Predicting Re-Victimization of Battered Women 3 Years After Exiting a Shelter Program

Deborah Bybee¹,² and Cris M. Sullivan¹

This study examined interpersonal and ecological predictors of re-victimization of a sample of women with abusive partners. All women (N = 124) had sought refuge from a battered women's shelter 3 years earlier, and half the sample had been randomly assigned to receive free, short-term advocacy services immediately upon exit from the shelter. Results 2 years post-intervention revealed positive change in the lives of participants (C. M. Sullivan & D. Bybee, 1999), including a decrease in abuse for women who had worked with advocates. The current study examined intervention effects 3 years after the program ended, as well as other predictors of re-abuse. Nineteen percent of the original sample had experienced domestic violence between 2 and 3 years after shelter exit (65% by current partners, 35% by ex-partners). The advocacy program's effect on risk of re-victimization did not continue 3 years post-intervention. However, having worked with an advocate 3 years prior continued to have a positive impact on women's quality of life and level of social support. The risk of being abused 3 years post-shelter stay was exacerbated by a number of factors present 1 year prior, including women's (1) having experienced abuse in the 6 months before that point; (2) having difficulties accessing resources; (3) having problems with the state welfare system; and (4) having people in their social networks who made their lives difficult. Women were at less risk of abuse if, 1 year earlier, they (1) were employed; (2) reported higher quality of life; and (3) had people in their networks who provided practical help and/or were available to talk about personal matters. These findings support the hypothesis that access to resources and social support serve as protective factors against continued abuse.

KEY WORDS: domestic violence; partner violence; re-victimization; advocacy; resources.

While it is now understood that intimate partner violence is a pervasive social problem, with over 1.5 million women being assaulted by intimate partners or ex-partners each year (Miller & Wellford, 1997; Tjaden & Thoennes, 1998), little is known about the predictors of re-victimization over time. The current study's authors found that access to community resources and social support served to protect women from future abuse across 2 years (Sullivan & Bybee, 1999; Bybee & Sullivan, 2002). The current research is an extension of that original study, and examines the interpersonal and ecological predictors of re-abuse 3 years post-shelter stay.

Risk of Re-Victimization Over Time

Few research studies have examined the prevalence of re-victimization by partners and ex-partners over time. Battering by definition is a pattern of abusive behavior, and abusive men are likely to continue their violence once they have found it to be effective (Bancroft, 2002). At the same time, many women successfully free themselves from their partners' violence (Sullivan & Bybee, 1999), often but not always by ending the relationship.

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While some batterers become even more violent after the relationship ends (American Psychological Association, 1996; Browne & Bassuk, 1997), others cease the violence either immediately or over time. Fleury, Sullivan, and Bybee (2000) examined re-victimization by ex-partners and found that, across a 2-year-time period, 36% of their sample had been assaulted by ex-partners at least once. Predictors of re-victimization by ex-partners included the batterers’ prior use of abuse and threats, his level of sexual jealousy, and whether he lived in the same city as the survivor.

Two studies have examined the trajectory of battered women’s experience of re-abuse over time (Campbell & Soeken, 1999; Sullivan & Bybee, 1999), using different methodologies. Campbell and Soeken (1999) recruited battered women through newspaper ads, and then interviewed them three times over approximately 3.5 years. Although they did not study predictors of re-abuse, they did examine relationships over time between abuse and women’s mental and physical health. By the end of their study 44% of the sample were still being abused, and abused women were more stressed and depressed than their non-abused counterparts. Sullivan and colleagues (Sullivan, Tan, Basta, Rumpitz, & Davidson, 1992; Sullivan & Bybee, 1999) recruited battered women after they had left a domestic violence shelter, and interviewed them every 6 months for 2 years. Half the sample in this study were randomly assigned to receive free advocacy services for 10 weeks immediately post-shelter. Trained advocates worked with women in their homes and communities for 4–6 hr per week, focusing on increasing women’s access to community resources and social support (for more details about the intervention see Allen, Bybee, & Sullivan, 2004; Sullivan, 2000, 2003; Sullivan & Bybee, 1999). Examining abuse over time, they found that 48.7% were abused in the 6 months post-shelter stay, 48.1% were abused 6–12 months later, 47.3% were abused between 12 and 18 months later, and 37.4% were abused between 18 and 24 months post-shelter stay. Women who had worked with advocates initially reported higher social support and greater effectiveness in accessing resources, which led to increased quality of life. Over time, this improved quality of life led to significant protection from re-abuse. Specifically, increased quality of life mediated (or explained) the intervention’s positive effects on social support at 12-month follow-up as well as both access to resources and re-abuse at 24-month follow-up (Bybee & Sullivan, 2002). The current study presents the number of women from the latter study who were re-assaulted 3 years later and examines predictors of the occurrence of re-abuse.

