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the Trajectory of Intimate Violence Over Time

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Final Report

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Using a Longitudinal Data Set to Further Our Understanding of

the Trajectory of Intimate Violence Over Time

Although a great deal of research has been conducted in the past two decades

regarding intimate male violence against women, we still know very little about the process

through which women go as they work to free themselves from the violence of partners and

ex-partners. We do know woman abuse is pervasive in our society (Browne & Williams,

1993; Straus & Gelles, 1986), domestic violence often increases in intensity and frequency

over time (Hilbert & Hilbert, 1984; Okun, 1986), there are numerous barriers preventing

women from living free of their assailants' violence (Barnett & LaViolette, 1993; Gondolf,

1990; Horton, Simonidis, & Simonidis, 1987; Jones, 1994), and our communities must

become more active in preventing intimate male violence against women (Crowell &

Burgess, 1996; Gamache, Edleson, & Schock, 1988; Sullivan, 1997).

The National Research Council's Panel on Research on Violence Against Women

made a number of recommendations to further our understanding of the antecedents of

intimate male violence against women (Crowell & Burgess, 1996). The current research

responded to a number of these recommendations, including: "All research on violence

against women should take into account the context within which women live their lives and

in which the violence occurs" (p. 47); "Longitudinal research, with particular attention to

developmental and life-span perspectives, should be undertaken to study the developmental

trajectory of violence against women" (p. 90); and "Studies that describe current services for

victims of violence and evaluate their effectiveness are needed. Studies to investigate the

factors associated with victims' service-seeking behavior...are also needed" (p. 139).

Theoretical base for the research. Many individuals still hold the myth that "battered

women could simply leave if they want to." This assumption not only ignores the many structural obstacles preventing women from leaving abusive partners, it also ignores the fact that many women do in fact leave their assailants -- sometimes only to be beaten even more severely or killed (Jones, 1994; Mahoney, 1991; Stark & Flitcraft, 1988). This myth also presumes that the one and only option for all women with abusive partners is to leave the relationship -- a view that not only ignores the agency of battered women themselves in deciding what is best for them, but also ignores the religious and/or cultural proscriptions many women face when making relationship decisions. The process of becoming violence-free -- whether or not by leaving an abusive partner -- is complex, and it is something about which we still know very little. Prior research has found that social isolation and an ineffective community response to domestic violence each contribute to a woman's increased risk of abuse by partners and ex-partners (Aguirre, 1985; Barnett & LaViolette, 1993; Crowell & Burgess, 1996; Greaves, Heapy, & Wylie, 1988).

An effective means of controlling women and assaulting them with less fear of detection is to first socially isolate them (Browne, 1987; Hoff, 1990). Women with abusive partners often report that their contact with family and friends had been cut off or severely curtailed, and that they had no one to turn to for help with the abuse. Conversely, women who *have* reported receiving help and support from family or friends have rated it as being very helpful in their ability to leave their assailants (Bowker, 1984; Donato & Bowker, 1984).

In addition to social support, many women need a variety of community resources as well. For example, when describing reasons for remaining with or returning to abusive men, many women have mentioned lack of employment (Hofeller, 1982; Strube & Barbour,

1983) or economic dependence on the abuser (Aguirre, 1985; Johnson, 1988; Rumptz & Sullivan, 1996). Other resources needed by at least some women with abusive partners include proper medical attention (Dobash, Dobash, & Cavanagh, 1985; McFarlane, Parker, & Soeken, 1995), childcare (Gondolf, 1988), affordable and safe housing (Sullivan, Basta, Tan, & Davidson, 1992), and help from social service agencies (Dobash et al., 1985).

Although some communities have worked to improve their response to domestic violence, many women still do not receive the services they need to end the violence they are experiencing. Arrest for domestic assault continues to be a rare event (Hirschel, Hutchison, Dean, & Mills, 1992), and prosecution is even more infrequent (Buzawa & Buzawa, 1990). Restraining orders are not always enforced (Buzawa & Buzawa, 1990; Youngstrom, 1992), and many women have reported fearing for their lives and the lives of their children if they were to try to escape their assailants (Barnett & LaViolette, 1993; Browne, 1987; Jones, 1994). Although communities with coordinated responses to domestic violence have reported some successes (see, for example, Gamache, Edleson, & Schock, 1988; Steinman, 1990), such a collaborative, structured response continues to be absent in most women's communities.

