

Predictors of Attrition in Two Types of Group Programs for Men Who Batter¹

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This study examines the predictors of precounseling attrition, incounseling attrition, and duration of attendance in 2 group programs for men who batter. Predictors of precounseling attrition were a history of child abuse, being non-White, and having more self-reported anger. Younger age and antisocial personality were significant predictors of attrition during counseling in both logit and Zero Inflated Poisson regression analyses. We further identified predictors of attrition by type of group treatment. In cognitive-behavioral groups, younger age, no reports of violence in childhood, and antisocial personality were significantly related to attrition. In process-psychodynamic groups, low income was related to attrition. Program and research implications of these findings are discussed.

KEY WORDS: predictors; attrition; group treatment; batterers.

Efforts to stop domestic abuse have led to the development of programs for men who batter. However, these programs encounter very high rates of attrition. Indeed, attrition is the most frequently cited problem in national surveys of program staff (Gondolf, 1990; Pirog-Good & Stets-Kealey, 1986; Roberts, 1982). In four studies, preprogram dropout rates ranged from 23 to 86%, with an average of 59% (Gondolf & Foster, 1991; Grusznski & Carrillo, 1988; Hamberger & Hastings, 1986; Saunders & Parker, 1989). Attrition

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rates after treatment starts are generally lower, averaging 38% across eight studies and ranging from 14 to 56% (DeMaris, 1989; Faulkner *et al.*, 1991; Gondolf & Foster, 1991; Grusznski & Carrillo, 1988; Hamberger & Hastings, 1986, 1989; Petrik *et al.*, 1993; Saunders & Parker, 1989). Attrition rates are likely to differ across programs because of differing completion criteria and lengths of treatment (Davis & Taylor, 1998).

Predictors of completion of the preprogram phase found in previous research include being married (Cadsky *et al.*, 1996; Gondolf & Foster, 1991) and having a history of child abuse (Hamberger & Hastings, 1986). Other factors related to preprogram completion in one large sample study included higher income, voluntary referral, less chance of having a criminal record, negative self-concept, less alcohol use, and more marital conflict (Cadsky *et al.*, 1996). In an interview study, Gondolf (1988) found that participants showed less extreme denial, were more aware of their abuse, and were less resistant to getting help than nonparticipants. Another study found that mandatory court reviews improved compliance to intake procedures (Gondolf, 2000).

A number of studies have focused on batterers who began counseling and then discontinued prematurely, using primarily demographic and background variables (Cadsky *et al.*, 1996; DeMaris, 1989; Faulkner *et al.*, 1991; Hamberger & Hastings, 1989; Petrik *et al.*, 1993; Saunders & Parker, 1989). Demographic and violence factors appear to be stronger predictors of during-program completion than of preprogram completion (Saunders & Parker, 1989). Generally, men who were young and unemployed and had lower incomes, alcohol problems, or a greater number of criminal offenses were most likely to drop out. These are some of the same factors associated with attrition in other populations (Baeklund & Lundwall, 1975). Criminal justice mandates are not consistently related to men's program attendance (e.g., Cadsky *et al.*, 1996; Grusznski, 1986; Hamberger & Hastings, 1993) and may interact with demographic variables (Saunders & Parker, 1989). Informal referrals (friends, relatives, wife, shelter, media, self) were related to continuation in one study (Gondolf & Foster, 1991). A study of couples volunteering for couple's counseling did not find that demographic variables were related to attrition (Heyman *et al.*, 1999). Rather, the husband's severe psychological abuse predicted attrition. Another study also failed to find evidence that demographic variables were related to attrition, nor were offender psychopathology and attitudes about counseling (DeHart *et al.*, 1999). Instead, lack of external monitoring and distance to the program predicted attrition. Two studies indicate that men who report more marital agreement and cohesion were more likely to drop out (Cadsky *et al.*, 1996; Saunders & Parker, 1989).

Some investigations combined preprogram and during-program attrition in their analyses (Grusznski & Carrillo, 1988; Hamberger & Hastings,

1989; Saunders & Parker, 1989). As in research on program completion, less educated men were more likely to drop out. Nonminority men and those who witnessed domestic violence were more likely to enter and complete programs. Men who experienced child abuse were more likely to continue the program in one of the studies (Hamberger & Hastings, 1989); however, the reverse was true in another (Grusznski & Carrillo, 1988).

This study attempted to improve upon previous research. First, we investigated the effects of different treatment approaches on attrition. In analyzing the act of dropping out, we need to consider multiple dimensions, including program factors. However, most of the earlier studies focused only on client attributes, and much less attention was paid to the effect of treatment types on treatment completion. In addition to the men's resistance to treatment, it is unclear if some features of the program might create impediments to participation. For example, the finding that less educated men drop out at higher rates may be related to the educational level of written materials used in programs. Furthermore, with increasing evidence of types of men who batter (e.g., Holtzworth-Munroe & Stuart, 1994), the matching of distinct treatments with different abuser types has begun to receive attention (Saunders, 1996). This matching can be extended to the prevention of treatment attrition.

