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Legal Factors Associated with Change in Alcohol Use and Partner Violence among Offenders

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Abstract

Intimate partner violence (IPV) is a pervasive social concern that may be exacerbated by high rates of alcohol dependence among perpetrators. Society has attempted to combat IPV through various legal interventions but the effects of specific legal factors on behavioral change and treatment compliance remain largely unexamined. The primary focus of the current study was to comprehensively evaluate the impact of various legal factors (i.e., judicial mandate, judicial monitoring, stage of change, and stake in conformity) on mandatory treatment compliance and behavioral change over a 12 week post-adjudication period among a high-risk sample of alcohol dependent IPV offenders ($N = 60$). Growth curve analyses revealed effects of judicial monitoring and stage of change such that participants reporting low perceived judicial monitoring and early stages of change reported higher initial levels and a more rapid reduction in IPV than those reporting high perceived judicial monitoring and late stages of change, who reported consistently low IPV. Although we found that legal factors were poor predictors of treatment compliance and alcohol use during treatment, the association between alcohol and IPV was moderated by the legal factors. Stake in conformity was negatively associated with IPV among low alcohol users and positively associated among high alcohol users whereas stage of change was negatively associated with IPV among high alcohol users. The current results suggest that pretreatment legal factors may represent an important consideration in reducing IPV among alcohol dependent offenders. Further research is required to determine the efficacy of legal factors in isolation of treatment as well as methods of manipulating these factors to optimally compliment a prescribed course of treatment.

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Keywords

Legal Pressure; Alcohol Dependence; Partner Violence; Stage of Change; Treatment

1. Introduction

Research has shown that offenders who perpetrate intimate partner violence (IPV), acts of inflicting or threatening physical or psychological harm to intimidate or control an intimate partner (Saltzman et al., 2002), are highly recalcitrant to change with 12-month recidivism rates exceeding 30% (e.g., Dunford, 2000). Strong evidence suggests that batterer intervention programs (BIPs) are no more effective at lowering the rate of criminal recidivism than judicial monitoring (Feder & Wilson, 2005). The failure of BIPs to effect nonviolent behavior change beyond legal sanctions and monitoring has been attributed, in part, to heavy substance use and poor treatment compliance among IPV offenders (e.g., Daly & Pelowski, 2000). Alcohol abuse and IPV perpetration are highly comorbid conditions among clinical samples engaged in both substance abuse treatment (O'Farrell et al., 2000) as well as BIPs (Stuart et al., 2013) yet there exists a dearth of research focusing explicitly upon IPV offenders with alcohol dependence, behavioral change in the domains of IPV and alcohol use across treatment, and the influence of legally relevant factors within this large, highly relevant subset of offenders. In the present investigation, we have evaluated four factors of legal relevance (i.e., legal factors) toward targeted behavioral change and treatment compliance among court mandated IPV offenders diagnosed with alcohol dependence over a 12 week course of treatment.

1.1. Judicial Mandate and Monitoring

The criminalization of IPV in 1994 by the Violence Against Women Act directly precipitated the formation of diversion courts and mandated outpatient treatment programs as the primary model for offender accountability and violence prevention (e.g., Babcock, Green, & Robie, 2004). Despite the proliferation of these programs, the impact of legal pressure factors faced by IPV offenders mandated to outpatient BIPs has received little research attention. Using similar criminal diversion programs as a proxy, greater legal pressure or coercion has been associated with increased substance abuse treatment entry and retention (Hser, Maglione, Polinsky, & Anglin, 1998; Storbjork, 2006). The literature describes legal pressure or coercion in terms of a judicial mandate to treatment or judicial monitoring through court or probation personnel, though these constructs are often not differentiated or concurrently evaluated in effectiveness studies (Daly & Pelowski, 2000). The effect of a judicial mandate is evident in the BIP and substance abuse treatment completion rates among court ordered offenders which, though low, are significantly greater than clients who voluntarily seek services (Anglin, Brecht, & Maddahian, 1989; Pirog-Good & Stets, 1986). Initial evidence similarly associates judicial monitoring with increased BIP session attendance (DeHart et al., 1999). Nevertheless, as Rosenfeld (1992) observed, even legal pressures are not sufficient to prevent treatment attrition among court-mandated IPV offenders. Further research is required to determine the independent associations between perceived legal pressures and behavioral change as well as treatment compliance over time.

1.2. Stages of Change

Young and Belenko (2002) concluded that a judicial mandate to treatment was among the most frequent referrals for substance abuse treatment and that, by extension, the mandate facilitated motivation to change over the course of treatment. Murphy and Eckhardt (2005) applied the principles of motivational enhancement to the treatment of IPV offenders and suggested that mandating intervention, in the absence of strong internal motivations or readiness to change, violates the principle of autonomy and may result in greater resistance to either comply with or benefit from treatment. Thus, it may be internal motivation, rather than compulsory intervention, that facilitates treatment compliance and behavioral change. Indeed, participants who report greater readiness to change demonstrate more positive treatment outcomes in the substance abuse literature (Miller & Rollnick, 2002). A recent meta-analytic review reported a small-to-medium overall effect size ($d = 0.46$) between readiness to change, quantified as one's self-reported stage of change, and general therapy outcomes across 46 studies (Norcross, Krebs, & Prochaska, 2011). Specifically, pretreatment reports of later (e.g., action), rather than earlier (e.g., preparation), stages of change predicted greater therapeutic progress among 8,238 psychotherapy clients with highly variable presenting problems, including IPV ($d = 0.11 - 0.63$).