Contrary to one prevailing view of battered women as dependent victims, there is ample empirical evidence that many women with abusive partners are active helpseekers, fighting for their survival in the face of numerous obstacles. One comprehensive study of over 6,000 women from 50 different shelters found that the women had made an average of six prior helpseeking efforts (Gondolf, 1988). Wauchope's (1988) nationally representative sample of 3,665 women found that two-thirds of those battered had sought help at least once from friends, relatives, and/or formal agencies within their communities. Three factors

appear to influence the decision of women to seek outside help to end the violence they are experiencing: the severity of the abuse, the number of resources a woman possesses, and the belief that such efforts will be successful (Sullivan, 1991a).

The current analyses built on findings from a community-based advocacy intervention designed to increase battered women's access to needed community resources and support. A randomized field trial showed significant positive intervention effects persisting across 2-year follow-up on social support, difficulty accessing resources, quality of life, and physical violence by a partner or ex-partner (Sullivan & Bybee, 1999). Although earlier analysis confirmed more positive outcomes for women who worked with advocates, it did not examine (1) the mediational process through which the intervention resulted in decreased abuse; (2) whether positive outcomes persisted across three years; (3) whether some interventions were more effective than others in reducing abuse; (4) what antecedents explained differences in victimization over time; or (5) what antecedents explained differences in victimization specifically by ex-partners over time. The current analyses were conducted to explore these important issues.

The research data. Data were gathered from 1989 through 1996, with funding to Cris Sullivan and colleagues from the National Institute of Mental Health (R01 MH44849). Data were available for 278 women who had been residents of a domestic violence shelter program. Women were interviewed immediately upon exit from the shelter, 10 weeks later (post experimental intervention), and at 5 additional time periods over the next 3 years (6 months, 12 months, 18 months, 24 months, and 36 months).

The data set was originally assembled for two purposes: (1) to experimentally examine the effects of providing a community-based advocacy intervention to battered

women; and (2) to provide descriptive information about women's lives over the first two

years post-shelter. Although NIMH funding only covered data collection through two year

followup, three year followup data were collected independently on the first half of the

sample (n=124).

The 10-week post-shelter intervention involved randomly assigning trained

advocates to work one-on-one with women, helping women generate and mobilize

community resources they needed to reduce their risk of repeated victimization. Such

resources included but were not limited to legal assistance, employment, education, housing,

and medical care. The data set is unique in a number of ways: (1) it contains information

about the process and outcomes of an intervention provided to a random half of the research

participants, in a true experimental design; (2) it contains ecological variables -- often

missing in data sets [e.g., police response, availability of community resources] -- that have

been hypothesized to influence rate of re-victimization; (3) it contains rates of abuse not

only in the "original" relationship but across new relationships as well; (4) due to a retention

rate of 95% or higher through two-year followup (96% have near-complete data), and an

88% retention rate at three-year followup, it contains very little missing data; and (5) it

includes seven data points spanning three years.

Constructs measured. The data set contains self-report information about women's

(1) experience of intimate violence (including physical, sexual, and psychological abuse as

well as harassment and stalking) over time by both the "original" assailant as well as in any

new relationship; (2) psycho-emotional well-being [depression, self esteem, quality of life,

fear and anxiety, emotional attachment to assailant]; (3) amount and quality of social

support; (4) physical health concerns and symptoms; (5) need for, access to, and satisfaction

with community resources plus self-rated efficacy; and (6) need for, use of, and satisfaction with law enforcement and criminal justice resources. Women also provided information about their assailants, including (1) whether the assailant abused alcohol and/or drugs, (2) whether the assailant was in substance abuse and/or batterer treatment, (3) living situation across time (e.g., whether he still lived in the area, different state, incarcerated, etc.), and (4) whether the assailant was economically supporting the respondent.