The second purpose of the study was to focus on preprogram attrition as distinct from in-program attrition. Some studies blur this distinction by grouping together the pre- and during-counseling attrition into one category (e.g., Grusznski & Carrillo, 1988), or eliminate from analysis those men who reject treatment (e.g., DeMaris, 1989; Faulkner *et al.*, 1991). However, as Baekeland and Lundwall (1975) assert, precounseling dropouts may represent different kinds of clients with different reasons for dropping out.

Finally, unlike most other studies, we operationalized attrition according to the two operational definitions used previously. As in the most commonly used method, batterer treatment dropouts were differentiated from completers based on the program's criterion. One obvious drawback of such session-based definitions is the diverse cutoff points of attendance duration, which limits the comparability of studies and the generalizability of the predictors of dropping out. Therefore, in the second method, client's frequency of session attendance in a group is the focus so that no arbitrary definition is made about attrition.

Two theoretically distinct models of group treatment were compared in this study as part of a larger study of treatment effectiveness (Saunders, 1996). A cognitive-behavioral group (CBG) combined cognitive-behavioral and feminist perspectives. It used a combination of cognitive restructuring, relaxation/desensitization training, behavioral rehearsal, and consciousness-raising about sex roles and violence against women. The approach was highly structured, directive, and psychoeducational. In contrast,

a process-psychodynamic group (PPG) approach stressed emotional attachments, personality, and childhood traumas (described in Browne *et al.*, 1997). It emphasized group process in a much less structured format. Group cohesion was emphasized in order for the men to feel safe enough to express their feelings more directly. According to an analysis of group process (Saunders, 1996), group cohesion was somewhat higher in this condition (PPG), which may lead to a higher completion rate compared to the cognitive-behavioral approach. CBGs may be more appropriate for men who are deficient in expressive skills, less capable of self-disclosure, or are better educated. The PPG is probably more suitable for men who are more willing to disclose their problems and benefit from insight and relationship-based approaches.

Four major questions were addressed in this study:

1. Which factors are related to precounseling attrition? We predicted that a history of child abuse and unmarried marital status would be related to precounseling attrition, as in earlier studies.
2. Which factors are related to incounseling attrition? We predicted that age and education would be related to incounseling attrition, as in previous studies.
3. Does one type of treatment have a lower attrition rate? We predicted that the less structured and more cohesive PPG approach would be related to lower attrition.
4. Do predictors of attrition differ depending on the type of treatment? We predicted that the factors related to attrition in previous studies would apply only to the CBG because that is the type of approach used primarily in those studies. We expected that those who witnessed or experienced childhood abuse would be more likely to remain in the PPG treatment because of the focus on these issues in that treatment.

METHODS

Sample and Procedure

The sample consisted of 218 men, who contacted a domestic violence offender program from 1987 to 1990 at a family service agency in Wisconsin and completed at least the intake interviews. A small percentage of the men (3%) were screened out of treatment if they were developmentally disabled, violent only in a nonintimate relationship, or severely alcoholic. Intake procedures required completion of self-administered questionnaires and four to six intake interviews. Following assessment, orientation, and informed

consent procedures, men who agreed to participate in the experiment were randomly assigned to a CBG or a PPG.

Of the total sample, 134 men (62%) completed treatment, 44 (20%) dropped out during treatment, and 40 (18%) finished intake interviews but did not attend treatment (see Table I). The sample was an average of 32 years old with an average income of \$13,435. A majority of men were high school graduates (82%), with 36% attending or graduating from college. Most of the men were Caucasian, 14% African American, 4% Native American, and 3% Hispanic. Three fourths of the men were referred from the criminal justice system. About a fourth of the men were either married (8%) or cohabiting (17%), and the remaining three fourths were either single, divorced, or separated.

Dependent Variable

Participation level was divided into three categories: "nonstart," "partial treatment," and "complete treatment". The nonstart group of precounseling dropouts consisted of men who finished the intake sessions but refused treatment. Clients who completed at least 16 sessions of a total of 20 sessions were defined as completers (i.e., "continuance"). Many batterers' programs tied to the criminal justice system employ a certain number of sessions as a "critical point" to determine client completion status. This program defined incounseling dropout (i.e., "partial treatment" or "discontinuance") as missing more than four sessions. Although such criteria lack a theoretical rationale, this fixed cutoff point was known by clients and thus would have practical meaning for them, especially for criminal justice mandated men. Therapist definition of completion not based on the number of sessions, involved in a few cases, was not included.

This study used two separate logistic analysis models, each of which has a dichotomous dependent variable. First, in the analysis of precounseling attrition, there are two outcomes: refusal of treatment (nonstart group) or acceptance of treatment (partial and complete treatment groups). Second, in analysis of incounseling dropout, the response categories are completing the treatment (complete group) or leaving the group early during the treatment (partial treatment group).