The Role of Social Support in Preventing Re-Victimization

A common tactic of batterers is to socially isolate their victims from supportive family and friends (Hoff, 1990; Davies, Lyon, & Monti-Catania, 1998). This not only minimizes the risk that someone will witness the abuse but also serves to limit victims’ access to support and assistance. Thompson et al. (2000) found that low-income, African American women who were being battered reported lower social support than their non-abused counterparts, and that lower social support related to increased distress. Tan, Basta, Sullivan, and Davidson (1995) corroborated these findings with a sample of low-income women from diverse ethnic backgrounds. Battered women with lower social support have also been found to be at increased risk of attempting suicide (Kaslow et al., 1998). In contrast, higher social support has been found to predict lower depression, higher overall quality of life, and reduced risk of re-abuse up to 2 years following a shelter stay (Bybee & Sullivan, 2002; Sullivan & Bybee, 1999). It has been hypothesized that social support serves as a protective factor by providing survivors with practical assistance (e.g., a temporary place to stay), information (e.g., how to obtain a restraining order), and emotional support. This type of support can be invaluable not only in breaking the isolation established by the abuser (Bancroft, 2002), but also in preventing subsequent threatened or implied abuse (Bybee & Sullivan, 2002).

Of course, one’s social networks are not always comprised of only supportive and helpful people. In some cases, family and friends of abused women blame the women for the abuse, or are too frightened themselves to intervene (Goodkind, Gillum, Bybee, & Sullivan, 2003). Some might offer help but in judgmental or blaming ways, thereby increasing the woman’s level of stress. As the role of social support is complex and multi-faceted, it is important to examine not only positive social support, but also the presence of people in one’s social network who make life difficult.
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The Role of Community Resources in Preventing Re-Victimization

Many women with abusive partners turn to a variety of community agencies and supports to protect them from violence (Campbell, Rose, Kub, & Neddd, 1993; Hutchison & Hirschel, 1998; Sullivan, 1997; West, Kaufman Kantor, & Jasinski, 1998). Whether through calling the police, obtaining a restraining order, seeking employment and/or welfare assistance, turning to a domestic violence victim service program, or enlisting housing programs for help in relocating, survivors attempt numerous strategies to protect themselves and their children (Goodkind, Sullivan, & Bybee, 2004). Survivors’ decisions surrounding help-seeking are influenced by the woman’s fear of reperussion from the assailant (Dutton, Goodman, & Bennett, 1999; Fleury, Sullivan, Bybee, & Davidson, 1998), her belief in the likelihood of success (Baker, 1997; Hoyle & Sanders, 2000), and her emotional attachment to the perpetrator (Baker, 1997; Zoellner et al., 2000).

One formal agency to which many battered women are forced to turn when fleeing abusive partners is the welfare system. Experiencing domestic violence is a strong predictor of needing government financial assistance (Lloyd & Talue, 1999; Nam & Tolman, 2002), and for some low-income battered women, welfare is the only support keeping them from returning to their batterers or becoming homeless (Baker, Cook, & Norris, 2003; Lyon, 2002; Riger & Kriegelstein, 2000). This study, then, also specifically examined the role of employment and the welfare system in protecting survivors from being re-victimized.

The Role of Quality of Life in Preventing Re-Victimization

Overall quality of life, or subjective well-being, has been operationalized as a general sense of contentment with how one experiences the world (Diener, Suh, Lucas, & Smith, 1999; Taylor & Bogden, 1990). It encompasses how one experiences social relationships, personal development and fulfillment, self-determination and autonomy, and physical and material well-being (Dennis, Williams, Giangreco, & Cloninger, 1993; Hughes, Hwang, Kim, Eisenman, & Killian, 1995; Schalock, 1997). Both social support and access to community resources have been associated with higher quality of life across various populations (Diener & Fujita, 1995; Hobfoll & Lilly, 1993; Sarason, Sarason, & Pierce, 1990). Analyses of the current data across 2 years post-shelter exit corroborated this relationship for battered women (Bybee & Sullivan, 2002). Women with higher social support and who had less difficulty obtaining community resources also reported higher overall quality of life. Over time, this improved quality of life led to significant protection from abuse.

