Investigating Predictors of Treatment Attrition Among Court-Ordered Batterers

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Abstract

Objective: The purpose of this study was to investigate differences in demographic variables and psychological variables between treatment completers and drop-outs among abusive men entering a court-mandated treatment program. Method: The study gathered Domestic Violence Inventory (DVI) scores from 91 men, 66 treatment completers and 25 drop-outs, beginning court-ordered treatment for domestic violence offenses. Results: Logistic regression analyses indicated that none of the demographic variables or the psychological variables differentiated treatment completers from drop-outs. Conclusion: Implications of the findings for improving retention rates among men attending court-mandated batterer treatment programs were explored and discussed.

Despite more than twenty years of intervention efforts with battered women, domestic violence remains the most common cause of non-fatal injury to women in the United States (Kyriacou et al., 1999). Consequently, researchers have shifted focus and have begun to investigate ways to eliminate domestic violence through intervention efforts with the batterer. Currently, there are several reviews of the batterer intervention program literature available and all suggest that between 60% to 80% of the men who complete treatment are no longer physically abusive towards their partners at the conclusion of the treatment program (Eisikovits & Edleson, 1989; Gondolf, 1997; Holtzworth-Munroe, Bates, Smultzer, & Sandin, 1997; Rosenfeld, 1992; Tolman & Bennett, 1990). Unfortunately, however, these reviews also identify numerous methodological limitations that detract from the confidence that can be placed in these single-site program evaluations (for an excellent discussion, see Rosenfeld, 1992).

Of the methodological shortcomings present in the batterer program evaluation literature, perhaps the most enduring is treatment attrition. Specifically, researchers have consistently demonstrated that 40% to 60% of men attending the first session of batterer treatment actually fail to complete treatment (DeMaris, 1989; Edleson & Syers, 1991; Gondolf, 1997; Pirog-Good & Stets, 1986). This high rate of drop-out is distressing because the men who fail to complete treatment remain at increased risk of abusing their partners (Hamberger & Hastings, 1988). Consequently, in an effort to enhance retention rates by understanding why abusive men drop-out of treatment, researchers have attempted to identify characteristics that distinguish treatment completers from drop-outs.

Although there have been many studies comparing batterers who complete treatment with those who drop-out, meaningful understanding remains elusive, as the studies frequently report contradictory findings. For example, some studies have suggested that batterers who complete

treatment can be distinguished from drop-outs by demo-graphic profiles. These studies indicate that abusive men who drop-out of treatment tend to be younger, unemployed, less educated, more likely to abuse alcohol, have a previous criminal history and be either single or separated from their partner (Cadsky, Hanson, Crawford, & Lalonde, 1996; DeMaris, 1989; Hamberger & Hastings, 1989; Grusznski & Carrillo, 1988). Conversely, other studies have discovered either incon-sistent or nonsignificant differences between treatment completers and drop-outs on these variables (Chen, Bersani, Myers, & Denton, 1989; DeHart, Kennerly, Burke, & Follingstad, 1999; DeMaris, 1989; Hamberger & Hastings, 1986, 1991; Hamberger, Lohr, & Gottlieb, 2000; Grusznski & Carrillo, 1988). For example, in a recent study of 61 men enrolled in a batterer treatment program, DeHart et al. (1999) discovered that attrition was unrelated to any of the demographic variables studied (e.g., age, employment status, relationship status).

In addition to the puzzling picture that emerges from the literature investigating demographic predictors of attrition for abusive men, there is also contradictory information regarding the importance of a court mandate on enhancing retention for abusive men in treatment. Much like the situation involving demographic profiles of drop-outs, there are studies that support the contention that a court-order is useful for enhancing treatment completion for abusive men (DeHart et al., 1999; Gondolf & Foster, 1991; Hamberger & Hastings, 1989; Pirog-Good & Stets, 1986) and there are studies which suggest that abusive men court-ordered into treatment experience similar rates of attrition as voluntary clients (Cadsky et al., 1996; Saunders & Parker, 1989). The need to decipher the importance of a court-order on enhancing retention re-mains a priority, as even the more recent investigations into this issue continue to report contradictory findings (Cadsky et al., 1996; DeHart et al., 1999; Hamberger et al., 2000).