In the Zero Inflated Poisson (ZIP) model (Lambert, 1992), the other part of the analysis, the dependent variable is defined as the number of counseling sessions attended. The binary part of the ZIP model compares clients who had no counseling sessions with others who attended one or more group sessions, whereas its regression part measures client's number of sessions. Compared to logit models, there is an advantage to the ZIP model

Table 1. Comparison Across Levels of Involvement

Variables	Full sample (N = 218)	1 (No treatment, n = 40)	2 (Partial treatment, n = 44)	3 (Complete treatment, n = 134)	F	SNK
Age ^a	32.4 (8.3)	30.4 (6.4)	29.5 (6.0)	34.0 (9.1)	6.7***	1, 2 < 3
Income ^a	\$13,435 (10,162)	\$11,112 (7,364)	\$12,163 (11,404)	\$14,466 (10,345)	3.5	lin.*
Anger (A) ^a	111.4 (18.8)	105.0 (17.8)	109.2 (17.9)	114.2 (19.0)	3.8*	1, 2 < 3
Depression (A) ^a	25.7 (8.3)	25.2 (8.4)	25.6 (8.1)	25.9 (8.4)	0.1	
Self-esteem (A) ^a	-7.3 (4.6)	-6.9 (4.5)	-7.6 (4.4)	-7.2 (4.8)	0.3	
Alcohol use (A) ^a	17.1 (9.0)	17.4 (10.0)	17.5 (8.9)	16.9 (8.7)	0.1	
Response bias, (or defensiveness) ^a	36.8 (8.2)	36.4 (7.6)	36.6 (9.1)	37.0 (8.0)	0.1	
Ethnicity (%)					χ^2	
White	77	60	74	84	9.5**	1 < 3
Education (%)						
<High school	18	18	32	13	11.8**	
High school	46	58	44	43		
≥Some college	36	24	24	43		
Living arrangement with partner (%)	24	22	21	26	0.6	
Referral source mandated (%)	75	80	77	73	1.0	
Witness of abuse (%)						
Yes	31	35	44	26	4.3	
Abuse victimization (%)						
Yes	88	78	88	91	4.7	lin.*
Type of batterers (%)						
family-only	18	18	27	15	3.2	

Note. (A) = Adjusted Score, SNK = Student-Newman-Keuls post hoc test, lin. = significant linear trend.

^aValues are mean (standard deviation).

* $p < .05$. ** $p < .01$. *** $p < .001$.

in its manner of defining the dependent variable. Because it does not require the categorization of continuance versus discontinuance of the program, we can avoid the arbitrary cutoff point that differentiates treatment dropouts from completers.

Independent Variables

The following independent variables were included in the study:

Demographic Variables

1) *Age* 2) *Income*: Yearly income (coded 1 = less than \$5,000; 2 = \$5,000–\$9,999; 3 = \$10,000–\$14,999; 4 = \$15,000–\$19,999; 5 = \$20,000–\$24,999; 6 = \$25,000–\$29,999; 7 = \$30,000 or more). 3) *Education*: Education (coded as 1 if grade school or less; 2 if some high school; 3 if high school degree; 4 if some college; 5 if college degree; 6 if some graduate school; and 7 if graduate degree). 4) *Race*: (coded 1 for non-White and 0 for White).

Background Variables

1) *Living arrangement*: The respondent's marital status at the time of intake was dichotomized into "living with a partner" (i.e., married, unmarried couple, or remarried) and "living without a partner" (i.e., single, separated, divorced, or widowed). 2) *Referral source*: Referral source was divided into criminal justice mandated or nonmandated. Noncriminal justice mandated clients were self-referred, referred by other social service agencies or referred by partners, friends, or other families. 3) *Witnessing abuse*: coded 1 for any past observation of father to mother physical violence and 0 for none. 4) *Victim of abuse*: classified into two groups: victims of physical abuse from parents and nonvictims of abuse. 5) *Types of batterers*: Men were classified into two subtypes according to their abusive behavior patterns. "Family-only violent men" were violent only in their intimate relationships. "Generally violent men" were involved in violence both within intimate relationships and outside of them. 6) *Alcohol use*: A modified version of the Michigan Alcohol Screening Test (10-item version; Pokorny, 1972) was given to assess the respondent's history of alcohol-related problems at the time of intake.

Psychological/Personality Variables

1) *Anger*: Respondent's level of anger was measured with a modified version of the Novaco Anger Index (Novaco, 1975). Both marital and

work/friend situations were included. The internal reliability coefficient (Cronbach's alpha) of the modified scale is .89, compared with .96 in the original 80-item scale. Each item is rated on a 5-point Likert scale, from *very little anger* to *very much anger*.