1.3. Stake in Conformity

Stake in conformity collectively refers to interpersonal (e.g. marital status) and economic (e.g., employment) factors that may constrain aberrant behavior following legal involvement (Toby, 1957). Stake in conformity emerged from social control theories of crime as a predictor of asocial and criminal activity with greater recidivism and lower judicial compliance among those with a lower, relative to higher, stake in conformity (Sherman et al., 1992). Ostensibly, offenders with a higher stake in conformity have greater potential to experience negative consequences (e.g., the dissolution of a marriage or the loss of employment) from persistent criminal behavior and non-compliance (Sherman et al., 1992). The influence of stake in conformity among male IPV offenders has not been extensively evaluated and the existing evidence remains contradictory. While Sherman and colleagues (1992) found support for criminal deterrence by legal intervention among offenders with a high, relative a low, stake in conformity, Kingsnorh (2006) found that stake in conformity was unassociated with recidivism.

In summary, initial evidence is inconsistent but marginal support exists for relationships between treatment outcomes, including targeted behaviors and overall compliance, and each of the four factors of legal relevance described above. Prior investigations have not, however, comprehensively evaluated the effects of these legal factors within a single sample and none of the factors have been evaluated within a sample of alcohol dependent IPV offenders. Furthermore, studies evaluating the effects of legal factors in IPV have almost exclusively relied upon retrospective estimates of outcomes at a single point in time (e.g., pretreatment or post treatment follow-up) rather than determining their influence on behavior over time.

1.4. The Current Study

The primary focus of the current study was to comprehensively evaluate the impact of various legal factors on court mandated treatment compliance and behavioral change over a 12 week period among a sample of males from the large, under-researched population of alcohol dependent IPV offenders. The factors that emerged from a study-specific measure of legal pressure, including perceived judicial mandate and monitoring, were used in conjunction with estimates of stage of change and stake in conformity to predict treatment compliance and behavioral change over time. Based upon the limited empirical data previously described, two primary hypotheses were advanced to guide the investigation. We hypothesized that 1) greater treatment compliance would be detected among individuals reporting a perceived legal mandate to complete treatment, greater perceived legal monitoring, later stages of change, and a higher stake in conformity at pretreatment baseline. We further hypothesized that growth curve analyses over the course of treatment would detect associations between a perceived legal mandate, greater perceived legal monitoring, later stages of change, and a higher stake in conformity with the behavioral outcomes of 2a) lower initial IPV and alcohol use as well as 2b) a more rapid reduction in IPV and alcohol use. Finally, without clear guidance from previous empirical research, we advanced no a priori hypotheses but explored the potential moderating role of legal factors in the relationship between IPV and alcohol use.

2. Materials and Methods

2.1. Participants

The current sample was part of a larger study designed to evaluate the efficacy of an integrated substance abuse and domestic violence treatment program. Eligible individuals were male offenders who met the Diagnostic and Statistical of Mental Disorders (DSM-IV-TR) criteria for alcohol dependence, were 18 years or older, had been arrested for domestic violence within the year prior to enrollment in the study, and had been referred for treatment by the court. A total of 77 prospective participants met all eligibility criteria. Eleven participants did not return to complete initial baseline measures and another 6 failed to provide sufficient data for inclusion in the current analyses, resulting in a final sample of 60 male offenders.

2.2. Procedure

Eligibility was determined through an initial telephone screening and subsequent, one-hour interview at the treatment facility. Participants completed a standard informed consent procedure approved by the university's Institutional Review Board. They then completed a semi-structured psychosocial interview as well as an adapted version of the Addiction Severity Index (ASI; McLellan et al., 1992) to confirm alcohol dependence. Fully eligible participants were invited to participate in the study, informed that receiving treatment services was not contingent upon study participation, and assured that refusal to participate in the current study would result in no legal ramifications. Participants were scheduled for a baseline evaluation session and enrolled in the study. At this point, participants were required to complete a second informed consent procedure followed by an informed consent

assessment to ensure functional comprehension of participant rights (Crane, Hawes, Mandel, & Easton, in press).

Participants engaged in treatment through an outpatient forensic facility associated with Yale University. Participants were randomly assigned to a manual-guided, evidence based treatment (i.e., Cognitive Behavioral Therapy or Drug Counseling) delivered in 12 weekly 60-minute individual therapy sessions. Both treatments included substantial substance use and relationship-enhancing content.¹ Subjects were not prescribed pharmacotherapy and all treatments were standardized with adherence and competence measures to ensure treatment fidelity and control for potential confounds. Sessions focused on harm reduction; all participants were encouraged to remain non-violent and to reduce alcohol consumption over the course of treatment.