The Current Study

Based on these prior studies, it was hypothesized that a number of factors might be important predictors of re-victimization 3 years post-shelter exit. These predictor variables included prior abuse, social support, access to community resources, and quality of life. Given the prior links found between poverty, welfare, and domestic violence, we also included monthly income, the woman’s contribution to the monthly income, her employment status, and difficulties she encountered with the state welfare agency. Finally, as the experimental condition showed a significant impact over 2 years on women’s access to community resources, social support, and abuse, we examined whether these intervention effects were maintained 1 year later.

METHOD

Participants were recruited from a domestic violence shelter program in Michigan. Women were eligible for the project if they (1) spent at least one night in the shelter, and (2) planned on staying in the general vicinity for the first 3 months post-shelter. Potential participants were informed that all respondents would be interviewed six times over a 2-year period. Women were also told that half the women being interviewed would be randomly selected to receive free advocacy services for the first 10 weeks post-shelter exit, 4–6 hr per week.

Although the original study was only designed to follow participants over 2 years, enough funds were available to attempt to locate a subsample of women 3 years later. Of the original sample of 141 women who were enrolled in the first half of the study, 124 (88%) were located and interviewed 3 years after their post-intervention interview. Because research resources were not available to support ongoing
contact and tracking between the 2- and 3-year follow-up interviews, retention did not reach the level of 95%+ achieved at previous interviews. However, of women who had been interviewed at 2-year follow-up, 93% were successfully interviewed 1 year later. Virtually identical proportions were interviewed in the experimental (87%) and control conditions (89%). Women who were successfully interviewed were not different from those lost to the 3-year follow-up on any of the pre-intervention measures (e.g., age, race, education, employment, number of children, receipt of government aid, length of relationship with assailant, number of previous separations from assailant, length of index shelter stay). Additionally, there were no differences on mean levels of the major outcome variables of the original study (physical abuse, psychological abuse, depression, quality of life, social support) at the pre-intervention point (multivariate \(F(5, 135) = 0.61, p = .69\)) or across previous follow-ups (multivariate \(F(5, 118) = 1.05, p > .39\)), and no attrition-related differences on outcome trajectories through the 2-year follow-up interview (multivariate \(F(15, 108) = 0.50, p = .94\)).

**Demographics**

Forty-six percent of the participants were white, and 42% were African American. Seven percent were Latina, 2% were Asian American, and the remainder were Native American, Arab American, or of mixed heritage. All spoke English as their first language. Ages ranged from 17 to 61 years, with a mean of 28 years. Seventy-seven percent had at least one child living with them. The average index shelter stay was 16.41 days (\(SD = 12.30\)).

Nearly two-thirds (64%) of the sample had completed high school or had obtained GED’s, and 34% had completed at least some college. A majority were unemployed before entering the shelter (61%), and 81% were receiving some form of governmental assistance.

**Measures**

Face-to-face interviews using the following measures were conducted in women’s homes or in other locations deemed to be comfortable and safe. During the initial interview women were asked about the 6 months prior to their entering the shelter. The post-intervention interview referred to the prior 10 weeks, and follow-up interviews referred to the prior 6 months.

**Experience of Violence by Partners and Ex-Partners**

A modified version of the Conflict Tactics Scale (Straus, 1979) was used to assess the violence women experienced by partners and ex-partners since the previous interview. Women were asked how often (1 = never to 6 = more than 4 times a week) they had experienced each of the types of violence listed (e.g., being kicked, being beaten up). All women were asked these questions about their original assailants; women who reported being in new relationships were also asked these items in regard to the new partner. Following the rationale of Downs, Miller, and Panek (1993), responses were combined to create a frequency/severity scale of violence, with 0, no violence; 1, less severe abuse only (tore clothing, pushed, grabbed, shoved, slapped, threw something at), 2, lower frequency (once a month or less) severe abuse (kicked, hit with fist, hit or tried to hit with object, beat up, choked, tied up, raped, threatened and/or used a gun or knife), and 3, high frequency severe abuse. The violence experienced by women prior to project intake was quite severe, averaging 2.5 (\(SD = 0.62\)); by 2-year follow-up, the mean across all women had declined to 0.68 (\(SD = 0.99\)); at 3 years, the mean level was 0.75 (\(SD = 1.09\)); overall level of abuse did not change significantly from 2- to 3-year follow-up (paired \(t(123) = -0.80, p = .43\)).

**Quality of Life**

Women indicated on a 7-point scale (1 = terrible to 7 = extremely pleased) how satisfied they were with nine particular areas of their lives, such as the way they spent their spare time and how they felt about their level of responsibility. This scale, adapted from Andrews and Withey (1976), displayed high internal consistency (Cronbach’s \(\alpha = .88\)), with corrected item total correlations ranging from .56 to .79. Mean score at both 2- and 3-year follow-up was 4.92 (\(SD = 1.10\)).