Given the confusion surrounding the issue of attrition in batterer treatment programs, the purpose of the present study was to examine predictors of attrition in a sample of men court mandated into treatment. By focusing exclusively on men court ordered into treatment, the potentially confounding effect of referral status (i.e., voluntary versus involuntary) could be controlled. Additionally, given the proliferation of court mandated programs around the country (Gondolf, 1997), it is important to identify ways to enhance retention for this population. In brief, this study sought to investigate differences in demographic variables (i.e., age, ethnicity, educational level, income, relationship status, and number of previous arrests) and psychological variables (i.e., truthfulness, violence, lethality, control, alcohol use, drug use, and stress coping abilities) between treatment completers and drop-outs among abusive men entering a 12-week, court-mandated, treatment program. The primary research question guiding this study was: Can treatment completion among court-mandated clients be predicted by demo-graphic or psychological variables related to domestic violence?

Methods

Participants

A total of 100 men arrested in Tuscaloosa county and ordered by the court into a batterer intervention program (treatment program) under the Alabama Law Enforcement Protection Act were recruited to participate in this study. All potential participants received an explanation of the nature of the research and a written request for participation in the study. Those individuals who agreed to participate in the study signed a copy of the informed consent document, which described both the purpose of the study and any anticipated risks/benefits of participation. Nine of the subjects recruited for the study refused to participate. There-fore, the participants in this study were 91 men beginning their treatment for domestic violence offenses.

Data Collection

Data collection involved gathering Domestic Violence Inventory (DVI) (Risk & Needs Assessment, Inc., 1997) scores from 91 men arrested in Tuscaloosa County and ordered into treatment by the court. Subjects were tested during their initial assessment interview for the program and on the last night of group treatment with the DVI and they were also asked to complete a brief demographic information questionnaire. Subjects participated on two occasions for approximately 45 minutes each time.

Operational Definitions of "Treatment Completer" and "Drop-Out"

Given the high rates of attrition associated with batterer intervention programs discussed previously, many researchers have adopted a definition for "completer" that would be more accurately described as "partial completer" (Pirog-Good & Stets-Kealey, 1985; Rosenfeld, 1992). Specifically, because so many men fail to fully complete the batterer intervention program, researchers have conceptualized men as "completers" if they completed some fraction of the prescribed treatment (e.g., four weeks of a 12-week program). The problem with such a definition is that it equates men who complete a portion of the program with men who complete the entire program. Certainly, there are differences between these two groups and the men who complete the entire program are likely to benefit more than men who complete a fraction of it (Hamberger & Hastings, 1988). If this is not the case, why have a treatment program that is 12 weeks long instead of one that is four weeks long? Clearly, the premise is that all of the material in the program is important for modifying behavior and, therefore, an accurate definition of "completer" should entail finishing the entire program. Consequently, this study defined "treatment completers" as those men who finished the 12-week treatment program and "drop-outs" as those men who failed to finish the program

The Domestic Violence Inventory

The pretest-posttest version of the DVI was used to measure a number of factors related to domestic violence (Risk & Needs Assessment, Inc., 1997). This inventory, developed by Risk & Needs Assessment, Inc., was initially developed in 1990. The 142-item pretest-posttest version contains 6 scales: Truthfulness, Violence (lethality), Control, Alcohol, Drug, and Stress Coping Abilities. The Truthfulness scale measures the extent to which respondents' scores are consistent across the inventory. Respondents with Truthfulness scores at or above the 90th percentile represent inaccuracy, possibly caused by attempted "faking," denial, misreading questions, or other reading difficulties. The Violence scale measures the extent to which respondents represent a danger to themselves or others. The Control scale measures emotionally control-ling and other abusive behaviors. The Alcohol and Drug scales measure use and abuse of alcohol and drugs, problems that often are involved in domestic violence. The final scale, Stress Coping Abilities, measures subjective stress in relation to a respondent's ability to cope with stress.

The scale items use a mix of mostly "true-false" along with some Likert-type response categories. Additionally, some background variables related to domestic violence are included in the DVI scoring methods (e.g., alcohol, drug, and domestic violence arrests). The developers maintain an on-going database that contains data from domestic violence treatment programs that use their inventory.

A number of psychometric studies, ranging from 1990 to the present, have evaluated the reliability and validity of the DVI (Risk & Needs Assessment, Inc., 1997). Respondents in the psychometric studies have included college students (to test the Truthfulness scale), domestic violence defendants (males and females), those who have been convicted or adjudicated as domestic violence offenders, and incarcerated male prison inmates. Individuals' Scores on the DVI scales also have been compared to experienced clinicians' assessments related to their risks of committing domestic violence offenses.

