

Leave or Stay?

Battered Women's Decision After Intimate Partner Violence

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Battered women's reasons for staying with or leaving their male partners are varied and complex. Using data from the Domestic Violence Experience in Omaha, Nebraska, a discrete-time hazard model was employed to examine a woman's decision based on four factors: financial independence, witness of parental violence, psychological factors, and the police response to the domestic violence call. Findings regarding the first three factors are consistent with previous findings. However, a negative police response did not deter a woman from leaving, which is a different finding from previous studies.

Keywords: *domestic violence; leaving; discrete-time hazard model*

Battered women's reasons for staying with or leaving their male partners are varied and complex. There are some conflicting and inconclusive findings in the domestic violence empirical literature about why women choose to leave or stay, warranting further investigation of leave and stay variables. Using data from the Domestic Violence Experience in Omaha, Nebraska, this study employed a discrete-time hazard model to examine a woman's decision based on four factors: financial independence, witness of parental violence, psychological factors, and the police response to the domestic violence call. The discrete-time hazard model is a useful method to examine leave or stay variables, but it is rarely used in violence studies.

Literature Review

Early literature on domestic violence portrayed battered women as masochists who provoked their abuse and had no interest in leaving the

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relationship. More recent literature moved away from “blaming the victim” and examined various macro and micro barriers to leaving (Anderson & Saunders, 2003). Several variables are associated with staying in an abusive relationship. Four of these associated factors are examined in this study and are the topics of this literature review: a woman’s financial dependence on her male perpetrator, her history of witnessing parental violence, her mental health, and police response to the domestic violence call.

Since the early 1980s, researchers have found that battered women who are economically dependent are less likely to leave (e.g., Kalmuss & Straus, 1982). Multivariate studies suggest that income is the strongest predictor of leaving or staying. Economic dependency on the batterer is the primary reason women do not leave (for a review see Anderson & Saunders, 2003; Barnett, 2000) and the primary reason they return, with economic concerns prevailing over safety (Johnson, 1992). It is a commonly accepted belief that escaping domestic violence leads to poverty (Hetling & Born, 2005). Although some studies found that employed women or women on welfare are more likely to leave their batterer (for a review see Anderson & Saunders, 2003), the high number of women on welfare who are domestic violence victims calls for further research (for a review, see Riger & Staggs, 2004, and Tolman & Raphael, 2000). Additionally, there is conceptual and anecdotal literature that suggests that domestic violence is a barrier for women trying to exit welfare, but there is very little empirical data (Hetling & Born, 2005).

Although economic dependency is ranked as the primary reason women do not leave, problems within the criminal justice system are believed to rank second (Barnett, 2000). Battered women need protection and it is more difficult to leave if the woman feels unprotected by the criminal justice system (Ballentine, 2005). One of the stumbling blocks within the criminal justice system is police response to domestic violence. Police play an important role in whether women leave or stay (for a review, see Barnett, 2000). Police can assist women with escape or construct barriers (Grigsby & Hartman, 1997). If a woman finds contacting the police to be unhelpful (Coulter, Kuehnle, Byers, & Alfonso, 1999; Hamilton & Coates, 1993), especially when the responding officer sides with the abuser, that woman may be less likely to leave.

Longitudinal studies of children who witness parental violence have not been conducted and there are many limitations in the research that has been conducted (for a review, see Carlson, 2000). However, there are retrospective studies of adult women and it is generally agreed that exposure to parental violence is a risk factor for domestic violence (e.g., Choice, Lamke, & Pittman, 1995; Downs & Miller, 1998) and that battered women are more likely to have been exposed to parental violence than other women

(Barnett, 2001; Holden, Geffner, & Jouriles, 1998). Anderson and Saunders (2003) reviewed the several studies that examined a woman's childhood history of family violence as a predictor for leaving or staying. The majority of these studies found no significant results. Some studies reported that women who witnessed parental violence and/or were abused as children were more likely to leave an abusive partner than women who were not child witnesses or victims. Only a few studies found that women exposed to domestic violence as children were more likely to return to an abusive partner. According to Anderson and Saunders (2003), although the findings in these studies are inconsistent, a "violence history may sometimes bolster women's determination to escape" (p. 170).