The following instruments were used in the study to measure the constructs of interest:

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. During the initial interview women were asked about the six months prior to their entering the shelter. The post-intervention interview referred to the prior 10 weeks, and all followup interviews referred to the six months since the prior 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., choking, beating 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, & 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.

Injuries sustained. At each interview, women who experienced any violence were asked (yes/no) if they had suffered each of twelve types of injuries, such as cuts, bruises, broken bones, and/or permanent scarring, as a result of the violence. Cronbach's alpha for this scale was .69, with item-total correlations ranging from .22 to .48. Additionally, a 2-item scale recorded the number of times women had sought or needed medical attention for abuse-related injuries; Cronbach's alpha was .61.

Psychological abuse. The 33-item Index of Psychological Abuse (Sullivan, Parisian, & Davidson, 1991) was used to measure the degree to which assailants used ridicule, harassment, criticism, and emotional withdrawal against the women interviewed. Women were asked, for example, how often in the last 6 months [1 = never to 4 = often] their assailants had "called you names" and/or "criticized your intelligence." Internal consistency of this scale was .97, with item-total correlations ranging from .51 to .90.

Depression. Depression was assessed by the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), a self-report checklist of psychological distress within the general population (Cronbach's alpha = .88). Women rated how much they had experienced each of 20 symptoms on a 0 (rarely or never) to 3 (most or all the time) scale.

Self esteem. Rosenberg's 10-item Self Esteem Index (1965) was used with women in the latter half of the study. Cronbach's alpha = .90, with corrected item-total correlations ranging from .60 to .75.

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 & Withey (1976), displayed high internal consistency (Cronbach's

alpha = .88), with corrected item total correlations ranging from .56 to .79.

Fear and anxiety. Items from the Rape Aftermath Symptom Test (RAST; Kilpatrick, 1988) were used to measure fear and anxiety. Item responses ranged from 0 (not bothered at all) to 4 (bothered very much). Internal consistency was .88, with item total correlations ranging from .47 to .75.

Emotional attachment to assailant. Thirteen true/false items were used to measure the degree to which women still felt emotionally attached to their assailants. Cronbach's alpha was .84, with corrected item total correlations ranging from .47 to .73.

Social support. Nine items measured women's quantity and quality of perceived social 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.

Physical health concerns and symptoms. The frequency with which women were bothered by health problems was assessed through a modified version of the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS; Cohen & Hoberman, 1983). The original scale was modified to include physical symptoms frequently reported by women with abusive partners, such as choking sensations, high blood pressure, and pelvic pain (Abbott et al., 1995; Campbell, 1989; Eby et al., 1995). Participants were asked to rate how often in the past 6 months they had been bothered by each of 35 physical health symptoms. Responses were rated on a 6-point scale form 1 (never) to 6 (more than 4 times a week). Previous research has indicated the CHIPS is both a valid and reliable index of physical health symptomatology (Cohen & Hoberman, 1983). Coefficient alpha for the scale was

.92. In addition to the total scale score, three interpretable subscales have been identified: Stress (Cronbach's alpha = .88), Fatigue (Cronbach's alpha = .75), and Pain (Cronbach's alpha = .80).

Effectiveness in obtaining resources was assessed, post-intervention only, in eleven areas: housing, material goods and services, education, employment, health care, child care, transportation, social support, legal assistance, financial issues, and issues regarding the children. Response categories ranged from 1 = very ineffective to 4 = very effective, and scale scores were created by calculating the mean of self-report effectiveness scores across all areas in which a woman worked. Internal consistency of the "Effectiveness in Obtaining Resources (EOR)" scale was .64.

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. The "Difficulty Obtaining Resources" scale was measured at the 6- through 36-month followup interviews only.

Police and court contact: victim report. Women who experienced any violence or threats from their assailants were asked how many times the police were contacted in the past six months (by themselves or anyone else). They were asked what the police did if they came to the scene, and whether the assailants had been arrested and/or convicted of assaulting them during that time frame.

In addition to interview data, the database includes archival data recorded from a thorough review of records from 13 police departments and the court system. These data include official reports of domestic violence calls involving any of the 278 women, whether arrests were made, what help was offered to the victims, and final disposition.