**Social Support**

Nine items measured women’s satisfaction with the quantity and quality of their perceived social
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support (Bogat, Chin, Sabbath, & Schwartz, 1983). Women indicated on a 7-point scale how they felt about various types of social support, including emotional support, advice, and companionship. Cronbach’s alpha was .92, with corrected item total correlations ranging from .71 to .83. Mean score at both 2- and 3-year follow-up was 5.29 (SD = 1.03).

In addition to this global measure of satisfaction with overall social support, the number of people each woman listed as being a source of a specific type of social support or stress was summed. This yielded three counts: the number of people who provided practical help in the past 6 months (M at 2-year follow-up = 2.21; SD = 1.42; range = 0–8); the number of individuals available to talk about personal matters (M at 2-year follow-up = 2.73; SD = 1.75; range = 0–8); and the number of people in the woman’s social network who made her life difficult (M = 1.24; SD = 1.19; range = 0–6).

Difficulty Obtaining Resources

Eleven items measured women’s perceptions of the difficulty they had experienced in obtaining resources in different areas (e.g., employment, housing) or, if they had not tried to access resources in a specific area, the difficulty they would expect to encounter. Response categories ranged from 1 = not a problem to 4 = very much a problem. Cronbach’s alpha was .76, with corrected item total correlations from .28 to .55. At 2-year follow-up, M = 2.18 (SD = 0.62); at 3-year follow-up, levels were very similar – M = 2.11 (SD = 0.60).

Questions were also asked about specific aspects of women’s access to resources at 2-year follow-up. Women were asked about their household income (M at 2-year follow-up = $831 per month; SD = $500; range = $0 to $2,400), about the percentage that they brought into the household (at 2-year follow-up, 80% of the women brought in 100% of their household incomes); and about their employment status (46% held a job in the 6 months prior to the 2-year follow-up). Women were also asked about problems they might have encountered with the state welfare office in the 2-year follow-up interview, 49% had reported having had at least some problems in the previous 6 months (M = 2.25; SD = 1.17), on a response scale ranging from 0 (no problems) to 4 (very much a problem).

RESULTS

Contact with Assailant

By 3-year follow-up, only 19% of the women were involved in relationships with the men who had abused them prior to the pre-intervention interview. However, half the women (50%) had seen the men in the previous 6 months. Including those in intimate relationships with them, more than one-third (35%) of the sample had contact with their assailants as frequently as several times a month. Twenty percent of the women who were not involved with their original assailant reported that he had tried to convince her to reunite during the previous 6 months, and 22% reported that he had tried to harass or intimidate her during the same period. There were no significant condition effects on these variables.

Nineteen percent of the sample reported having been assaulted by their original assailants within the prior year. For 65% of these women (n = 15), the abuse occurred while they were involved in a relationship with the men. The remaining 35% (n = 8) were not involved with the men at the time of the violence. The mean level of violence reported by the 23 women who had been assaulted by their original assailants was 2.00, the equivalent of severe abuse occurring once per month or less (SD = 0.74).

Involvement in New Relationships

More than half the women (52%) were involved in new relationships at the time of the 3-year follow-up interview, and 64% had been in a new relationship at some time during the previous 6 months. Over the entire 3-year follow-up period, 81% reported having been involved in a new relationship at some point. These proportions were not significantly different for the two conditions.

Nineteen percent of the sample reported having been assaulted by a new partner within the prior 6 months; one of these was assaulted by both her original assailant and a new partner. The mean level of violence reported by the 23 women who had been assaulted by a new partner was 2.13, equivalent to severe abuse slightly more than once per month (SD = 0.69).
Condition Effects on Primary Outcome Variables at 3-Year Follow-Up

As noted earlier, at 2-year follow-up, significant condition effects were found on four outcome variables—physical abuse, quality of life, social support, and difficulty accessing community resources. In the current analysis, one-way multivariate analysis of variance (MANOVA) was used to determine whether significant between-condition differences seen at 2-year follow-up were maintained through 3-year follow-up. Because only half the original sample could be followed up 3 years after the intervention, alpha was set at .10 in order to maintain statistical power near the level available for the original 2-year follow-up analyses (thus avoiding increased probability of Type II errors due simply to reduced sample size). Significance tests for the experimental-control group comparison were directional, due to our focused interest in testing the continuation of positive effects identified at earlier time-points. Power for this analysis was estimated at .76, assuming effect sizes similar to those observed at 2-year follow-up.