Battered women's mental health may be deleteriously affected by several emotional responses to interpersonal violence, impacting whether they leave or stay: fear, self-esteem, and feelings of responsibility. Battered women may not leave because violence may lead the victim to experience intense, crippling fear for herself and her family's safety (for review, see Barnett, 2001). This fear is grounded in reality, as the violence may not end when a woman leaves (Fleury, Sullivan, & Bybee, 2000) and may escalate (Browne & Bassuk, 1997) possibly to femicide or attempted femicide (McFarlane, Campbell, & Watson, 2002). Fear of reprisal is less likely to result in a police report if the victim knew the offender, particularly if they were married (Felson, Messner, Hoskin, & Deane, 2002; Singer, 1988); the link between calling the police and actually leaving an intimate partner is not known.

Low self-esteem is a second emotional response that may impact leaving or staying. Most recent studies concluded that battered women suffer from low self-esteem as a result of the violence in their childhood and/or adulthood (Barnett, 2001), and in turn this low self-esteem entraps them (Follingstad, Hause, Rutledge, & Polek, 1992). Self-esteem improves when women are no longer abused (Aguilar & Nightengale, 1994).

A third emotional response is internal locus of control, and the research results are mixed. Research has shown that women currently in abusive relationships had a more external locus of control (Clements, Sabourin, & Spiby, 2004; Harway & Hansen, 2004), though some had expectations for internal control in the future (Clements et al., 2004), whereas those in nonabusive relationships had an internal locus of control (Suzuki, 2005). Some scholars suggest that women with internal locus of control blame themselves for the violence (Sackett & Saunders, 1999), whereas others disagree (Clements et al., 2004).

It could be that women with an internal locus of control do not blame themselves for abuse, but they do feel responsible for their reaction to the

abuse—leaving or staying. Some studies found that victims tend to blame themselves (e.g., Andrews & Brewin, 1990), whereas other studies found victims do not (e.g., Campbell, 1990). In a recent study of a community-based sample of nonvictims, the majority of the respondents did not think the victim was responsible for the assault, but they felt that victims were responsible for the solution to the violence (Taylor & Sorenson, 2005), suggesting that society at large may covertly still “blame the victim.” Self-blame and/or professionals’ and society’s blame of victims may contribute to women’s remaining trapped with the batterer. One study determined that women could leave only after they stopped believing they were responsible for the abuse (Landenberger, 1989).

Based on the available research and literature, this study investigated four hypotheses:

Hypothesis 1: There is no association between a battered woman’s stay/leave decision and her financial dependence on her batterer.

Hypothesis 2: There is no association between a battered woman’s stay/leave decision and individual psychological characteristics.

Hypothesis 3: There is no association between a battered woman’s stay/leave decision and law enforcement’s behavior during the incident.

Hypothesis 4: There is no association between a battered woman’s stay/leave decision and a history of domestic violence between her parents or parental figures.

Method

This study used the data from the Domestic Violence Experiment in Omaha, Nebraska, 1986–1987 (Dunford, Huizinga, & Elliott, 1994). The purpose of the original data collection was to corroborate previous data that suggested that arrest deters further domestic violence (Sherman & Berk, 1984). Domestic violence cases reported to the police department of Omaha, Nebraska, between 4 p.m. and midnight were considered for inclusion, which included about 60% of Omaha’s 9-1-1 dispatch calls. Among these, a case was eligible for the experiment if both victim and perpetrator were age 18 or older and both parties had lived together some time during the year preceding the assault (for more detail, see Dunford, Huizinga, & Elliott, 1990).

A total of 577 domestic violence cases were selected for inclusion in the original study. Although the victim report was combined with police administrative record in the original study, this study only used the victim report part of the original data. Victim reports were collected from three interviews with victims 1 week, 6 months, and 12 months after the domestic violence incident, thus allowing this study to estimate three time-specific hazard

rates. The number of respondents who completed interviews for 1 week, 6 months, and 12 months after the domestic violence incident were 477 (81%), 438 (76%), and 416 (72%), respectively. However, for the purpose of the present study, only female respondents who reported that they were battered by intimate relationship partners were included ($n = 452$ at Wave 1).