Intervention process. From the randomly-assigned 143 women who worked with advocates, we obtained specific information about the intervention process: time spent working on various efforts, specific helpseeking strategies used to obtain resources (telephoning resource providers, going in person to agencies, gathering written materials, etc.), effectiveness in obtaining needed resources, and satisfaction with the project. Similar information was also obtained from parallel interviews with women in the control group, excluding items pertaining specifically to advocates.

Prior publications. A great deal of information has already been published from this study. The data have allowed for the examination of battered women's needs immediately upon shelter exit (Sullivan, Basta, Tan, & Davidson, 1992); the community-based obstacles overcome by African American women who have used shelter services (Sullivan & Rumptz, 1995); the role of social support in the lives of battered women (Tan, Basta, Sullivan, & Davidson, 1995); a longitudinal analysis of depression in battered women (Campbell, Sullivan, & Davidson, 1995); a successful retention protocol developed to track "difficult to find" populations (Sullivan, Rumptz, Campbell, Eby, & Davidson, 1996); the discrepancy between victim and police reports of domestic violence incidents (Fleury, Sullivan, Bybee, & Davidson, 1998); reasons why battered women do not call the police (Fleury, Sullivan, Bybee, & Davidson, 1998); the impact of continuing abuse on women's mental and physical health (Sutherland, Bybee, & Sullivan, 1998); and the long-term effects of an advocacy

intervention in the lives of women with abusive partners (Sullivan, Campbell, Angelique, Eby, & Davidson, 1994; Sullivan & Bybee, 1999).

A multivariate analysis of covariance involving six time points over two years revealed that women who worked with advocates experienced less violence over time, reported higher quality of life and social support, and had less difficulty obtaining community resources (Sullivan & Bybee, 1999). Survival analysis indicated a significantly reduced hazard for repeated incidents of intimate violence in the Advocacy condition. More than twice as many women in the Advocacy condition experienced *no* violence across the two years compared to women in the Control condition. Moreover, on several outcome measures (difficulty accessing resources, perceived efficacy, intimate violence, and quality of life) Advocacy-Control differences *increased* over the two-year followup, suggesting that the Advocacy intervention may have instigated a process of persistent change. These encouraging findings raised a number of additional research questions that exceeded the scope of the original NIMH funding. Funding from NIJ allowed for additional analyses to be conducted, answering the following research questions: (1) What are the mediational processes by which the Advocacy intervention affected reduction in victimization? (2) Do the promising intervention effects continue to the 36 month time point? (3) Were some interventions more effective than others, and if so, what were the components of a "successful" intervention, and was the intervention more successful at reducing victimization for women in some types of situations than for others? (4) What antecedents explain differences in victimization over time? and (5) What antecedents explain differences in the context of victimization specifically by ex-partners?

The following sections describe the intervention, study design, and demographics of

the participants in detail. Specific analyses pertaining to the major research questions then follow.

<u>Research Participants</u>

<u>Recruitment</u>. Participants were recruited from a Midwest shelter program for women with abusive partners. 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 three months post-shelter. Potential participants were informed that all respondents would be interviewed six times over a two year period -- immediately upon shelter exit, 10 weeks later, and at 6, 12, 18, and 24 month followup. 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 to 6 hours per week. Ninety-three percent of eligible women agreed to participate. Two hundred eighty-four women completed initial interviews. To be considered a research participant, women had to be involved in the study a minimum of three weeks. This time frame was chosen to give women working with advocates ample time to get acquainted and begin working. Of the 284 initial study participants, four women ended their participation within the first two weeks and one woman was murdered by an intimate partner one week into the intervention. Data presented are based on the 278 remaining participants.

<u>Condition assignment</u>. All research participants were interviewed within the first week after exiting the shelter program. Most interviews were conducted in women's homes, and all were conducted in private rooms with no other adults present. Immediately upon completion of the first interview, respondents opened a sealed envelope which informed them if they would or would not be working with an advocate. Interviewers did not know to

which group women would be assigned. Group selection was random, stratifying for order and for whether or not a woman was involved in an ongoing, intimate relationship with her assailant[1]. One hundred forty three women were assigned to the experimental condition. Women selected into this condition began working with trained advocates within a week. Women in the control group were not contacted again until their next interview.