2.3. Measures

2.3.1. Legal Pressure Index (LPI)—The current, study-specific LPI measure was administered at baseline and is among the first to standardize and evaluate the effect of legal pressure factors on behavioral change and compliance. The construction of the LPI was a collaborative venture including a focus group of nine subject matter experts. These individuals consisted of psychologists, psychiatrists, social workers, substance abuse evaluators and treatment providers, as well as legal advocates. The focus group developed the measure by utilizing proxy items derived from the ASI Legal Composite Scale. The ASI is one of the most reliable and valid measures within the addiction assessment field (McLellan et al., 1992). The ASI Legal Composite Scale has been used widely in the evaluation of substance abuse treatment and client outcome for 15 years (Flynn et al., 1995). There is evidence of satisfactory concurrent and predictive criterion-related validity as well as construct validity across a range of client populations, including IPV offenders (Brown, Werk, Caplan, & Seraganian, 1999). The LPI measure consisted of a 4-item judicial monitoring (e.g., Do you have to report weekly or monthly to a probation officer?) and a 4-item judicial mandate (e.g., Were you referred by probation, parole, the court/an attorney or a judge?) subscale. Dichotomous “no” and “yes” responses were scored “0” and “1”, respectively, then summed to create continuous composite scores for both factors (See results for the LPI factor analysis).

2.3.2. Stage of Change—Stage of change was assessed from baseline responses to a single item asking if the participant did or did not plan to take specific action to reduce their substance use and violence. Response options approximated the five stages of change, including precontemplation (“I do not plan to cut down”), contemplation (“I plan to cut down in the next 3 months”), preparation (“I plan to cut down in the next 30 days”), action (“I have taken specific steps to cut down for the past 30 days”), and maintenance (“I have taken specific steps to cut down for the past 3 months”). Given the lack of within-stage homogeneity, there is little consistency across studies in the number of categories used to estimate stages of change. Most research, however, supports a division into “early” and

¹We conducted a series of independent samples T-tests and determined that no significant differences existed between treatment groups on the frequency of physical or psychological IPV reported at 1, 2, or 3 month follow-up periods.

“late” stages (e.g., Crane & Eckhardt, 2013; Murphy & Eckhardt, 2005). In the current analyses, individuals reporting precontemplation, contemplation, or preparation were classified as early stage and individuals reporting action or maintenance were classified as late stage participants.

2.3.3. Stake in Conformity—The stake in conformity literature has consistently referenced marriage and employment as protective factors in the prediction of continued deviant or illegal behavior (Kingsnorth, 2006; Sherman et al., 1992; Tobey, 1957). Participants completed a demographic questionnaire during the baseline assessment. Responses to marital status (married vs. not married) and employment (employed full time vs. not) items were aggregated to create a dichotomous stake in conformity variable (married or employed full time vs. neither married nor employed full time).²

2.3.4. Timeline Follow-Back: IPV and Alcohol Use—Participants completed four in-person *Timeline Follow-Back* interviews (TLFB; Sobell and Sobell, 1992) to assess past-month IPV and alcohol use at baseline and at the end of the 4th, 8th, and 12th week of the follow-up period. The TLFB interview has demonstrated acceptable reliability and validity across multiple outcomes (e.g., Brown et al., 1998; Maisto, Sobell, Cooper, & Sobell, 1979). The interviews were carried out by two master’s level clinicians who received three 1-hour trainings on a standardized administration protocol that was designed by the principle investigator and senior author of the current study. On days of identified partner conflict, interviewers prompted participants to describe the interaction using 6 psychological and 6 physical violence items selected from the *Revised Conflict Tactics Scale* (CTS2; Straus et al., 1996). Although all IPV days in the current study included psychological violence, physical violence occurred on only 4 days during the follow-up period. Further, participants either denied or endorsed and described the amount of alcohol use on each calendar day. For the purposes of the current analyses, the number of IPV days and alcohol use days served as primary outcomes in 4-point growth curve models. Participants received \$50 in compensation for the baseline and each of the three subsequent assessments.

2.3.5. Treatment Compliance—Objective measures of treatment compliance were reported by study therapists, who submitted progress notes following each treatment session. Notes were coded for session attendance and used to create a continuous outcome variable for number of sessions attended. Treatment completion was dichotomously coded for treatment completers, who had attended 10 to 12 sessions, and non-completers, who had attended fewer than 10 sessions during the 12-week follow-up period. Thus, treatment compliance in the current study was indicated by both the number of sessions attended and treatment completion status.

2.4. Data Analytic Strategy

We first describe the current sample and discuss the factor analysis of the LPI measure prior to hypothesis testing. To examine hypothesis one, that greater treatment compliance would

²Findings were comparable regardless of the inclusion of marital status in the categorization of participants into low and high stake in conformity. The complete removal of stake in conformity resulted in no changes to direction or significance of observed effects, with the exception of a shift to non-significance for the judicial monitoring X alcohol interaction in our final model predicting aggression.

be detected among individuals reporting a perceived legal mandate to complete treatment, greater perceived legal monitoring, later stages of change, and a higher stake in conformity at baseline, we included legal factors in a linear regression analysis to predict the number of sessions attended and a logistic regression analysis to predict treatment completion.