2) *Depression*: The Beck Depression Inventory (Beck *et al.*, 1961) was used to measure the respondent's degree of depression. It consists of 21 items covering somatic complaints, guilt, pessimism, and indecisiveness. Each item has four possible choices. The internal reliability coefficient (split-half) of the scale is reported as .93.

3) *Self-esteem*: Respondent's level of self-acceptance and basic feelings of self-worth were assessed by Rosenberg's Self-Esteem Scale (Rosenberg, 1965). The instrument consists of 10 items with a 4-point response format. Rosenberg (1965) reported a reproducibility coefficient of .92 and a scalability coefficient of .72 in his sample.

4) *Personality traits*: The Millon Clinical Multiaxial Inventory (MCMI-I; Millon, 1983) was used to assess respondents' personality traits. The MCMI is composed of 175 items, answered in a true/false format. Continuous scores rather than "base rate" scores were used in this analysis.

5) *Social desirability responding (SDR)*: The validity and reliability of self-reports are possibly one of the most persistent problems in assessing men who batter. The Marlowe-Crowne Scale (MCS; Crowne & Marlowe, 1964) was used to assess the participants' test-taking behavior. A modified version of the MCS was administered to the respondents, which consisted of 10 items with a 7-point Likert scale (Greenwald & Satow, 1970). The scores for the anger, depression, self-esteem, and alcohol use measures were adjusted statistically in the data analyses using the MCS (see Saunders, 1991). The MCS score was also used as a measure of defensiveness in the analysis.

Program Variable

Types of group treatment. Groups met once a week for 20 sessions, each of which lasted for 2½ hr. A total of nine groups of each theoretical approach were completed as part of this study, with an average of 9.9 men initially in each group (range = 6–14). Each individual was the unit of analysis in the study. Each group was led by professionally trained male-male or male-female teams. Leader effects were not controlled in that none of the leaders in either condition crossed over to conduct the other type of treatment.

1) *Cognitive-behavioral group*: This was a highly structured, cognitive-behavioral treatment model similar to many in use in North America (Saunders, 1996). The main goal was to teach skills incompatible with aggression while at the same time modifying rigid sex-role behaviors and attitudes.

The group therapists took a very active role in modeling behavior and guiding the men in behavioral and cognitive rehearsal. Confrontation to increase responsibility for violent behavior tended to be more frequent than in the PPGs.

2) *Process-psychodynamic group*: This was a less structured, process-oriented approach adapting some elements of psychodynamic group models (see Browne *et al.*, 1997). Compared to CBG, the therapeutic style was more likely to be supportive and empathic. Although some topics were defined by group leaders in advance, many emerged from the group process. Phases of PPG were as follows: (1) building trust and a sense of safety in the group; (2) uncovering traumatic events from childhood; (3) supporting one another and expressing emotions; (4) identifying men's alienation from themselves, each other, and their families; (5) working through termination feelings, and learning how new insights could be transferred to the real world.

Statistical Analyses

Following a descriptive analysis, two separate logit models for binary outcomes were performed (1) to test the relationship between the independent variables and treatment acceptance or rejection and (2) to estimate the effects of the predictor variables on treatment continuance or discontinuance. To select a model that fit the data, goodness-of-fit tests via likelihood statistics were used. All parameters were estimated by maximum likelihood procedures for ungrouped data with the use of the LIMDEP program (Greene, 1995).

Alternatively, on the basis of the models selected in the logit analyses, we used the ZIP regression method to predict batterer's treatment participation. The ZIP model, developed by Lambert (1992), is matched to the study data through its efficient handling of the excessive occurrence of zero counseling sessions (i.e., nonstart group). Taking into account each individual's number of visits, the model fully uses the information provided by the data. In the use of the entire set of data, the ZIP analysis is free from the selection bias that the logit model in (2) is vulnerable to. Parameter estimates were obtained by the gradient algorithm with the use of the statistical package LIMDEP (Greene, 1995). Finally, two separate binary logistic response models were conducted to examine the relationship between offender characteristics and treatment completion for cognitive-behavioral and process-psychodynamic groups.

To handle randomly missing data on the independent measures, a regression imputation strategy was adopted (see Little & Rubin, 1989). On the average, a respondent was missing a variable on 6.3% of 16 variables (excluding the MCMI). The 10 demographic, background, or group variables had response rates over 96%. To test the effect of missing data on the

estimation of the model, missing data dummy variables as predictors were entered in separate statistical analyses. If dummy variables for missing values did not have a significant impact on the dependent variable, they were excluded in the final analyses to achieve well-fitting models.