Measurements

The dependent variable (LEAVE), or event of interest, was the change of the relationship with the perpetrator and equaled 1 if the respondent, after the incident of domestic violence, left the perpetrator at each time point, and 0 otherwise. To estimate the period-specific baseline hazard rates, panel wave variable (TIME) was recoded into three dummy codes (WK1, 6MO, 12MO) in a way that each represented a corresponding time period.

Several variables related to victim's psychological status were included in independent variables of this study. The Center for Epidemiologic Studies Depression scale (Radloff, 1977) and the Rosenberg's Self-Esteem Scale (Rosenberg, 1989) were used to measure respondent's level of depression (DEPRESS_{*t*}) and self-esteem (SELFEST_{*t*}), respectively. Locus of control was measured using a 17-item Locus of Control Behaviour scale (Craig, Franklin, & Andrews, 1984), asking about respondents' feelings and beliefs about internal control (e.g., "Success is hard work, not luck") and/or external control (e.g., "People are victims of things beyond their control") of what happened in their lives. A 6-point Likert-type scale (i.e., 0 = *strongly disagree*; 5 = *strongly agree*) was used to answer the questions. Mean scores were calculated with items measuring external control reverse coded, which resulted in a variable (CONTROL_{*t*}) measuring respondents' internal locus of control (Cronbach's $\alpha = .72$). Finally, four questions asking about victims' fear related to the perpetrators and in general were used to measure level of fear (FEAR_{*t*}). Respondents answered the questions using 4-point Likert-type scale of which mean scores (Cronbach's $\alpha = .84$) were calculated and used in this study.

Also, relationship variables such as the victim's financial independency on the perpetrator (FINDEP_{*t*}), whether she lived with the perpetrator at the time of battered incidence (LIVW), whether the victim witnessed violence between her parents (VIOPAR), and whether police took sides in the reported incidence and, if yes, whether the police took the perpetrator's side (PPTSIDE) were included into the study. Also included in the independent variables were ethnic minority status coded as 1 if non-White and 0 otherwise (NOWH), employment status (EMP), and whether the victim received welfare (WELF). In the set of listed independent variables, those

variables with subscripted suffix of t are time-varying covariates, whereas those without the suffix were fixed covariates.

Discrete-Time Hazard Model

In this study, a discrete-time hazard model was used to test four hypotheses about the battered women's decision to leave the perpetrator, using the three-wave panel data. A discrete-time hazard model is an application of log-rate models for a event history, which is recommended especially when events take place at a well-defined time period but the exact timing of the event is unknown, as in the panel design of this study (Powers & Xie, 2000). Additionally, discrete-time event analysis is strengthened if the data set is constructed prospectively with repeated waves of data collection (Reardon, Brennon, & Buka, 2002), as this data set was. Although several studies of predictors of leaving examined variables over time (e.g., Okun, 1986), few if any have used a discrete-time hazard model. This model provided a way to take full advantage of the three-wave longitudinal design to learn whether and to what extent the set of independent variables were associated with battered women's leave/stay decision.

Before implementing the discrete-time hazard model procedure, the three-wave panel data set of 452 respondents was rearranged to create a person-period data set of 890 records for the analyses. Each respondent had a separate observation for every wave until the event of interest (i.e., leave) occurred. For example, a woman with Case I.D. 7 in Table 1 appeared three times in the person-period data because the event of interest did not happen during the study and was censored. On the other hand, Case 8 and Case 10 through 14 contributed to the same data set only twice and once, respectively, because they left their batterers earlier.