To examine hypothesis two, that lower initial and more rapid reductions in IPV and alcohol use would be associated with a perceived legal mandate, greater perceived legal monitoring, later stages of change, and a higher stake in conformity at pretreatment, two multilevel growth curve models were estimated using Hierarchical Linear Modeling (HLM 7.0; Raudenbush et al., 2011). Specifically, independent growth curve models were examined for IPV and alcohol use. For each outcome, linear and quadratic random effects were modeled with perceived legal mandate, perceived legal monitoring, stages of change, and stake in conformity at pretreatment entered as cross-level main effects on the intercept and cross-level moderators on the growth parameters. All legal factors were grand mean centered. With higher rates of IPV and alcohol use among previous offenders and younger samples (e.g., Wekerle & Wall, 2002), age and number of prior arrests were grand mean centered and entered as control variables on the intercept for all models. Finally, because all IPV and alcohol use outcomes were treated as count variables (i.e., number of days), models were non-linear and estimated in HLM with the Poisson estimation option and robust standard errors (with overdispersion).

In addition to the main hypotheses, we also explored the relationship between IPV and alcohol use using multilevel regression models (measures within persons) with alcohol as a time varying covariate (level-1) and perceived legal mandate, perceived legal monitoring, stages of change, and stake in conformity at pretreatment entered as cross-level moderators (level-2) predicting IPV. Alcohol use reports and all cross-level moderators were grand mean centered due to our interest in examining between group differences. Further, all predictors were entered as random effects and estimated with the Poisson estimation option using robust standard errors (with overdispersion).

3. Results

3.1. Descriptives

Age at the time of evaluation ranged from 22 to 57 ($M = 39.42$, $SD = 8.56$) years. Offenders reported primarily Caucasian and African American ethnic backgrounds. Most participants were employed full-time and had either graduated high school or attended some college. Few males were married and not separated from their wives. Most participants endorsed factors associated with a high stake in conformity while approximately half reported later stages of change at baseline. Retention across the follow-up period was high at 1-month (85%), 2-month (75%), and 3-month (82%) follow-ups. Only 6 (10%) participants failed to complete any follow-up assessments. Approximately half of the current sample successfully completed treatment by attending 10 or more sessions while the remaining participants voluntarily dropped out or were involuntarily removed from treatment. Regarding attrition during the course of the study, analyses indicated no mean differences between those that provided complete data ($n = 37$) and those with partial data ($n = 23$) on age [$F(1, 58) = .359$, $p = .552$], number of prior arrests [$F(1, 58) = .462$, $p = .500$], alcohol days [$F(1, 58) = .$

046, $p = .831$], violence days [$F(1, 58) = .014$, $p = .906$], judicial monitoring [$F(1, 58) = .147$, $p = .703$], or judicial mandate [$F(1, 58) = 1.278$, $p = .263$]. Further, utilizing a chi-square test, no differences were noted on stake in conformity ($\chi^2_{(1)} = .429$, $p = .512$) or stage of change ($\chi^2_{(1)} = .020$, $p = .887$). Refer to Table 1 for a more detailed summary of these data.

3.2. LPI Factor Analysis

To examine the factor structure of the LPI, we first performed a factor analysis of the 10 items included on the measure.³ Principle axis factoring was used and an examination of eigen values and a scree plot led to testing of a two and four factor model using a varimax rotation. The four factor model had eigen values over 1.00 for all four factors and eight of the ten items exhibited cross-loadings. The two-factor model explained only 47% of the variance and two items exhibited cross-loadings. Removal of these two items resulted in an eight-item, two factor solution that explained 57% of the variance with eigen values over 2.00 for both factors. Reliability analysis resulted in a Cronbach's Alpha of .68 for the total 8-item scale. An examination of the scree plot supported a two factor solution. All 8 items correlated at least .3 with one other item and none exhibited cross-loadings. The Kaiser-Meyer-Olkin measure of sampling adequacy was .63, and Bartlett's test of sphericity was significant ($\chi^2(28) = 158.14$, $p < .01$). As the two factors were not significantly correlated ($r = .13$, $p = .29$), we also examined the reliability for factor 1 (Judicial Monitoring; $\alpha = .76$) and factor 2 (Judicial Mandate; $\alpha = .69$) separately. Having removed two of the original ten LPI items, we found a two factor solution to best fit the data (Table 2).

3.3. Treatment Completion

Legal factors were used to predict the number of treatment sessions attended by participants in a regression analysis. None of the factors explained significant variance in session attendance. Logistic regression analyses revealed that, among legal factors, only judicial monitoring trended toward being significantly associated with treatment completion (OR = 0.62, 95% CI = 0.39, 1.01). Additional analyses revealed that only high judicial monitoring scores predicted greater involuntary withdrawal (OR = 0.52, 95% CI = 0.28, 0.95) but not voluntary dropout. Thus, legal factors were poor predictors of treatment compliance among alcohol dependent IPV offenders.