The one-way MANOVA between conditions on four outcome variables (physical abuse, quality of life, social support, and difficulty accessing resources) was significant at \( p < .10 \) (multivariate \( F(4, 119) = 1.57, p = .089 \)), suggesting that there were modest overall differences between the advocacy and control conditions at 3-year follow-up. Multivariate \( \eta^2 = .05 \), indicating that condition explained 5% of the multivariate variability across the four dependent variables.

To identify effects associated with specific outcome variables, a univariate one-way ANOVA was examined for each individual dependent variable. Condition had a significant effect on social support \( (F(1, 122) = 4.69, p = .016, \eta^2 = .04) \), accounting for 4% of the variance. Estimated means for social support were 5.48 (experimental) and 5.09 (control), with \( SE = .13 \). Quality of life also showed a significant condition effect \( (F(1, 122) = 2.51, p = .058, \eta^2 = .02) \), accounting for 2% of the variance. Estimated means for quality of life were 5.07 (experimental) and 4.77 (control), with \( SE = 13 \). Condition effects were not significant for difficulty accessing resources \( (F(1, 122) = 1.25, p = .133) \) or for physical abuse \( (F(1, 122) = 0.83, p = .180) \).

To determine if effects differed by race, the analysis above was repeated with the addition of race as a second fixed factor. No significant effects due to race or its interaction with experimental condition were found.

Experience of Physical Abuse at 3-Year Follow-Up

Thirty-six percent of the women reported having experienced some level of physical abuse by a partner or ex-partner during the previous 6 months; 28% had experienced severe abuse. Aggregate levels were similar to those seen at 2-year follow-up (36% experiencing abuse, 23% severe). However, there was substantial rank-order change from 2- to 3-year follow-up at the individual level, with abuse levels at the two time-points correlating only \(.53\). Level of abuse changed for approximately one-third of the women \((n = 40)\), with 12 women who reported no abuse at 2-year follow-up experiencing abuse at 3-year follow-up, 13 women who had reported abuse at 2-year follow-up experiencing no abuse at 3-year follow-up, 9 reporting an increase in frequency and/or severity of abuse from 2- to 3-year follow-up, 6 reporting a decline in frequency and/or severity, and 18 reporting the abuse had remained the same. Sixty-six women reported no abuse at either time-point. There was a slight increase in re-abuse among women who received the advocacy intervention (30.6–37.1%) and a slight decline in re-abuse among those in the control group (43.5–35.5%), although log-linear analysis showed that the changes did not differ significantly by condition (LR \( \chi^2 (df = 2) = 1.63, p = .44 \)).

Predictors of Re-Abuse at 3-Year Follow-Up

Three years after the intervention, the positive effects of having received advocacy services were not significant. However, two of the variables previously found to be important mediators of the intervention’s effects on re-abuse through 2-year follow-up—quality of life and social support (Bybee & Sullivan, 2002)—still showed evidence of the impact of the advocacy intervention. To see if the association between these variables and re-abuse persisted across time, we used quality of life and social support, measured at 2-year follow-up, in a hierarchical logistic regression predicting re-abuse reported at 3-year follow-up (i.e., abuse that occurred during the 6 months prior to the 3-year interview).

Hypothesized predictors were entered in sequential blocks, beginning in block 1 with control
variables. The effect of prior violence was controlled by entering abuse reported at 2-year follow-up; controlling for earlier abuse in this way allowed the remaining coefficients to be interpreted as predictors of change in re-abuse over the intervening year. Experimental condition (receipt of advocacy services 3 years prior) was entered as a control for possible intervention effects that could emerge once other variables were in the equation. Race (white vs. women of color, who were predominantly African American and Hispanic) was also entered in the first block, both to control for possible race differences in re-abuse and to allow race interactions with other predictors to be examined in the final block of the regression.

Blocks 2 through 4 contained previously identified mediators of intervention effects—quality of life, difficulty accessing resources, and satisfaction with social support. Blocks 5 and 6 added specific supports and stressors in the material and social domains; these were added in an exploratory effort to identify specific aspects of these domains that may explain variability in future abuse, after accounting for women's overall assessment of their difficulty obtaining resources and the adequacy of their social support. Finally, in block 7, we tested for possible interactions between each predictor and race. To facilitate examination of mediating relationships among predictor blocks, we present coefficients and odds ratios from both the entry block at which each set of variables was entered into the equation, and the final block, controlling for the effects of all other predictors in the equation.