A series of discrete-time hazard models were calculated to address the hypotheses of this study. Model A is the baseline model that includes the three time-specific dummy variables to estimate the baseline hazard rate without other substantive covariates. This model can be written as

$$\begin{aligned}\hat{\eta}_{it} &= \log\left(\frac{\hat{p}_{it}}{1 - \hat{p}_{it}}\right) = \sum_{t=1}^3 \hat{\alpha}_t(TIME)_{it} \\ &= \hat{\alpha}_1(WK1) + \hat{\alpha}_2(SIXMO) + \hat{\alpha}_3(TLVMO)\end{aligned}\quad (1)$$

where p_{it} is the discrete-time hazard rate, which is the conditional probability that an event occurs at time period t given that it has not yet occurred to the i^{th} individual.

Table 1
Layout of the Event-Oriented Data File

ID	Time	Wk1	6Mo	12Mo	Leave	Nowhite	Emp	Welfare	Selfest	Control
7	1	1	0	0	0	1	Yes	No	2.7	3.0625
7	2	0	1	0	0	1	Yes	No	3	3.647059
7	3	0	0	1	0	1	Yes	No	3.2	3.470588
8	1	1	0	0	0	1	No	No	2.5	3.294118
8	2	0	1	0	1	1	Yes	Yes	3.7	3.235294
9	1	1	0	0	0	0	No	No	4	3.647059
9	2	0	1	0	0	0	No	No	3.9	4.176471
9	3	0	0	1	0	0	No	Yes	3.7	4.647059
10	1	1	0	0	1	0	No	Yes	2.5	3.647059
11	1	1	0	0	1	0	Yes	No	3.3	3.705882
13	1	1	0	0	1	0	Yes	Yes	2.3	2.352941
14	1	1	0	0	1	0	Yes	No	2.2	4
15	1	1	0	0	0	1	Yes	No	3.6	2.588235
15	2	0	1	0	0	1	Yes	No	3.3	2.235294
15	3	0	0	1	0	1	Yes	No	3.3	2.529412

In Model B through F, each set of substantive covariates, or independent variables, were added to the baseline model, Model A, to examine the effect of each set of variables to the hazard rate of battered women's leaving perpetrators. The sets of covariates are: individual characteristics variables for Model B (NOWH, EMP, WELF), family history variable for Model C (VIOPAR), police action variable for Model D (PPTSIDE), relationship with perpetrators variables for Model E (LIVW, FINDEP), and victim's psychological characteristics measures for Model F (DEP, FEAR, SLFES, CONT).

The full model, Model G, includes all the substantive covariates and the time-specific dummy variables as well. This final model can be rewritten as

$$\begin{aligned}
 \hat{\eta}_{it} = \log\left(\frac{\hat{P}_{it}}{1 - \hat{P}_{it}}\right) &= \sum_{t=1}^3 \hat{\alpha}_t(TIME)_{it} + \sum_k \hat{\beta}_k x_{ik(t)} = \hat{\alpha}_1(WK1) + \hat{\alpha}_2(SIXMO) \\
 &+ \hat{\alpha}_3(TLVMO) + \hat{\beta}_1(NOWH) + \hat{\beta}_2(EMP_t) + \hat{\beta}_3(WELF_t) + \hat{\beta}_4(VIOPAR) \quad (2) \\
 &+ \hat{\beta}_5(PPTSIDE) + \hat{\beta}_6(LIVW) + \hat{\beta}_7(FINDEP_t) + \hat{\beta}_8(DEP_t) \\
 &+ \hat{\beta}_9(FEAR_t) + \hat{\beta}_{10}(SLFES_t) + \hat{\beta}_{11}(CONT_t)
 \end{aligned}$$

Stata 9.2 (StataCorp, 2005) was used to conduct data management and descriptive statistics and to estimate the discrete-time hazard models.

Results

Findings From Descriptive and Bivariate Analyses

Respondent's age ranged from 17 to 64 years old at the initial battering incident. On average, they were high school graduates. About half of the respondents were employed for each time point and 40% were receiving welfare. A more detailed description of the sample is presented in Table 2.