RESULTS

Comparison Across Levels of Involvement

Table I compares demographic, background, and personality variables of three levels of involvement. Men who completed treatment were significantly older, better educated, and had higher self-reported anger than those in the other two groups. The nonstart group had the lowest proportion of White men (60%), and those who completed had a significantly higher proportion (84%; $\chi^2 = 9.5$, $p < .001$). Although the overall F and chi-square tests were not significant, there were two tests of linear association that were significant with increasing involvement. There was a linear association, going from no treatment, to partial treatment, to complete treatment, with more income ($F = 3.5$, $p = .06$), and with being the victim of abuse ($\chi^2 = 4.3$, $p = .03$). There were no significant differences on depression, self-esteem, alcohol use, response bias, living with partner, mandated referral, witnessing abuse, or type of batterer.

On the MCMI measure of personality traits and syndromes, the nonstart group had a small sample size due to missing data ($n = 13$), and therefore the analysis was continued only on the comparison between the partial treatment and complete treatment groups (see Table II). The partial treatment group had significantly higher scores than the completion group on the Antisocial-scale ($t = 2.06$, $p = .04$). Those in the partial treatment group also had significantly higher scores on the Drug Abuse scale ($t = 1.88$, $p = .03$), and nearly significant higher scores on the Alcohol ($t = 1.60$, $p = .055$) and Psychotic Thinking scales ($t = 1.58$, $p = .055$). However, because of the large number of tests conducted, the findings must be viewed as very tentative.

Binary Logistic Results of Treatment Acceptance or Rejection

Table III summarizes the fitted logit equation for treatment acceptance ($n = 178$) or rejection ($n = 40$). According to the likelihood statistics, the 10 main effects-only models presented here appeared to be more parsimonious and a better fit to the observed data than any other. The results show that being White, being a victim of childhood abuse, and having more reported anger were significantly associated with "acceptance." For those who are White, the probability of accepting treatment is about 69%, whereas

Table II. MCMI-I Scores

Variables	<i>M (SD)</i>				<i>t</i>	<i>p</i>
	Full sample (<i>N</i> = 166)	Nonstart (<i>n</i> = 13)	Partial treatment (<i>n</i> = 29)	Complete (<i>n</i> = 124)		
Personality traits						
Schizoid	39.8 (26.0)	37.9 (23.6)	42.7 (27.5)	39.3 (26.1)		
Avoidant	42.0 (29.4)	40.1 (27.8)	46.9 (30.9)	41.1 (29.4)		
Dependent	58.1 (26.2)	68.0 (21.6)	52.6 (25.0)	58.4 (26.8)	−1.11	.09
Histrionic	66.7 (17.8)	65.3 (16.8)	67.7 (16.2)	66.6 (18.3)		
Narcissistic	72.0 (20.5)	76.2 (26.2)	74.3 (20.8)	71.0 (19.8)		
Antisocial	67.3 (21.0)	63.3 (20.8)	74.8 (18.8)	66.0 (21.3)	2.06	.04
Compulsive	59.3 (39.2)	62.2 (13.1)	51.9 (19.7)	60.7 (44.0)		
Passive–aggressive	56.4 (63.9)	45.7 (20.3)	57.3 (28.7)	57.4 (72.3)		
Schizotypal	44.0 (19.2)	42.2 (20.9)	44.7 (20.4)	44.1 (18.9)		
Borderline	50.4 (20.4)	46.8 (14.6)	49.7 (20.1)	50.9 (21.1)		
Paranoid	64.5 (16.3)	63.5 (21.7)	67.9 (12.8)	63.8 (16.4)	1.28	.10
Alcohol			58.0 (16.7)	52.2 (20.1)	1.60	.05
Psychotic thinking			55.6 (15.1)	50.3 (16.5)	1.58	.05
Drug abuse			73.7 (18.1)	66.6 (18.3)	1.88	.03

Note. *t* test between partial and complete treatment.

the probability of accepting treatment for non-White batterers is 47%. Although a positive relation exists between a history of child abuse and treatment acceptance, witnessing parental violence was not significantly related to treatment acceptance. Lower socioeconomic status and mandated treatment were not significantly associated with preprogram attrition in this multivariate model.

Table III. Estimated Parameters in Selected Logit Model for Treatment Acceptance vs. Rejection (*N* = 218)

Logit	β (<i>SE</i>)	<i>p</i>
Constant	−3.280 (1.81)	
Age	0.042 (0.03)	
Non-White (vs. White)	−0.925 (0.42)*	.026
Income	−0.031 (0.14)	
Education	0.061 (0.23)	
Court mandated (vs. noncourt mandated)	0.244 (0.50)	
Living with a partner (vs. without a partner)	0.432 (0.49)	
Witness of abuse (vs. nonwitnessed)	−0.559 (0.42)	
Victim of abuse (vs. nonvictim of abuse)	1.125 (0.51)*	.029
Alcohol use	−0.019 (0.02)	
Anger	0.027 (0.01)*	.018
Log likelihood (<i>df</i>)	−93.109 (10)	

Note. *SE* = standard error, *df* = degrees of freedom, treatment acceptance = 1, treatment rejection = 0, overall $\chi^2 = 21.6$; *p* = .02.