3.4. Legal Factors Predicting Post-Adjudication Changes in IPV and Alcohol Use

Results from multilevel growth curve analyses for IPV revealed significant linear and quadratic effects that were moderated by two legal factors measured at baseline (see Table 3 for summary of results). First, those high on perceived judicial monitoring reported lower levels of IPV that significantly decreased over time ($b = -.193$, $p = .024$ at 1-month follow-up; $b = -.433$, $p < .001$ at 2-month follow-up), whereas those low on judicial monitoring demonstrated an initial increase in IPV followed by a significant decrease over time ($b = -.689$, $p < .001$ at 2-month follow-up; see Figure 1 top panel). Follow-up analyses revealed

³Of the 10 Legal Pressure Index items, 9 had a significant correlation with at least one other item. The Kaiser-Meyer-Olkin measure of sampling adequacy was .54, and Bartlett's test of sphericity was significant $\chi^2(45) = 185.40$, $p < .01$). The communalities were all above .5 indicating each item shared common variance with another item or items. Reliability analysis resulted in a Cronbach's Alpha of .60 for the complete measure.

no significant differences between those high and low on judicial monitoring at baseline ($b = -.245$, $p = .104$), 2-month follow-up ($b = -.281$, $p = .107$), and 3-month follow-up ($b = .113$, $p = .422$); however a significant difference was observed at the 1-month follow-up, such that those high on judicial monitoring scored significantly lower than those low on judicial monitoring ($b = -.400$, $p = .026$).

In addition to judicial monitoring, stage of change also significantly moderated both the linear and quadric effects for IPV over time (see Table 3 for summary of results). Similar to judicial monitoring, those in a later stage of change reported lower levels of IPV that remained relatively constant over the course of follow-up period (i.e., non-significant simple slopes at all four time points), where as those in an early stage of change demonstrated a significant increase in IPV initially ($b = .465$, $p = .003$ at baseline), followed by a significant decrease over time ($b = -.333$, $p = .046$ at 1-month and $b = -.392$, $p < .001$ at 2-months; see Figure 1 bottom panel). In addition, those in a later stage of change reported significantly lower IPV at baseline ($b = -.752$, $p = .002$), 1-month follow-up ($b = -1.257$, $p < .001$), 2-month follow-up ($b = -1.294$, $p < .001$), and 3-month follow-up ($b = -.863$, $p < .001$) when compared to those in an early stage of change.

In contrast to results for the multilevel growth curve analyses for IPV, legal factors measured at baseline did not moderate either the linear or quadratic effects for alcohol use over time (see Table 4 for summary of results). Instead, significant linear and quadratic effects were observed for alcohol use such that use significantly declined over time ($b = -.511$, $p = .003$), followed by a slowing of the decline by the 3-month follow-up ($b = .099$, $p = .013$).

3.5. Relationship between Post-Adjudication IPV and Alcohol Use

In addition to our main hypotheses, we also explored the relationship between alcohol use and the number of IPV days following adjudication, and how such a relationship may be moderated by baseline legal factors. Results from this analysis are summarized in Table 5 and Figure 2. Overall, alcohol use was significantly associated with IPV; however, this relationship was moderated by three legal factors. First, although judicial monitoring significantly moderated the relationship between alcohol and IPV, follow-up analyses revealed no differences between those high and low in judicial monitoring among those with high alcohol use ($b = -.086$, $p = .814$) or low alcohol use ($b = .549$, $p = .171$; See Figure 2 top panel).

Second, stake in conformity also significantly moderated the relationship between alcohol and IPV (see Figure 2 middle panel). Follow-up analyses revealed that among low alcohol users, those with a high stake in conformity reported significantly lower levels of IPV when compared to those with a low stake in conformity ($b = -3.158$, $p < .001$). In contrast, among high alcohol users, those with a high stake in conformity reported significantly higher levels of IPV when compared to those with a low stake in conformity ($b = 1.733$, $p = .002$).

Finally, stage of change also significantly moderated the relationship between alcohol and IPV (see Figure 2 bottom panel). Follow-up analyses revealed that among low alcohol users those in a later stage of change reported significantly more IPV days, on average, when

compared to those in an early stage of change ($b = 1.720$, $p = .008$); however, the average number of IPV days was below one for both groups. In contrast, among high alcohol users, those in a later stage of change reported significantly fewer IPV days relative to those in an early stage of change ($b = -1.716$, $p < .001$).

4. Discussion

The current study represents the first effort to comprehensively examine the association between multiple legal factors and behavioral outcomes over time among a sample of alcohol dependent, male IPV offenders. Although all participants in the current investigation were actively enrolled in court-ordered treatment for both alcohol and IPV, experimental evidence has shown that judicial models which focus on either treatment or accountability yield comparable compliance and recidivism rates (e.g., Babcock, Green, & Robie, 2004; Feder & Wilson, 2005). As such, our primary interest was in evaluating the influence of pretreatment factors, which would be present among all offenders regardless of regional differences in legal intervention or treatment disposition, on post-adjudication IPV and alcohol use behavior. Alcohol use, but not IPV, evidenced significant overall reductions during the follow-up period. We found that two factors, judicial monitoring and stage of change, were most consistently associated with IPV over the 3-month follow-up period while no legal factors explained variation in alcohol use or overall treatment compliance.