Table 2 also presents how those who left the perpetrators were different from those who stayed at each time point. Most notably in the basic sample characteristics variables, victims in the leave group were more likely to receive welfare than those in the stay group were throughout the period (e.g., $\chi^2 = 7.86$, $df = 1$, $p = .005$ in Wave 1). Two variables involving the victim's relationship with the perpetrator appeared to be significantly related with victim's leave/stay decision: victims who lived with the perpetrators at the time of violence were less likely to leave the perpetrators at each time point (e.g., $\chi^2 = 74.73$, $df = 1$, $p < .001$ in Wave 1) and victims more financially independent from the perpetrators were more likely to leave the perpetrators (e.g., $t(450) = 6.19$, $p < .001$ in Wave 1).

Interestingly, despite the general belief that inappropriate police action would negatively affect battered women's decision to leave the perpetrator (for review, Barnett, 2000), those who reported that police took the perpetrator's side were more likely to leave the perpetrators, which was significant in Wave 2 of the study ($\chi^2 = 6.50$, $df = 1$, $p = .011$). However, those who witnessed violence between parental figures were less likely to leave in this sample, which was significant in Wave 3 ($\chi^2 = 4.36$, $df = 1$, $p = .037$).

Data suggested that two of victim's psychological measures were associated with battered women's leave/stay decision. Separate independent group *t* test results suggested that women with low level of fear and high level of self-esteem were more likely to leave the perpetrators (e.g., $t(450) = 4.31$, $p < .001$ in Wave 1 and $t(420) = 2.65$, $p = .008$ in Wave 2, respectively).

Findings From Discrete-Time Hazard Model

Table 3 presents the results of the data analysis using the discrete-time hazard model to estimate exit rate of battered women's leaving the perpetrators. Each model was compared with the baseline model, Model A, to examine whether the inclusion of additional variables significantly enhanced overall model fit when compared to the baseline model. A

Table 2
Cross-Sectional View of Sample Characteristics

	1 Week After Battered			6 Months After Battered			12 Months After Battered		
	Yes (<i>n</i> = 175)	No (<i>n</i> = 277)	All (<i>n</i> ₁ = 452)	Yes (<i>n</i> = 211)	No (<i>n</i> = 211)	All (<i>n</i> ₂ = 422)	Yes (<i>n</i> = 237)	No (<i>n</i> = 163)	All (<i>n</i> ₃ = 400)
Characteristics									
Age ^a (average)	28.9	29.7	29.4	29.0*	31.0*	30.0	29.5**	32.1**	30.6
Years of schooling ^a (average)	11.8	11.9	11.9	11.7	12.0	11.9	11.7	12.1	11.9
Non-White ^b (%)	42.9	43.3	43.1	48.3	38.9	43.6	48.7*	36.7*	43.8
Employed ^b (%)	54.3	49.5	48.7	53.6	46.0	50.2	49.3	46.3	51.9
Receiving welfare ^b (%)	47.4***	34.2***	39.3	53.1***	35.1***	44.1	50.2***	33.7***	43.5
Relationship with perpetrator									
Live with perpetrator at the time of violence ^b (%)	44.6***	83.4***	68.4	53.5***	83.4***	68.5	56.5***	85.9***	68.5
Victim financially independent from the perpetrator ^a (average)	4.42***	3.65***	3.94	4.73***	3.62***	4.17	4.76***	3.57***	4.28
Police action									
Take perpetrator's side ^b (%)	5.7	2.5	3.8	6.1*	1.4*	3.8	4.6	1.8	3.5
Family history									
Witnessed violence between parents ^b (%)	31.9	34.9	33.7	30.0	37.4	33.7	29.2*	39.3*	33.3
Psychological measures									
Depression ^a	2.20	2.26	2.24	1.83	1.84	1.83	1.78	1.76	1.77
Fear ^a	2.28***	2.63***	2.50	2.79***	2.96***	2.88	2.90**	3.08***	2.97
Self-esteem ^a	3.15	3.08	3.11	3.30***	3.18**	3.24	3.32	3.25	3.29
Control ^a	3.36	3.25	3.29	3.51	3.45	3.48	3.48	3.55	3.52

a. Independent group *t* test was performed.

b. Chi-square test of independence was performed.