**p* < .05.

Binary Logistic Results of Treatment Continuance or Discontinuance

Table IV reports the results of two binary logit models for examining the association between predictor variables and batterers' continuance or discontinuance of treatment using 178 participants, who participated in at least one group session. To check the equivalency between missing and observed cases of personality measures, chi-square or *t* tests were undertaken individually with all variables. Results indicate one statistically significant relationship with the missing dummy variable. Participants who did not complete the MCMI had significantly lower educational levels ($t = 2.90$; $p = .004$ with two-tailed significance). Because missing cases on the MCMI were related to lower levels of schooling, the independent effect of education on continuation becomes weakened when "missing on MCMI" is simultaneously entered in the analysis.

In Model 1, the parameter estimates showed that younger men and those with higher levels of antisocial traits were more likely to drop out of treatment. Type of group treatment reached marginal significance in predicting continuation. The estimated odds of PPG members completing the group were 2.2 times higher than for CBG members. In the presence of missing

Table IV. Estimated Parameters in Selected Logit Models for Treatment Continuance vs. Discontinuance ($N = 178$)

Logit	Model 1		Model 2	
	β (SE)	<i>p</i>	β (SE)	<i>p</i>
Constant	-3.050 (2.21)		-5.205 (2.40)	
Age	0.064 (0.03)*	.042	0.074 (0.03)*	.026
Non-White (vs. White)	-0.072 (0.52)		0.190 (0.54)	
Income	0.166 (0.16)		0.221 (0.17)	
Education	0.413 (0.27)		0.441 (0.28)	.10
Court mandated (vs. noncourt mandated)	0.414 (0.53)		0.490 (0.54)	
Witness of abuse (vs. nonwitnessed)	-0.809 (0.44)	.063	-0.835 (0.45)	.064
Victim of abuse (vs. nonvictim of abuse)	0.498 (0.67)		2.304 (0.91)*	.011
Process-psychodynamic group (vs. cognitive-behavioral group)	0.785 (0.43)	.066	4.661 (1.61)**	.004
Anger	0.019 (0.01)		0.024 (0.01)	.062
Antisocial personality	-0.026 (0.01)*	.038	-0.032 (0.01)*	.015
Missing on income (vs. observed)	-0.493 (0.62)		-1.018 (0.66)	
Missing on antisocial personality (vs. observed)	-1.869 (0.53)***	.0005	-2.232 (0.58)***	.0001
Treatment $\times$ Victim of Abuse			-4.272 (1.66)**	.010
Log likelihood (<i>DF</i>)	-77.724 (12)		-73.498 (13)	

Note. SE = standard error, *df* = degrees of freedom, treatment continuance = 1, treatment discontinuance = 0. Model 1: $\chi^2 = 43.6$, $p = .0001$; Model 2: $\chi^2 = 52.1$, $p < .0001$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

data on antisocial personality, the effects of education on treatment continuance failed to achieve statistical significance. Instead, that missing variable becomes the largest contributor to dropping out of counseling.

Model 2 adds a first-order interaction between treatment approach and history of abuse into Model 1. Results show that the odds of completion are decreased by 3% for each one level increase in antisocial personality scores. The estimated odds of completing are 1.08 times higher for each 1-year increase in age. Contrary to expectations, there was a negative relationship between the Treatment-Type $\times$ Victim-of-Abuse interaction on continuation: Men who experienced child abuse were more likely to leave PPG treatment early.

ZIP Models for Batterers' Treatment Participation Patterns

Based on the models fitted earlier to the logit equation, two ZIP regression models estimated the effects of predictor variables on batterers' treatment follow-through (Table V). The Vuong statistic (see Greene, 1994) for both ZIP models is around 6, which indicates ZIP's superiority over the simple Poisson case. As the splitting logit model shows, the magnitude of coefficients and standard errors are almost the same with the logit model in Table IV. In the regression analyses, the general findings for factors related to attendance do not markedly diverge from the previous logit outcome. However, a particularly interesting feature is that each of the predictors is very significant with substantially smaller estimate sizes.

The largest contributors to batterers' attendance duration in Model 1 are group type, level of anger, witnessing of abuse, missing data on antisocial personality, and age. Unlike the results of the logit models, antisocial personality is not related to the frequency of attendance, but education is related to attendance. To illustrate the results in more detail, the probability of having 20 sessions attended is about 5% for those in PPG, whereas the corresponding probability is 2.5% for men in CBG. For batterers who have a graduate degree, the probability of participating in all the sessions is about 6%. However, for men with grade school education or less, the relative probability is only .16%. Regression Model 2 also indicates a significant interaction effect of treatment type and victims of abuse on attendance.

