rhode Island Change Assessment; TLFB = Time Line Follow-back Interview; SIP = Short Inventory of Problems. All group means provided for raw (untransformed) variable. No significant differences between treatment conditions were observed for any baseline measures (all p values $> .10$).

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Table 3

Treatment Condition Effects on Readiness to Change at Posttreatment for Participants who Completed Brief Alcohol Intervention

URICA Scale	MET (N = 97)		AE (N = 96)		<i>F</i>	<i>df</i>	<i>p</i>	<i>Partial η^2</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>				
Precontemplation	2.15	.69	2.43	.68	7.82	1, 191	.006	.039
Contemplation	3.84	.74	3.76	.69	0.66	1, 191	.472	.003
Action	3.87	.76	3.76	.73	1.64	1, 191	.202	.009
Maintenance	2.91	.82	3.14	.82	3.83	1, 191	.052	.020

Table 4

Change in Drinking, Drug Use, and Violence across Time and Condition: Empirical Estimates of Multivariate Effects for Mixed Design ANOVA

Variable: % Days of	Effect	Empirically derived 95% CI					
		<i>F</i>		<i>P</i>		<i>partial η^2</i>	
		Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Alcohol Abstinence	Time	12.82	18.38	.000	.000	.226	.296
	Treatment $\times$ Time	0.31	1.65	.148	.905	.007	.036
Heavy Drinking ^a	Time	18.02	23.48	.000	.000	.292	.349
	Treatment $\times$ Time	0.73	2.53	.030	.602	.016	.055
Drug Use ^a	Time	4.66	8.10	.000	.000	.096	.156
	Treatment $\times$ Time	0.20	1.58	.167	.961	.005	.035
Violence ^a	Time	17.22	21.93	.000	.000	.282	.334
	Treatment $\times$ Time	0.44	1.96	.086	.821	.001	.004

Note: Values reflect estimates of the empirically derived 5th and 95th percentile using multiple imputation for missing values (1000 imputations).

^aVariable was log transformed prior to analysis.