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

deviance-based hypothesis test for each model was used and all the models but Model C ($\chi^2 = 1.31$, $df = 1$, $p = .253$) and Model D ($\chi^2 = 3.75$, $df = 1$, $p = .053$) suggested that the additional variables should be retained in the models.

In Model A, the estimated coefficients $\hat{\alpha}_1 - \hat{\alpha}_3$ of the baseline model, and substitution of these values to Equation 1, gave the shape of the baseline hazard rate shown in Figure 1. Figure 1 shows that in the full sample, the possibility of leaving decreases fairly steadily over time. In the first week after the incident of battering, the fitted hazard probability is .373, by 6 months it has dropped to .311, and then it dropped again slightly to .304. The baseline hazard rate for each model differs from the others because adding other covariates into the baseline model created subgroups in the sample, and it should be interpreted as the baseline hazard rate for a specific group. In Model D, for example, the inverse-logit transformation shown in Equation 1 for the estimated parameter produces the baseline hazard rates of .365 for 1 week, .306 for 6 months, and .302 for 12 months. However, because there is a covariate (PPTSIDE), which was coded as 1 if police took the perpetrator's side and 0 otherwise, the baseline hazard rate for each period is only for those women who answered that police did not take the perpetrator's side when they were called.

In Model B, adding the individual characteristics variables increased the overall fit significantly ($\chi^2 = 18.02$, $df = 3$, $p < .001$), but a parameter estimation only for WELF is significant. In other words, women who received welfare were 90% more likely to leave than those who did not. However, in the full model, Model G, the effect of WELF disappeared when controlling for the effects of other covariates. The analysis result of a separate model with the individual characteristics variables and the level of a battered woman's financial independency (FINDEP) showed that the initially significant association between welfare and a battered woman's leave decision was not significant after the level of financial independency variable was taken into account (results not shown in the table).

In Model C, the effect of battered women's witnessing violence between parents (VIOPAR) is not statically significant. The possibility of battered women leaving the perpetrator remained the same regardless of whether or not they witnessed violence between parents.

Whether police took the perpetrator's side when they were called (PPTSIDE) in Model D did not make a difference in leaving. An examination of the overall fit indicator of this model suggests that this variable, PPTSIDE, should be excluded from the model estimation when compared to the baseline model, Model A ($\chi^2 = 3.75$, $df = 1$, $p = .053$).

Table 3
Logit Link Discrete-Time Hazard Model of Leaving Perpetrator

	Model A $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)	Model B $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)	Model C $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)	Model D $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)	Model E $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)	Model F $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)	Model G $\hat{\alpha}_i$ (SE $\hat{\alpha}_i$)
Time period effects							
1 week (WK1)	-0.520*** (0.101)	-0.897*** (0.183)	-0.461*** (0.113)	-0.552*** (0.102)	-2.410*** (0.397)	-1.787* (0.905)	-3.476** (1.076)
6 months (6Mo)	-0.797*** (0.133)	-1.178*** (0.205)	-0.738*** (0.143)	-0.818*** (0.134)	-2.499*** (0.419)	-1.904* (0.888)	-3.367** (1.063)
12 months (12Mo)	-0.828*** (0.166)	-1.174*** (0.227)	-0.769*** (0.174)	-0.838*** (0.167)	-2.367*** (0.432)	-1.904* (0.890)	-3.164** (1.063)
Covariate Effects							
	$\hat{\beta}$ (SE $\hat{\beta}$)						
Individual characteristics							
Non-White (NOWH)		0.127 (0.153)					-0.230 (0.179)
Employed (EMP)		0.118 (0.173)					-0.046 (0.204)
Receiving welfare (WELF)		0.640*** (0.177)					0.069 (0.217)
Family history							
Witnessed violence between parents (VTOPAR)			-0.175 (0.154)				-0.198 (0.177)
Police action							
Took perpetrator side (PPTSIDE)				0.810* (0.418)			0.771† (0.452)
Relationship with perpetrator							
Lived with perpetrator (LIVW)					-1.230*** (0.184)		-1.270*** (0.202)
Financially independent (FINDEP)					0.645*** (0.080)		0.638*** (0.083)