Internal consistency reliability coefficients (Cronbach's Alpha) have ranged from good to excellent (.83 to .95) across the scales throughout their development. The DVI has been evaluated over time with regard to its known-groups, concurrent criterion, convergent construct, and discriminant construct validity. Over time, the DVI has demonstrated satisfactory to excellent levels of validity.

Each scale is scored to allow comparison of individual scores to norms developed to assess the risk for domestic violence, with the following categories and levels of risk: 0-39th percentile, low risk; 40th-69th percentile, medium risk; 70th-89th percentile, problem risk; and, 90th-100th percentile, severe problem risk. These norms were established after the completion of numerous studies of adjudicated and convicted domestic violence offenders. In addition, two studies found gender differences. Gender-specific norms subsequently were developed, based on the findings that females tend to score lower than males on the Alcohol, Drug, and Violence scales. Consequently, the norms for women reflect these gender differences and are incorporated in the scoring program (Risk & Needs Assessment, Inc., 1997).

The Batterer Intervention Program

The site for this study was a non-profit organization that has been providing counseling services to the Tuscaloosa, Alabama community for the past 25 years. Since 1989, this agency has been treating convicted domestic violence offenders. The program is part of a collaborative effort (involving the police, the court, and agency staff) aimed at intervening in violent relationships in order to reduce the occurrence of domestic violence in the community.

The creation of the batterer intervention program was a response to the passage of the Alabama Law Enforcement Protection Act of 1989. The Law Enforcement Protection Act, commonly referred to as the "warrantless arrest act," allows police who respond to a domestic violence call to arrest the abuser and press charges themselves. In these cases, the victim does not have to file a warrant against the abuser before an arrest is made. This law removes the burden of pressing charges from the victim and has resulted in a substantial increase in the number of domestic violence arrests and convictions in Alabama. The intervention program was created to provide a treatment alternative to incarceration as a sentencing option for judges. Due to the passing of the Law Enforcement Protection Act, the police have engaged in a pro-arrest policy, the courts have mandated counseling for the batterer as part of the sentence, and the agency staff have provided the treatment component.

The intervention program is cognitive-behavioral in orientation and is consistent in organization and focus to those programs described in the literature (Williams, 1992; Gondolf, 1997). The intervention pro-gram is a structured, intensive, 12-week, group treatment program that focuses primarily on anger management and skills development (Deavers, 1998). Groups consist of approximately 20 batterers and are co-led by two group leaders in a male/female, black/white team. Groups meet one night each week for approximately two hours. This batterer treatment program incorporates confrontation, therapy, and educational components. In this setting, the common proximal events of domestic violence (e.g., escalating arguments, unrealistic expectations, promoting healthy relationships) are directly addressed with clients and they are given an opportunity to make changes that will positively affect their personal relationships with others.

The program curriculum can be broken up into three successive series of group experiences. Because most offenders share a common set of defenses (minimization, denial, and blame) that foster aggressive behavior, the first series of group sessions helps participants to recognize and overcome these defense mechanisms. In this series, participants are assisted in overcoming their natural resistance to change by helping them achieve insight into their use of defense mechanisms. Thus, the first step toward modifying behavior occurs when clients recognize and accept the fact that the problem is their behavior.

The second series of sessions flows out of the fact that the belief and value systems of most batterers are very similar and foster the notion of traditional sex roles stereotypes. This series challenges the batterers' beliefs and values. The sessions are designed to help clients restructure their thinking by modifying the beliefs that promote violent behavior.

The final series of sessions is designed to help clients increase inter-personal skills by providing them with a repertoire of alternate and appropriate behaviors. In this series, skills such as

problem solving, assertiveness, and negotiation are both taught and practiced in the group set-ting. Typically, the first series lasts 3 weeks and the second and third series are approximately 3 weeks and 6 weeks in length, respectively.

Results

Missing Data

A few variables contained some missing data for the total sample: educational level, age at first conviction, number of alcohol arrests, and number of drug arrests. Of these, the number of times arrested and educational level had 1 and 2 instances of missing data, respectively. Age of first conviction, number of drug arrests, and number of alcohol ar-rests each contained 5 instances of missing data for the total sample. There were no instances in the total sample of missing data for age, number of times arrested for domestic violence violations, or for any of the DVI scale scores. For all statistical analyses, cases with missing data were deleted list-wise

Sample Characteristics

Ninety-one males participated in the domestic violence program. Sixty-six clients completed the program and 25 did not, yielding a completion rate of 72.5%. Eight of the programs' clients had pretest Truthfulness scale scores that exceeded the recommended score for analysis (90th percentile and above) and were excluded from statistical tests. Al-though, they were included in the computations of descriptive statistics on socio-demographic data, their data were eliminated from the statistical analyses, yielding an analysis sample of 83 participants, with 61 completers and 22 drop-outs.