Results of the logistic regression are presented in Table I. As expected, abuse at 2-year follow-up was strongly predictive of continued abuse at 3-year follow-up (odds ratio \( OR = 15.52 \)). Neither race nor experimental condition showed significant association with 3-year re-abuse at the block in which these control variables were entered, although both became significant or marginally so as other predictors with which they were correlated were entered into the equation.

Block 2 entered quality of life at 2-year follow-up, which was a significant negative predictor of re-abuse \( OR = 0.63 \), indicating that each 1-point increase on the 7-point quality of life scale was associated with a nearly 40% reduction in the likelihood of later re-abuse. In block 3, difficulty accessing resources at 2-year follow-up was also a significant predictor; a 1-point increase on the 4-point resource difficulties scale was associated with nearly doubled odds \( OR = 1.91 \) of 3-year re-abuse, controlling for abuse 1 year earlier. Satisfaction with social support, entered in block 4, had no significant relationship with 3-year re-abuse. An additional analysis showed that, even if social support were entered at block 2, in place of quality of life, it would not have shown a significant relationship with re-abuse at 3-year follow-up.

In block 5 were specific financial resources and stressors. Neither monthly income nor the extent of women's contribution to the household income added significantly to prediction. Having been employed during the 6 months prior to the 2-year follow-up interview was a significant predictor of reduced risk, associated with an 80% reduction in the odds of re-abuse \( OR = 0.19 \); and having encountered problems with the state welfare agency was a marginally significant predictor of increased risk, associated with a 50% increase in the odds of re-abuse 1 year later \( OR = 1.52 \). At block 5, when these specific financial resource variables were added to the equation, the global variable summarizing difficulty accessing resources became nonsignificant. Further analysis showed that one of the specific financial resource variables—employment—met the criteria established by Baron and Kenny (1986) as a complete mediator of the effect of difficulty obtaining resources. Specifically, difficulty obtaining resources was significantly associated with both employment at 2-year follow-up (standardized \( B = -0.25 \), \( p < .001 \)) and re-abuse at 3-year follow-up \( OR = 1.91 \), \( p < .05 \), and the indirect effect on re-abuse of difficulty accessing resources, via employment, was significant \( z = 3.37 \), \( p < .001 \), according to the multivariate delta method (MacKinnon, Warsi, & Dwyer, 1995). After controlling for the effect of women's employment, difficulty obtaining resources accounted for no additional variance in re-abuse \( OR = 1.58 \), \( p = .30 \), indicating that employment was the critical aspect of resource difficulties that was predictive of later re-abuse.

In block 6, all three forms of social support and stress reported at 2-year follow-up were at least marginally predictive of re-abuse 1 year later. The number of people available to provide practical help and to talk with the woman about personal matters were both negatively predictive of later abuse \( OR = 0.68 \), \( p = .08 \) and 0.66, \( p = .09 \), respectively), while the number of people who made life hard for the woman was positively predictive of re-abuse \( OR = 1.65 \), \( p = .04 \).

In block 7 were entered interactions between race and each of the other predictors used in the
Table 1. Hierarchical Logistic Regression Predicting Re-Abuse at 3-Year Follow-Up

<table>
<thead>
<tr>
<th>Block</th>
<th>Independent variables assessed at 2-year follow-up</th>
<th>Entry block</th>
<th>Final block</th>
<th>Block LR $\chi^2$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Constant</td>
<td>$-0.59^{***}$</td>
<td>$-2.02$</td>
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<tr>
<td>1</td>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Race (1, white; 0, woman of color)</td>
<td>$0.17$</td>
<td>$2.50^f$</td>
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<td></td>
<td>Experimental condition</td>
<td>$0.64$</td>
<td>$1.36^e$</td>
<td></td>
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<tr>
<td></td>
<td>Physical abuse in previous 6 months (1, yes; 0, no)</td>
<td>$2.74^{***}$</td>
<td>$3.94^{***}$</td>
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<tr>
<td>2</td>
<td>Quality of life</td>
<td>$-0.47^*$</td>
<td>$-0.37$</td>
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<td>3</td>
<td>Difficulty accessing resources</td>
<td>$0.65^*$</td>
<td>$-0.41$</td>
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<td>4</td>
<td>Social support satisfaction</td>
<td>$0.07$</td>
<td>$0.20$</td>
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<td>5</td>
<td>Specific material resources and stressors</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>Monthly income (in dollars)</td>
<td>$0.00$</td>
<td>$0.00$</td>
<td></td>
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<tr>
<td></td>
<td>Woman contributed 100% of household income (1, yes; 0, no)</td>
<td>$-0.17$</td>
<td>$1.25$</td>
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<td></td>
<td>Employed in past 6 months</td>
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<td>$-1.58^*$</td>
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<td>Problems with welfare agency in past 6 months</td>
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<td>$0.52^f$</td>
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<td>6</td>
<td>Specific social supports and stressors</td>
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<tr>
<td></td>
<td>Number of people who gave practical help</td>
<td>$-0.38^f$</td>
<td>$-0.33$</td>
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</tr>
<tr>
<td></td>
<td>Number of people who talked about personal matters</td>
<td>$-0.41^*$</td>
<td>$-0.45^f$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of people who made things hard</td>
<td>$0.50^*$</td>
<td>$0.54^*$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. LR $\chi^2 = 78.75$ (df = 14), $p < .001$; Hosmer–Lemeshow $\chi^2 = 9.38$ (df = 8), $p = .31$. N = 123 women with 3-year follow-up interview; one case omitted due to missing covariate data.