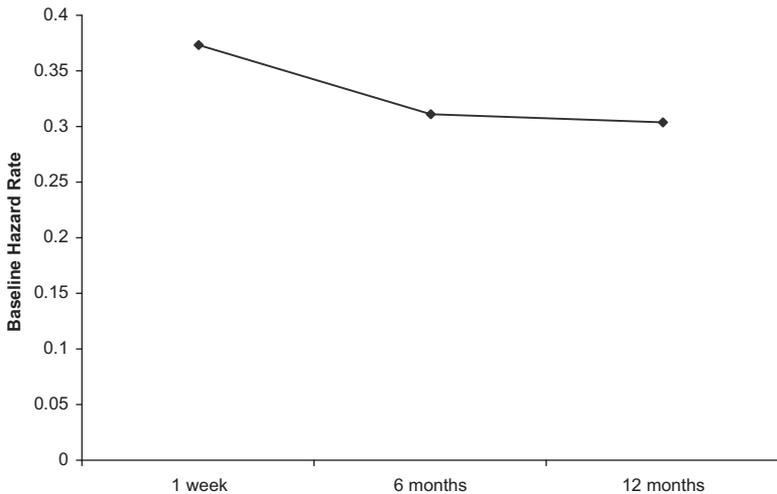
(continued)

Table 3 (continued)

	Model A $\hat{\beta}$ (SE $\hat{\beta}$)	Model B $\hat{\beta}$ (SE $\hat{\beta}$)	Model C $\hat{\beta}$ (SE $\hat{\beta}$)	Model D $\hat{\beta}$ (SE $\hat{\beta}$)	Model E $\hat{\beta}$ (SE $\hat{\beta}$)	Model F $\hat{\beta}$ (SE $\hat{\beta}$)	Model G $\hat{\beta}$ (SE $\hat{\beta}$)
Psychological measures							
Covariate Effects							
Depression (DEP)						0.005 (0.154)	0.052 (0.173)
Fear (FEAR)						-0.636*** (0.103)	-0.636*** (0.116)
Self-esteem (SLFES)						0.573** (0.198)	0.500* (0.226)
Control (CONT)						0.312* (0.152)	0.345* (0.171)
Goodness of fit	1093.4	1075.3	1092.1	1089.6	930.4	1046.4	886.8
-2log L (Deviance)		18.02	1.31	3.75	162.93	46.96	206.56
Wald χ^2		3	1	1	2	4	11
df		<.001	.253	.053	<.001	<.001	<.001
$p > \chi^2$							

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 1
Estimated Period Specific Hazard Rates of Battered Women's Leaving Perpetrators



In Model E, the parameter estimation results suggested that whether a battered woman lived with the perpetrator at the time of violence incidence (LIVW) affected leaving. The effect of LIVW to the possibility of leaving is significant also after controlling for the effects of other covariates in the full model, Model G. Women who lived with the perpetrator at the time of violence were 72% less likely to leave than that of those who did not. Also, the level of a battered woman's financial independency (FINDEP_i) made a difference in the leave rate both in Model E and G, and one unit increase in the FINDEP_i measure yields a 89% increase in the likelihood of leaving for each time point.

A set of psychological characteristics measures were added to the baseline model in Model F. A discrete-time hazard model estimation of Model F suggested that battered woman's level of fear (FEAR_i), self-esteem (SLFES_i), and locus of control (CONT_i) significantly affected the battered women's possibility of leaving the perpetrator before and after taking account of other variables' effects. After controlling for the effects of other variables in the full model, one unit increase in battered woman's level of fear (FEAR_i), self-esteem (SLFES_i), and locus of control (CONT_i) resulted in 47% decrease, 65% increase, and 41% increase in the likelihood of leaving, respectively.

Discussion

A set of discrete-time hazard rate models were used to examine the effects of various covariates on the possibility of battered women leaving their perpetrator. Results showed that this is affected by how much battered women are financially dependent on the perpetrators (Hypothesis 1) and by battered women's level of fear, self-esteem, and locus of control (Hypothesis 2). However, the study results did not support the association of battered women's leave/stay decision with law enforcement's behavior during the incident (Hypothesis 3) or with history of domestic violence between her parental figures (Hypothesis 4). Following the discussion of the findings consistent with previous research will be discussion of the findings inconsistent with previous research.