Clients' ages ranged from 19 to 59 with a typical age of almost 31 (median = 29). Fifty-seven percent ($N = 52$) of the program's clients were African-American. Comparatively more clients reported that they were married ($N = 36$, 40.9%) than either living together, dating, or "other." Nearly 88% of clients reported that they were married, living together, or dating. The median annual income was between $10,001 and $20,000. Most clients had completed high school. Years of education ranged from 6 to 17 with an average of 11.85 and a median of 12. Table 1 provides additional information about the respondents' demographic characteristics.

Clients reported on a number of factors that are related to domestic violence: the number of times arrested, the number of times arrested for alcohol and drugs, the number of times arrested for domestic violence, and age at first conviction. The number of times clients reported they had been arrested ranged from none to 23, with the typical number being 3.44 (median = 3). The number of alcohol arrests on average was al-most 1.0 (median = 0), with a range of 0 to 7. Clients of this program were less likely to have been arrested for drugs than alcohol. This variable ranged from 0 to 2 and had a median of 0. As expected the most frequently reported reason for arrest was for domestic violence, with a range from 0 to 23 and an average of 1.46

(median = 1.0). The typical age at first conviction was 23.65, with a median of 21 and a range from 11 to 54.

Participants of this study scored in the medium risk percentile range of 40 to 69 (Risk & Needs Assessment, Inc., 1997) for almost all of the DVI scales. The one major exception is the DVI scale percentile scores for the Violence scale. Respondents of both groups scored in the "problem risk" percentile range (70 to 89) for this scale, with the drop-out group tending to score somewhat higher than treatment completers on this scale. Other than this difference, the treatment completer and drop-out groups tended to score similarly at the pretest across the DVI scales. Table 2 provides additional information on the factors that were measured related to domestic violence and descriptive statistics for the DVI scales for the total sample and by group.

Statistical Analyses

Statistical tests were conducted to determine the extent to which demographic characteristics and the DVI pretest scores could effectively predict treatment completion. As noted by Cohen & Cohen (1983), the only instance in which the Type I error rate is held at the study's set alpha level is the case where only two analyses are conducted. Two computations were conducted in this study to prevent model over-fit (and potential Type I errors) due to the small sample size.

Initially, discriminant function analyses were planned for use in evaluating the research question. However, an initial discriminant function analysis indicated that the assumption of equality of the variance-covariance matrices had been violated with the data. In this situation, logistic regression analyses are an excellent substitution for discriminant function analyses (Grimm & Yarnold, 1997).

Two logistic regression analyses were used to analyze demographic characteristics and scale scores in predicting treatment completion. The data were examined for the presence of outliers, which can disproportionately influence test results. There were no scores on the scales that were beyond 2.5 standard deviations of the mean. (Table 3 provides de-tailed information on the logistic regression results.)

For the first logistic regression, demographic characteristics were en-tered as predictive variables for treatment completion. These included age, ethnicity (African-American or Caucasian), educational level, in-come, number of arrests, and whether or not respondents were involved in a relationship. The estimation terminated after 7 iterations with a 2-2 Log likelihood of 79.987. The overall test was not significant (Chi-Square = 6.059, p = .195). The probability levels for all predictors ranged from .309 for ethnicity to .872 for educational level.

In terms of classification accuracy, 100% of completers were correctly predicted to finish the program, while *none* of the drop-out group were accurately predicted *not* to finish the program. These results suggest that although treatment completers can be predicted very accurately to finish this program on the basis of demographic characteristics, those who do not finish the program are not at all accurately predicted by demo-graphic characteristics.

Classification accuracy is judged by the extent to which a set of predictor variables exceeds the binomial probability of .50, the usual rule of thumb for significance being 25% more than would be expected on the basis of group sizes (Hair, Anderson, Tatham, & Black, 1998). In the case of treatment completers, predictive accuracy is perfect, while drop-outs are predicted with no accuracy whatsoever. Finding no predictive accuracy for drop-outs on demographic characteristics is unfortunate, because a model that accurately predicts non-completion on at least some of these variables would be important to treatment planning for those most at risk of non-completion.