$p < .05$.

$**p < .01$.

$***p < .001$.

$^f p < .10$.

analysis, one block at a time, beginning with the control variables (from block 1, above). Nonsignificant interactions were omitted from the model, leaving only one that was significant – race × woman contributing 100% of the household income (OR = 0.02, $p = .01$). For white women, contributing 100% of the household income was protective against later re-abuse (simple effects OR = 0.08, $p = .02$), but this variable had no significant effect on re-abuse for women of color (simple effects OR = 3.51, $p = .25$).

The final regression model showed no significant departure in fit to the original data (Hosmer-Lemeshow goodness-of-fit $\chi^2$ (df = 8) = 9.38), $p = .35$). The combined set of independent variables made significant improvements in prediction of re-abuse compared to a constants-only model (model LR $\chi^2$ (df = 14) = 78.75, $p < .001$). The model accounted for more than half the variance in re-abuse at 3-year follow-up, according to the squared Pearson correlation between predicted probability and observed re-abuse ($R^2 = .52$; Hosmer & Lemeshow, 2000). Accuracy of classification, predicting which women experienced re-abuse and which did not, improved to 82% for the final equation compared to 64% accuracy for the baseline constants-only equation.

**DISCUSSION**

Analyses indicated that women were experiencing the same rate of victimization at 3-year follow-up that they were at 2-year follow-up, although the abuse was not always against the same women. The vast majority of the women (81%) were no longer involved with the men who had abused them prior to the pre-intervention interview. Yet 19% had been assaulted by them in the prior year, and having left the relationship was not always a protective factor. A third of the women assaulted were
not involved with the men who abused them, and 22% of the women reported continuing to be harassed or intimidated by their ex-partners.

The advocacy program's direct effect on risk of re-victimization did not continue 3 years post-intervention. There are a number of plausible explanations for this. It is possible that the intervention may not have been sufficient on its own to protect women against abuse 3 years later, or that after 3 years, women in the control group may have "caught up" to those who received the intervention, in terms of avoiding re-abuse. There was evidence of both trends in the data - a slight increase in incidence of re-abuse among women in the intervention condition and a slight decline in re-abuse among those in the control group, although neither was significant in the current sample. It is also likely that, due to the relatively low number of women experiencing abuse at 3-year follow-up, power was not sufficient to detect an intervention effect.

Despite the lack of significant 3-year effects on re-abuse, having worked with an advocate 3 years prior continued to have a positive impact on women's quality of life and level of social support. Since quality of life and social support have been identified as protective factors against re-abuse, these findings suggest that advocacy services could be beneficial if offered to abused and formerly abused women over time, on an as-needed basis. Resource needs and social networks change over time, as people move to new areas and/or move through major life transitions (e.g., the birth of a child, graduation, a new job). Periodically receiving a "booster shot" of advocacy might be a low-cost means of protecting women from re-abuse.

The risk of being abused 3 years post-shelter stay was elevated by a number of factors present in women's lives 1 year prior. These included (1) having experienced abuse in the 6 months prior to that point; (2) having difficulty accessing resources; (3) having had problems with the state welfare system; and (4) having people in their social networks that made their lives difficult. Women were at less risk of abuse if they: (1) reported higher quality of life 1 year earlier; (2) were employed 1 year prior; and (2) had people in their social networks who provided practical help and/or who were available to talk about personal matters. These findings support the hypothesis that access to resources and social support serve as protective factors against continued abuse (Bybee & Sullivan, 2002; Sullivan & Bybee, 1999). Women who had been employed and who had supportive people in their lives were less likely to have been abused again, while women having difficulties accessing resources and problems with governmental services and those who had difficult people in their lives were at increased risk. Of course, the best predictor of future abuse is past abuse, as factors related to the assailant are the best predictors of his continued violence (Bybee & Sullivan, 2002; Fleury et al., 2000). However, even after controlling for the level of abuse 1 year prior, it also appears that some women are at increased risk of future intimate partner violence if they are having financial difficulties and/or lack supportive individuals in their lives. These may be the women most vulnerable to abuse because they have fewer options for support or escape.