Logit Results for Continuance by Treatment Type

Table VI shows the results of two logit models for testing the effects of offender characteristics on the completion of each type of treatment. The

Table V. Estimated Parameters in ZIP Models for Batterers' Treatment Participation Patterns (*N* = 218)

Predictors	β (<i>SE</i>)	<i>p</i>	β (<i>SE</i>)	<i>p</i>
	Regression Model 1		Regression Model 2	
Constant	1.871 (0.18)		1.591 (0.18)	
Age	0.007 (0.25E-02)**	.009	0.007 (0.24E-02)**	.004
Non-White (vs. White)	−0.014 (0.04)		0.008 (0.04)	
Income	0.017 (0.01)		0.017 (0.01)	
Education	0.040 (0.02)	.055	0.038 (0.02)	.08
Court mandated (vs. noncourt mandated)	0.041 (0.04)		0.043 (0.04)	
Witness of abuse (vs. nonwitnessed)	−0.120 (0.04)***	.0006	−0.112 (0.04)***	.001
Victim of abuse (vs. nonvictim of abuse)	0.083 (0.06)		0.360 (0.07)***	.0000
Process-psychodynamic group (vs. cognitive-behavioral group)	0.132 (0.03)***	.0000	0.565 (0.13)***	.0000
Alcohol use				
Anger	0.004 (0.11E-02)***	.0001	0.004 (0.11E-02)***	.0001
Antisocial personality	−0.001 (0.96E-03)		−0.002 (0.92E-03)	.09
Missing on income (vs. observed)	0.009 (0.07)		−0.015 (0.08)	
Missing on antisocial personality (vs. observed)	−0.379 (0.04)***	.0000	−0.406 (0.04)***	.0000
Treatment × Victim of abuse			−0.475 (0.13)***	.0004
	Splitting Model (logit)		Splitting Model (logit)	
Constant	3.279 (2.28)		3.279 (2.29)	
Age	0.042 (0.03)		0.042 (0.03)	
Non-White (vs. White)	−0.925 (0.43)*	.03	−0.925 (0.43)*	.03
Income	−0.031 (0.16)		−0.031 (0.16)	
Education	0.061 (0.26)		0.061 (0.26)	
Court mandated (vs. noncourt mandated)	0.244 (0.55)		0.244 (0.55)	
Living with a partner (vs. without a partner)	0.432 (0.54)		0.432 (0.54)	
Witness of abuse (vs. nonwitnessed)	−0.558 (0.44)		−0.558 (0.44)	
Victim of abuse (vs. nonvictim of abuse)	1.125 (0.53)*	.03	1.125 (0.52)*	.03
Alcohol use	−0.019 (0.02)		−0.019 (0.02)	
Anger	0.027 (0.013)*	.04	0.027 (0.013)*	.04
Log likelihood	−712.631		−707.053	
Vuong statistics	6.037		5.996	

* *p* < .05. ** *p* < .01. *** *p* < .001.

Table VI. Comparison of Two-Group Treatments in Selected Logit Models

Logit	CBG treatment ($N = 91$)		PPG treatment ($N = 87$)	
	β (SE)	p	β (SE)	p
Constant	-8.191 (4.37)		-0.320 (3.60)	
Age	0.190 (0.07)**	.006	0.034 (0.04)	
Non-White (vs. White)	-1.499 (1.01)		1.211 (0.80)	
Income	-0.172 (0.28)		0.568 (0.29)*	.05
Education	0.789 (0.50)		0.339 (0.38)	
Court mandated (vs. noncourt mandated)	0.109 (1.01)		1.318 (0.76)	.08
Witness of abuse (vs. nonwitnessed)	-0.998 (0.84)		-1.005 (0.68)	
Victim of abuse (vs. nonvictim of abuse)	2.947 (1.31)*	.024	-1.302 (1.35)	
Anger	0.034 (0.02)		0.005 (0.02)	
Antisocial personality	-0.044 (0.02)*	.044	-0.022 (0.02)	
Missing on income (vs. observed)	-1.323 (1.45)		-0.908 (0.92)	
Missing on antisocial personality (vs. observed)	-3.890 (1.07)***	.0003	-1.246 (0.91)	
Log likelihood (df)	-29.452 (11)		-34.052 (11)	
Partial treatment	30% ($n = 27$)		19.5% ($n = 17$)	
Complete treatment	70% ($n = 64$)		80.5% ($n = 70$)	

Note. SE = standard error, df = degrees of freedom, treatment continuance = 1, treatment discontinuance = 0.

* $p < .05$. ** $p < .01$. *** $p < .001$.

adequacy of the random assignment was checked, and there were no significant differences between the groups on any of the variables included in the study. In the CBG, older men, those with a history of child abuse, and those with nonmissing observations on the MCMI (higher education proxy) were more likely to complete treatment. On the other hand, those with higher antisocial personality scores were less likely to complete CBG treatment. In the PPG treatment, men with more income tended to continue. Even though PPG focused on resolution of childhood trauma and personality issues, none of these variables were significantly associated with treatment completion in PPG.