A second logistic regression was computed to predict program completion by the 6 DVI pretest scale scores: Truthfulness, Violence (lethality), Control, Alcohol, Drug, and Stress Coping Abilities. This analysis terminated after 3 iterations, with a $_3$ 2 Log likelihood of 93.592 and also was not significant (Chi-Square = 2.403, p = .879). No single scale significantly predicted treatment completion. Probability levels ranged from .337 for the Drug scale to .835 for the Violence scale. Further, the DVI pretest scale scores predicted treatment completion with the same lack of precision for drop-outs as did the demographic data. While 100% of program completers were predicted correctly to finish the program, absolutely *none* of those clients who did not finish the program were predicted accurately *not* to finish.

Discussion

The findings from this study suggest that, for the men comprising this sample, neither the demographic nor psychological variables included in this study were useful in distinguishing treatment completers and drop-outs. Not only were the results of any predictor variable far from significant, the predictive accuracy for drop-outs was completely use-less for clinical decision-making. In this regard, these findings are in-consistent with some previous research in the field that has suggested that educational attainment, employment status, self-reported alcohol use and marital status are important predictors of treatment attrition for abusive men (Cadsky, Hanson, Crawford, & Lalonde, 1996; DeMaris, 1989; Hamberger & Hastings, 1989; Grusznski & Carrillo, 1988). How-ever, the findings are consistent with other investigations into batterer treatment program attrition, which found little or no relationship be-tween demographic variables and premature drop-out (Chen et al., 1989; DeHart, Kennerly, Burke, & Follingstad, 1999; DeMaris, 1989; Hamberger & Hastings, 1986, 1991; Grusznski & Carrillo, 1988).

The lack of understanding regarding attrition among abusive men in treatment is both disturbing and persistent. However, the lack of a coherent pattern among these studies may in itself be useful information. Specifically, the lack of replicable patterns of program attrition among batterers suggests that some unexamined variable or interactions among variables may be at work. In this vein, one possible interpretation of the current situation may be that there are regional or local differences in samples, which may account for the differences in findings. If true, idiosyncrasies in samples across program sites would prevent the meaningful synthesis and application of information for this population.

A second possible explanation for the inconsistent findings across studies may be that there are systemic differences across program sites. For example, it is widely accepted in the field that judicial support varies tremendously for court-mandated treatment programs for batterers (Cadsky et al., 1996; Hamberger et al., 2000).

Consequently, the differences in findings across studies may be attributable to the differences in judicial support that vary by location. This certainly seems to be one possible explanation for interpreting the findings from the present study in the context of the national literature.

The attrition rate in this study was 28%, which is well below the national average of 40% to 60% (DeMaris, 1989; Edleson & Syers, 1991; Gondolf, 1997; Pirog-Good & Stets, 1986). The extremely low attrition rate for this study is directly attributable to strong judicial support for the program. In the community where this study took place, there is a general understanding among community residents that domestic violence is being taken seriously. Consequently, given both public awareness and concern, judges aggressively support treatment program compliance. In instances where men are terminated from the program either for non-participation or non-attendance, there is a very high likelihood that they will be incarcerated for a period of time ranging from 30 to 90 days, depending upon the severity of the offense. It seems clear that this strong judicial support is one of the best explanations for the low attrition rate in this study. Moving beyond the findings from the present study, it is possible that this unexamined variable is more important than either demographic variables or psychological variables in predicting attrition for this population. Given that few studies identify or discuss issues like judicial support in interpreting their findings, it is impossible to determine the potential contribution of such constructs in bringing meaning to this confusing and often contradictory literature.

A third possibility that may help explain the inconsistent findings in the literature relates to the statistical analyses used across studies. Some studies have used multiple statistical analyses with the same data, thereby dramatically increasing the Type I error rate of a particular study. Others have used multivariate techniques without evaluating or reporting important assumptions that underlie the parametric statistics used in studies. Careful evaluation of data for potential outlier influences and conducting analyses that are mindful of and examine statistical assumptions is important to clarifying the knowledge base about domestic violence and predictions related to it.

In looking beyond the variables frequently investigated in the literature (i.e., demographic and psychological variables), many potentially important factors remain unexamined. These factors may be important sources of data, in the effort to identify men at greatest risk of dropping out of treatment. For example, issues like transportation to and from group and personality characteristics of group leaders may be important predictors of attrition for this population. Regarding the personality characteristics of group leaders, it is conceivable that some of the attrition in treatment programs may be related to a poor fit between the personality of the batterer and the personality of the group leader. Such a conclusion appears increasingly plausible, when viewed in light of the criminal justice literature establishing a connection between characteristics of police officers and their decision making processes in domestic violence cases (Melton, 1999).