As predicted, participants who perceived high judicial monitoring reported marginally lower IPV at baseline and more consistent reductions in IPV over time than those who perceived low judicial monitoring. These findings are consistent with theory and the existing research behind defendant accountability models of IPV intervention, whereby an increased and salient legal presence (e.g., regular appointments with the court and probation department) is conceptualized as a primary element in both punishment and deterrence (DeHart et al., 1999; Tsai, 1999). Unexpectedly, the perception of a judicial mandate to treatment predicted neither initial IPV nor changes over time. As more support has been found for an association between treatment outcomes and judicial mandate, relative to monitoring, this finding was surprising. As noted earlier, however, few studies have examined these factors and fewer have distinguished between them in the same analysis (Daly & Pelowski, 2000). The present results suggest the possibility that perceived judicial monitoring may partially account for the significant effects of a judicial mandate on treatment outcomes and should be assessed for inclusion in future research.

Further, offenders who reported having taken action to change their asocial behaviors (i.e., late stage of change) reported significantly fewer IPV incidents relative to participants who reported having taken no action to change asocial behaviors (i.e., early stage of change). Due to the unexpectedly low baseline rates of IPV among late stage offenders, consistent reductions in IPV failed to reach significance. Thus, offenders who had attempted to reduce their own asocial behaviors prior to treatment showed little change over the follow-up period while offenders who had not taken action to reduce their asocial behavior prior to treatment showed a significant reduction in IPV during the follow-up period. Consistent with recommended practice and goals of intervention (e.g., Easton et al., 2007; Murphy & Eckhardt, 2005), treatment may have facilitated the progression of early stage clients

through the stages of change and observed reductions in IPV over time may have corresponded to unmeasured changes in the client's stage. The current results suggest the possibility that offenders in early, rather than late, stages of change may benefit most from involvement in a BIP, although further research is required to determine whether offenders in late stages of change are generally capable of maintaining low IPV without treatment. It should also be noted that the current stage of change measure represents readiness to change composite asocial behaviors and it is recommended that follow-up investigations assess readiness to change IPV and alcohol use separately to determine if domain-specific measures may reveal stronger relationships between stage and behavior change, particularly in terms of alcohol use.

The current legal factors were not associated with alcohol use, suggesting that the general reduction in drinking may be attributable to treatment rather than legal factors. Greater alcohol use was associated with greater IPV and three legal factors moderated this relationship. Specifically, the effect of alcohol frequency was slightly stronger among participants who reported low, relative to high, judicial monitoring. A high stake in conformity was a protective factor among offenders who reported low alcohol use and a risk factor among offenders who reported high alcohol use. This finding may represent a difference in problem severity such that those offenders with more to lose exerted effort to reduce identified problem behaviors (i.e., IPV and alcohol use) and were either capable of minimizing both or failed to accomplish either. Indeed, alcohol problem severity has been robustly associated with IPV (see Foran & O'Leary, 2008). In addition, stage of change also interacted with alcohol use such that offenders who reported a late stage also reported low rates of IPV regardless of alcohol use while offenders who reported an early stage and heavy alcohol use reported drastically greater IPV than all other participants. Previous research on stages of change and alcohol use as predictors of violence would suggest that early stage clients had made no attempt to reduce problematic behaviors and continued frequent drinking, which may or may not have contributed to persistent IPV (e.g., Foran & O'Leary, 2008; Murphy & Eckhardt, 2005). IPV among this high risk group may also reflect antisocial features that underlie heightened violence, heavy alcohol use, as well as resistance to changing behaviors despite legal intervention.

The current legal factors were associated with neither treatment compliance nor frequency of alcohol use over the follow-up period. The current treatments focused on risk reduction and included the goals of remaining non-violent and reducing alcohol use through abstinence or moderation. Furthermore, legal representatives are unable to enforce or objectively verify abstinence among offenders. As such, overall reductions in alcohol use among offenders may have resulted from the interventions themselves, rather than pretreatment legal factors. Our results suggest that substance abuse treatment may help reduce alcohol use among dependent IPV offenders and that individualized treatment planning should account for substance use.

4.1. Limitations and Implications for Research

Methodological limitations should be acknowledged in interpreting our results. First, the current treatment evaluation study recruited a relatively small sample, which was further

reduced in the current analyses by the presence of missing level-2 data. As such, our power to detect significant relationships was limited and it appears likely that the detected marginal effects may have reached significance with a larger sample. Second, no collateral data was collected from partners to confirm alcohol use and IPV, behaviors which may have been prone to intentional and accidental responding biases. It was determined during the initial conceptualization of the current study that involving female partners may have placed them at unnecessary risk. This decision was reached through an abundance of caution as collateral sources are routinely recruited without incident in similar research (e.g., Easton et al., 2007). Third, as no previous measures of perceived legal pressures existed, the judicial monitoring and judicial mandate factors were derived from a study-specific measure that requires further validation. The LPI measure was, however, modeled from the well-validated ASI Legal Composite Scale by experts in the fields of substance use and domestic violence offending. Additionally, we assessed stages of change using a single-item contemplation ladder, a routine method with multiple benefits in comparison to longer measures, although neither method produces entirely homogenous groups within each stage (Chung & Maisto, 2009; Etter & Pernegger, 1999; Laforge, Velicer, Richmond, & Owen, 1999). The stake in conformity score was derived from two items and was limited in range. Future evaluations of this factor may require larger samples to draw meaningful conclusions about its utility. Fourth, initial evidence suggests that negative consequences of drinking are more closely associated with quantity than frequency and we assessed days of alcohol use rather than amount of alcohol consumed. Results may have differed if we had collected information on days of heavy alcohol use rather than days of any use. Finally, we were unable to assess the long-term associations between legal factors and alcohol/IPV behavior beyond the follow-up period. Adding a 1-year and 3-year follow-up would have allowed the detection of target behavior beyond treatment and legal involvement.