DISCUSSION

Acceptance or Refusal of Group Treatment

Several predictors differentiated acceptors and rejecters of group treatment. Non-White clients refused treatment significantly more often than White batterers. A general mistrust of majority agencies may explain some

of the refusals. Many of these men may also feel more comfortable in a same-race group, which were not offered during this study (Williams, 1994). Batterers with higher levels of anger were more likely to accept treatment. Men who report more anger tend to belong to an "emotionally volatile" type who have a history of seeking help voluntarily (Saunders, 1992). It is also conceivable that those reporting higher levels of anger were more self-aware, which may give some incentives to join the group. Like Hamberger and Hastings' study, batterers who experienced physical abuse as children were more likely to accept treatment (Hamberger & Hastings, 1986). Prior victimization, or at least the awareness of this victimization, may give them some motivation to work on the emotional recovery from this victimization. Unlike Gondolf and Foster's finding, men who lived with partners were not more likely to accept treatment (Gondolf & Foster, 1991).

Continuance or Discontinuance of Group Treatment

The logit and ZIP analyses found several differences between the complete and partial treatment groups, or predictions of the number of sessions attended. Age was a significant predictor of treatment involvement, as prior studies have found (e.g., DeMaris, 1989; Saunders & Parker, 1989). As men become older, they may attain motivation for change as they increasingly learn about the consequences of their violence. Also consistent with earlier investigations (Grusznski & Carrillo, 1988; Saunders & Parker, 1989), clients' educational attainment and higher levels of anger were found to be related to continuation. In contrast to previous research (Grusznski & Carrillo, 1988), witnessing of abuse appeared to be a stronger predictor of premature dropout. Somewhat inconsistent results were found between the logit and ZIP analyses for antisocial personality.

As predicted, the process-psychodynamic approach was more likely to retain clients in the program. The emphasis on emotional safety and cohesion in these groups might have lowered attrition. However, PPG treatment was less effective in retaining men who experienced child abuse. The brief treatment model (PPG), stressing an open exchange of feelings, may have introduced childhood trauma too soon for some men's comfort.

Group Methods and Continuation

In CBGs older batterers stayed longer in the group. As indicated above through the interaction analysis, abuse experience differentially predicted

attrition. Although men in the CBG treatment with higher antisocial scores were less likely to remain in CBG, those with antisocial traits who remained tended to have better outcomes (Saunders, 1996). Criminal justice mandated men seemed to prefer a much less structured format with a supportive environment (PPG; approached significance, $p = .08$).

Implications for Research and Practice

Results of this study have several program and research implications. The absence of any significant association between criminal justice referral and batterer's treatment continuance may suggest the need for improved criminal justice intervention, such as close monitoring by probation officers of those at high risk of treatment rejection and discontinuation.

Providers may need to tailor each phase of the program to the needs of those most likely to drop out. Extra services for non-White, younger, or less educated abusers might be established. The majority of programs nationally do not show signs of culturally competent practice, and only a fourth have a part of their programs that encourage participation by minority clients (Williams & Becker, 1994). Outreach to minority communities, treatment within minority communities, same-race groups, matching the race of intake worker and client when requested, culturally sensitive program materials, increasing the number of minority workers, and other measures may help to overcome the greater attrition rate of minorities. These men may also need extra help with problems of unemployment. Men with limited education may need additional help in using program materials.

While maintaining clear guidelines about group goals and accountability, treatments may need to be more flexible, focus on the therapeutic alliance, and build more cohesion. Murphy and Baxter (1997), for example, caution against intense confrontation because it is likely to increase resistance and reinforce the belief that coercion is necessary in relationships. In a test of attendance-enhancing procedures, personal notes and telephone calls before the initial session and personal contact after missed sessions were shown to increase treatment attendance (Taft *et al.*, 2001). Another brief intervention was effective in reducing attrition by focusing in the first session on arousing compassion in the men for their own childhood traumas (Stosny, 1994). Another method showing promise was a day and a half marathon orientation session. It was more effective than a four-session preparation group in retaining men in an ongoing group program (Tolman & Bhosley, 1990). More appropriate matching between the characteristics of client and treatment type could be another way to improve client retention. For example,

research indicates that structured, psychoeducational formats retain clients who are older and better educated.

Limitations of the study indicate some directions for future research. Subsequent research might determine what kinds of group process variables have an impact on attrition. Research should also study variables associated with the quality of the relationship between the practitioner and clients, and among group members themselves. More studies need to directly ask the men why they drop out. Finally, attrition research needs to be placed in a theoretical framework, for example the transtheoretical stages of change model (e.g., Levesque *et al.*, 1998), so that knowledge of the underlying mechanisms of attrition can be advanced. Such research initiatives would represent important steps toward overcoming the most significant problem facing abuser programs.

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