In the effort to understand why some men fail to complete court-man-dated treatment for domestic violence offenses, many studies have compared drop-outs to treatment completers.

Despite numerous investigations into this issue, the confusing situation persists. If efforts to retain batterers in treatment are to continue to move forward, we must expand our conceptualization of the problem to include issues like judicial support for the program, as well as issues like mileage traveled to and from treatment. Only by thinking differently about these issues, will we begin to develop some meaningful understanding that transcends individual program sites.

Limitations

There are two drawbacks to this study that limit the conclusions that can be drawn from it and it is important to keep these limitations in mind when evaluating the findings. First, this study employed a sample of batterers drawn from a predominately rural, southern state. It is clear that these batterers are not representative of batterers in general and the results of this study may not be applicable to batterers in different geo-graphic regions and clinical settings. Second, this study employed a relatively small sample and the small sample size may have contributed to the lack of significant findings.

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List of tables

Table 1
Frequency distributions of demographic variables

	N	%
*Age**		
19-28 years	41	45.1
29-39 years	37	40.7
40-59 years	13	14.3
Ethnicity		
African American	52	57.8
Caucasian/White	38	42.2
Missing	1	1.1
Marital Status		
Married	36	40.9
Living with other	25	28.4
Dating	16	17.6
Other	11	12.5
Missing	3	3.3
Educational Level		
Less than high school	32	36.0
12 years	34	38.2
13-17 years	23	25.3
Missing	2	2.2
Annual Income		
None-10,000	23	31.9
10,001-20,000	26	36.1
20,001-30,000	16	22.2
30,001-40,000	6	8.3
40,001-50,000	1	1.4

* $\bar{x}$ = 30.65, Median = 29.00, Std. Dev. = 8.37

Table 2
Descriptive statistics for domestic violence-related and DVI variables

Variable	Mean	Median	Std. Dev.
Number of Arrests	3.44	3.00	3.28
Age at First Conviction	23.65	21.00	8.26
Number of Domestic Violence Arrests	1.47	1.00	2.43
Number of Alcohol Arrests	4.13	0.00	17.87
Number of Drug Arrests	3.58	0.00	17.93
Mean Percentiles			
Pretest Truthfulness[1,2]	51.48	55.00	22.66
Completers	50.93	55.00	23.04
Drop-outs	53.00	55.00	22.00
Pretest Alcohol	37.88	34.00	29.06
Completers	36.09	38.50	29.81
Drop-outs	38.85	43.00	27.46
Pretest Drug	42.70	38.00	28.99
Completers	40.07	38.00	28.38
Drop-outs	46.23	38.00	30.83
Pretest Control	48.83	43.00	29.57
Completers	50.10	49.00	30.34
Drop-outs	45.32	37.00	27.67
Pretest Violence	69.52	74.00	23.78
Completers	69.54	74.00	23.53
Drop-outs	69.45	76.00	25.03
Pretest Stress-Coping	54.89	58.00	30.47
Completers	53.87	58.00	32.46
Drop-outs	57.73	56.00	24.55

Notes: 1. Descriptive statistics are given for the total sample above each group listed below. 2. Participants with pretest scores on Truthfulness that are at the 90th percentile or above are excluded from the DVI descriptive data ($N = 83$).

Table 3
Logistic regression analyses in predicting treatment completion by demographic and psychological variables

Variables	Parameter	SE	Wald χ^2	Sig.	Odds
Age	.014	.032	.185	.667	1.014
Ethnicity	.567	.558	1.035	.309	1.764
Educational Level	.023	.143	.026	.872	1.023
In a Relationship (or not)	−7.424	21.287	.122	.727	.001
Constant	6.878	21.377	.104	.748	970.561
Pretest Truthfulness	−.004	.012	.122	.727	.996
Pretest Alcohol	.010	.011	.796	.372	1.010
Pretest Control	.008	.010	.572	.449	1.008
Pretest Drug	−.010	.010	.923	.337	.990
Pretest Violence	−.003	.014	.043	.835	.997
Pretest Stress/Coping	−.006	.011	.285	.593	.994
Constant	1.475	1.246	1.403	.236	4.372

Note: The group sizes for the first logistic regression analysis are $N = 58$ completers and $N = 19$ drop-outs. The group sizes for the second analysis are $N = 61$ completers and $N = 22$ drop-outs. The differences in group sizes are due to missing information for demographic variables.

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