The current study represents an initial investigation into the effects of legally-relevant factors on behavior change among alcohol dependent IPV offenders and the findings offer guidance for future research in this emerging area of investigation. Foremost, the current findings must be replicated in a larger sample with the power necessary to detect weaker main and interactive (e.g., judicial monitoring X stage of change) effects. This may also permit the detection of greater physical violence since only psychological violence was reported on most IPV days in the current study. Future research may extend the current findings to other offender populations, such as females who perpetrate IPV or IPV offenders with illicit substance use diagnoses. Experimental methods may be utilized to randomly assign participants to judicial monitoring or perceived mandate conditions. Manipulation of readiness to change through motivational enhancement procedures may offer further insight into the effects of stage of change on reductions in asocial behaviors. Ultimately, development of legal factor profiles may aid in developing individualized treatment plans that optimize resource allocation and offender outcomes.

4.2. Conclusions

The current investigation revealed that identified problematic behaviors decreased over a three-month period following legal involvement among a sample of alcohol dependent male IPV offenders. Specific legal factors were assessed prior to treatment, including low

perceived judicial monitoring and early stages of change, and were associated with higher initial and more rapidly decreasing IPV over treatment. Legal factors failed to influence the observed reduction in alcohol use but moderated the relationship between alcohol use and IPV among males in this sample. Overall, the current research offers support for the influence of legal and pretreatment factors on the course of post adjudication IPV. Further research is needed to determine the effects of legal factors in isolation of treatment for similar high risk samples of alcohol dependent IPV offenders, as it seems possible that legal processes and costs may be further reduced among a subset of offenders capable of effecting and maintaining prosocial behavioral change prior to treatment involvement.

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Figure 1.

Baseline judicial monitoring (top panel) and stage of change (bottom panel) predicting violence over the course of treatment. Note: Judicial monitoring was graphed using the 25th (low) and 75th percentiles (high).

Figure 2.
Legal factors as moderators of the relationship between alcohol use and violence.

Table 1

Sample descriptives and means (standard deviations) for time-varying and cross level moderators

	Baseline	1-Month	2-Month	3-Month
Alcohol Use (# days)	6.98 (6.02)	4.67 (5.46)	4.45 (6.19)	3.23 (5.70)
Aggression (# days)	2.37 (4.97)	2.75 (5.41)	2.05 (4.86)	.87 (2.19)
Age	39.42 (8.56)	--	--	--
# of Prior Arrests	2.58 (3.27)	--	--	--
# of Sessions Attended	8.13 (3.23)	--	--	--
Judicial Monitoring	0.75 (1.20)	--	--	--
Judicial Mandate	2.93 (1.29)	--	--	--
Stake in Conformity ^a	78.3%	--	--	--
Stages of Change ^a	46.7%	--	--	--
Ethnicity				
Caucasian	50.0%	--	--	--
African American	33.3%	--	--	--
Hispanic	11.7%	--	--	--
Other	5.0%	--	--	--
Education				
Some College	30.0%	--	--	--
High School or Equivalency	50.0%	--	--	--
Less than High School	20.0%	--	--	--
Employment				
Full-Time	76.7%	--	--	--
Part-Time	10.0%	--	--	--
Unemployed	13.3%	--	--	--
Marital Status				
Currently Married	16.7%	--	--	--
Separated or Not Married	83.3%	--	--	--

^aPercentage of people with a high stake in conformity or in a later stage of change.

Table 2

Summary of factor loadings for the Legal Pressure Index

	Factor 1: Judicial Monitoring	Factor 2: Judicial Mandate
3. Are you facing jail time if violated?	.861	---
6. Do you have to report weekly or monthly to a probation officer?	.856	---
7. Does a probation, parole, or court official take a urine sample?	.708	---
8. Do you have a felony charge?	.588	---
1. Were you referred by probation, parole, the court/an attorney or a judge?	---	.824
2. Are you stipulated, mandated, or being made to attend treatment by probation/parole/court/attorney or a judge as a condition of your legal situation?	---	.685
5. Do you report in person to probation, parole, court, an attorney or a judge?	---	.742
9. Do you have a misdemeanor charge?	---	.621

Table 3

Results for multilevel growth models – Violence (# of days)