Results of this study indicate that women who witnessed parental violence were no more likely to leave than those who did not, which is consistent with the majority of studies that examined child history, finding no significant results. The present study's results suggest that Anderson and Saunders' (2003) theory that a violent history bolsters a woman's determination to leave is not borne out. It is possible that those who did leave had some unexamined protective factors, such as peer support (Carlson, 2000). Further research that includes protective factors in a model would be useful. Also useful would be studies that attempt to determine how and why children exposed to domestic violence in childhood do not enter violent relationships as adults.

Results of this study show that battered women's psychological characteristics are closely related to their leave decisions. Women who have higher self-esteem were more likely to leave, as the literature suggests (Follingstad et al., 1992). In this regard, how these women were able to retain and/or regain a high enough level of self-esteem in the face of abuse would be an important topic for further research and would have significant practice implications as well.

This study result also indicates that women with a high internal locus of control were more likely to leave. This finding is consistent with the previous literature indicating that women with higher internal locus of control are less likely to be involved in an abusive intimate partner relationship (Clements et al., 2004; Harway & Hansen, 2004; Suzuki, 2005). Furthermore, this study adds to the existing literature by showing that even after becoming involved in the abusive relationship, women with higher internal locus of control are more likely to leave the relationship.

In this study, women with higher levels of fear were less likely to leave, which is also consistent with the literature (Barnett, 2001). This finding

suggests that it is important to provide more safety measures to protect women when they leave. Also important is to help battered women understand early in the relationship that the violence will probably only escalate, making it safer to leave earlier rather than later.

Although the above findings were consistent with previous research, there were exceptions too. Previous research showed that women with independent income such as welfare were much more likely to leave (for a review see Anderson & Saunders, 2003). As previously discussed, welfare, which initially showed a significant association with leaving in the individual characteristics model (Model B), was not a significant predictor of a battered woman's leave decision when her level of financial dependency on her perpetrator was taken into account. It is possible that welfare helped battered women gain enough financial independence to leave as long as they did not have heavy financial reliance on the batterer.

With financial dependency being one of the primary reasons, if not the primary reason, women do not leave, we must do a better job monetarily assisting battered women. Policies and programs that would support poor women such as quality child care and free postsecondary education would also support battered women (Riger & Staggs, 2004) in addition to welfare. Additionally, the Family Violence Option (FVO) waiver, which was not an option for women in this study, should remain. The FVO permits states to waive Temporary Assistance for Needy Families requirements in cases of domestic violence in which compliance would hinder the victim's escape from violence or unfairly penalize the victim (U.S. Department of Health and Human Services, n.d.). The FVO has not been misused and does not seem to encourage welfare reliance (Hetling & Born, 2005). However, we must improve the rate at which frontline workers investigate this option (Lindhorst & Padgett, 2005).

Results also suggest that Hypothesis 3 should not be rejected. In other words, this study's results did not support that battered women's leaving is affected by negative police behavior. This is contrary to previous research findings in which negative police responses hindered leaving. This is particularly surprising because one would predict that a woman with low self-esteem and high level of fear who is not supported by the police would not leave. Although we do not understand why, perhaps the responding officer's behavior was the "tipping point" at which the woman decided "enough is enough."

Limitations

One of the important questions not addressed in the present study is whether the battered women who left actually broke the cycle of intimate

partner violence. We do not know whether the women returned to their batterers or whether they began a relationship with another batterer.

Generalization of this study's results to the postwelfare reform era should be done with caution because this study is based on a data set collected before 1996. Additionally, this study used a panel design where data were obtained based on respondents' recollection of events that occurred during a certain period after the last data collection period. This design failed to identify temporal orders between the events that occurred during the same data collection period. For example, we do not know whether a battered woman left her perpetrator first and then started to receive welfare, or welfare receipt helped her decide to leave.

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