The link between access to financial resources and risk of future abuse also corroborates prior studies. Hofeller (1982) found that 58% of her sample felt trapped in their abusive relationships because they could not economically support themselves and their children. Strube and Barbour (1983) also found that employment contributed heavily to the decision of whether to stay or leave an abusive relationship. Similarly, Aguirre (1985) reported that economic dependence on the abuser contributed heavily to women's remaining in the relationship. Women lacking the financial resources to support themselves and their children sometimes have to make difficult choices. One of those choices, for some women, is to try to stop the violence they are experiencing while remaining involved with the abusive men (Peled, Eshikovits, Enosh, & Winstock, 2000). Interestingly, for white women it was a protective factor against re-abuse if they were contributing 100% of the household income in the previous year. This was not true for the other women in the sample, perhaps due to the fact that income levels were slightly (although not significantly) lower for women of color than for white women, and that their access to other types of resources may be compromised by racism. This finding deserves further attention and study.

The study's finding that social support related to risk of re-abuse is not surprising (Bowker, 1984; Dobash, Dobash, and Cavanagh, 1985; Donato & Bowker, 1984; Goodkind et al., 2003; Hoff, 1990; Mitchell & Hodson, 1983; Tan et al., 1995). A specific strategy of many batterers is to isolate their victims from family and friends, thus cutting off opportunities for help and support. As the number of supportive people in a woman's life increases, so too do her options for protection and safety.
Cross-cultural research has shown that a strong predictor of low-level violence against women in a society is the extent to which family and friends are willing to intervene to stop abuse (Counts, Brown, & Campbell, 1999).

Conversely, as the number of difficult people in a woman’s lives increases, so too does her risk of re-abuse. This may be because “difficult” people are less likely to offer support, information and resources. It could also be that these people are rated as “difficult” because they are encouraging the woman to reunite with the abuser or are assisting the abuser in his harassment or violence. The current study did not include an opportunity for women to explain why they labeled individuals in their lives as “making their lives difficult.” This relationship, however, deserves additional in-depth attention in the future.

The association between quality of life and risk of later re-abuse is also not surprising, as it parallels similar relationships found between quality of life at 1-year follow-up and re-abuse 1 year later (Bybee & Sullivan, 2002). Although quality of life was a significant predictor of re-abuse when only previous abuse and other control variables were in the equation, its effect was no longer significant once resource and social support variables were added. Even though none of the resource or social support variables met the criteria for mediation, this pattern of results indicated that these effects were intertwined. Quality of life may simply be a reflection of the adequacy and relevance of women’s resources and supports to their needs and desires; as such, quality of life may be protective against re-abuse because it can predict women’s ability to obtain needed resources and mobilize support in times of future need. Additionally, quality of life may affect women’s goals or strivings for the future, leading to expansion or contraction of women’s views of possibilities for their lives (Diener & Fujita, 1995). Women’s perceptions of their quality of life may also influence the breadth of their thought-action repertoires, thereby affecting their ability to mobilize protective resources and supports (Fredrickson, 2001).

A number of study limitations must be considered when interpreting and generalizing these findings. All participants had at one time been residents of a domestic violence shelter program. Most had low incomes, and all lived in a mid-sized urban community. The majority of the sample were African American or non-Hispanic white, limiting our ability to comprehensively examine race differences. These results need to be replicated with larger, more diverse samples.

These findings support the research study’s underlying strengths-based philosophy, which sees the community as a resource as well as a focus of intervention (see Early & GlenMaye, 2000). It has been postulated that intimate male violence against women is prevalent at least in part because of our society’s failure to provide women with adequate social and economic opportunities (see Heise, 1998; Koss et al., 1994). The results of this analysis support this view. Women who lacked financial resources and a supportive social network were more vulnerable to being physically assaulted than were women in stronger economic and social situations. Although a great deal more research is needed to further explicate these relationships, and attention still needs to focus on holding batterers accountable for their abuse, enough is known to support the need to increase community supports for all women. Increased social and economic opportunities for women is one means through which to prevent and deter intimate partner violence.

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