	Estimate	SE	t-ratio	p-value	ERR	95% CIs (ERR)
Intercept	1.021	.121	8.417	<.001	2.777	2.177 – 3.543
X Age	-.037	.015	-1.655	.020	.783	.582 – 1.053
X # Prior Arrests	.234	.042	1.585	<.001	1.170	.959 – 1.427
X Judicial Monitoring	-.245	.148	-1.450	.104	.559	.250 – 1.250
X Judicial Mandate	.157	.099	3.215	.119	.471	.295 – .754
X Stake in Conformity	-.581	.401	5.523	.153	1.263	1.160 – 1.375
X Stage of Change	-.752	.234	-2.393	.002	.964	.935 – .994
Time	.120	.206	.583	.562	1.127	.746 – 1.703
X Judicial Monitoring	-.292	.102	-2.858	.006	.747	.608 – .916
X Judicial Mandate	.024	.144	.164	.871	1.024	.766 – 1.368
X Stake in Conformity	.493	.755	.653	.517	.747	.360 – 7.445
X Stage of Change	-.739	.380	-1.945	.057	.478	.223 – 1.023
Time ²	-.154	.061	-2.536	.014	.857	.759 – .968
X Judicial Monitoring	.137	.033	4.151	<.001	1.147	1.073 – 1.225
X Judicial Mandate	-.006	.038	-.166	.868	.994	.920 – 1.073
X Stake in Conformity	-.163	.226	-.720	.475	.850	.540 – 1.337
X Stage of Change	.234	.110	2.125	.038	1.264	1.013 – 1.576

Estimate = unstandardized estimates; SE = Standard Error; ERR = Event Rate Ratio, effect sizes estimates for models using Poisson distributions, which are interpreted as the percentage change in the dependent variable associated with an increase of 1 unit in the independent variable, holding all other variables constant. CIs = confidence intervals

Table 4

Results for multilevel growth models – Alcohol (# of days)

	Estimate	SE	t-ratio	p-value	ERR	95% CIs (ERR)
Intercept	1.855	.090	20.578	<.001	6.394	5.336 – 7.662
X Age	.025	.011	-.200	.027	.974	.745 – 1.272
X # Prior Arrests	.039	.032	-.695	.225	.960	.855 – 1.079
X Judicial Monitoring	-.027	.133	1.940	.842	1.597	.984 – 2.592
X Judicial Mandate	-.040	.058	-1.632	.490	0.744	.517 – 1.070
X Stake in Conformity	.468	.241	1.227	.058	1.040	.975 – 1.109
X Stage of Change	-.296	.181	2.270	.109	1.025	1.003 – 1.047
Time	-.511	.167	-3.065	.003	.600	.429 – .838
X Judicial Monitoring	-.267	.233	-1.147	.256	.765	.480 – 1.221
X Judicial Mandate	.051	.096	.531	.597	1.052	.869 – 1.274
X Stake in Conformity	.114	.480	.237	.814	1.120	.428 – 2.931
X Stage of Change	-.212	.268	-.792	.432	.809	.473 – 1.384
Time ²	.099	.039	2.559	.013	1.104	1.022 – 1.194
X Judicial Monitoring	.056	.049	1.134	.262	1.058	.958 – 1.168
X Judicial Mandate	.021	.024	.846	.401	1.021	.972 – 1.072
X Stake in Conformity	-.120	.096	-1.245	.219	.887	.731 – 1.076
X Stage of Change	.092	.062	1.492	.141	1.097	.969 – 1.242

Estimate = unstandardized estimates; SE = Standard Error; ERR = Event Rate Ratio, effect sizes estimates for models using Poisson distributions, which are interpreted as the percentage change in the dependent variable associated with an increase of 1 unit in the independent variable, holding all other variables constant. CIs = confidence intervals

Table 5

Summary of results for alcohol X legal factors predicting violence

	Estimate	SE	t-ratio	p-value	ERR	95% CIs (ERR)
Intercept	.234	.247	.950	.347	1.264	.771 – 2.073
X Age	-.069	.042	.444	.107	1.167	.581 – 2.344
X # Prior Arrests	.241	.100	1.919	.019	1.315	.988 – 1.751
X Judicial Monitoring	.154	.348	-.249	.659	.888	.339 – 2.324
X Judicial Mandate	.274	.143	-1.071	.060	.660	.303 – 1.437
X Stake in Conformity	-.119	.480	2.419	.805	1.273	1.042 – 1.555
X Stage of Change	-.415	.387	-1.642	.289	.934	.858 – 1.015
Alcohol (time varying)	.253	.042	6.067	<.001	1.287	1.184 – 1.399
X Judicial Monitoring	-.079	.037	-2.137	.037	.924	.857 – .995
X Judicial Mandate	.020	.033	.600	.551	1.020	.954 – 1.091
X Stake in Conformity	.611	.105	5.827	<.001	1.843	1.493 – 2.275
X Stage of Change	-.430	.081	-5.278	<.001	.651	.553 – .766

Estimate = unstandardized estimates; SE = Standard Error; ERR = Event Rate Ratio, effect sizes estimates for models using Poisson distributions, which are interpreted as the percentage change in the dependent variable associated with an increase of 1 unit in the independent variable, holding all other variables constant. CIs = confidence intervals