Demographics. Forty-five percent of the participants were African American, and 42% were European American. Seven percent were Latina, 2% were Asian American, and the remainder were Native American, Arab American, or of mixed heritage. Ages ranged from 17 to 61 years, with a mean of 29 years. Seventy-four percent had at least one child living with them.

Two-thirds of the sample had completed high school or had obtained GED's, and 35% had completed at least some college. Most were unemployed before entering the shelter (59%), and 76% were receiving some form of governmental assistance. All spoke English as their first language.

The mean length of stay at the shelter had been 19 days (range = 1-76, SD = 16.5). Twenty-seven percent of the women were married to the men who had abused them, and an additional 42% were living with but not married to their assailants. Seven percent of the women had been intimately involved with the men who had abused them but were not living together, and 20% were no longer involved with their partners at the time of the last assault (either separated, divorced, or no longer dating).

Violence experienced by the women in the six months prior to entering the shelter had been quite severe, ranging from being grabbed, pushed or shoved (92%), to being raped

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1 As involvement with assailant had the potential for influencing whether a woman would be abused over time, it was important to ensure that equal numbers of women in this situation be included in each condition.

(48%), kicked (47%), and/or threatened with a gun or knife (40%). Injuries sustained in the prior six months included cuts and bruises (85%), broken bones (19%), dislocations (10%), and miscarriages or pregnancy complications due to the abuse (11%).

The Strengths-Based Advocacy Intervention

Training of paraprofessional advocates. Advocates were female undergraduate students enrolled in a two-semester Community Psychology course. The first semester involved extensive training, and consisted of empathy and active listening skills, facts surrounding woman abuse, theoretical underpinnings of strengths-based interventions, strategies for generating, mobilizing, and accessing community resources, and in-depth discussion of dealing with potentially dangerous situations. After training, each advocate was required to work 4-6 hours per week with and on behalf of a single client. Advocates continued to receive intensive supervision in weekly sessions comprised of 5-7 students and 2 supervisors.

It cannot be overemphasized that the intervention focused on making the *community* more responsive in the delivery and distribution of limited and/or inaccessible resources. Such resources included housing, employment, legal assistance, transportation, education, child care, health care, material goods and services, financial assistance, services for the children (e.g., tutoring, counseling), and social support (e.g., making new friends, joining support groups). One hundred forty three advocates participated in the project over a six year time period.

The intervention process. The strengths-based framework guiding this intervention necessitated paraprofessionals adhere to the following guidelines: (1) focusing not on deficits within the family, but rather on the woman's strengths; (2) working on issues the

woman identified as being important to her; (3) focusing on making the community more responsive to the woman's needs; and (4) maximizing the likelihood of long-term change occurring for the family by working within the woman's natural setting (Powell, et al., 1997).

Each intervention consisted of helping women devise safety plans when needed and providing advocacy services. Safety plans were individualized based on each woman's history, needs, and circumstances. Advocacy consisted of five distinct phases: assessment, implementation, monitoring, secondary implementation, and termination (Davidson & Rappaport, 1978; Sullivan, 1991b). *Assessment* consisted of (1) getting to know the client and significant others in her life (family, friends, etc.), and (2) gathering important information regarding the client's needs and goals. During this stage the client informed the advocate what she would like to accomplish during their time together.

Implementation naturally followed the assessment phase. Specifically, in response to each unmet need identified, the advocate actively worked with the client to generate or mobilize appropriate community resources. This included brainstorming all possible resources, identifying critical individuals in control of those resources, and devising strategies to access the resources. This stage involved making phone calls, obtaining written information, making personal contacts -- anything that had the potential to create positive change.

The third phase was to *monitor* the effectiveness of the implemented intervention. The advocate and woman with whom she worked assessed whether the resource had successfully been obtained, and whether it was satisfactory to meeting the unmet need. If it was not, the advocate initiated a *secondary implementation* to meet the client's needs more

effectively.

Termination began approximately seven weeks into the ten-week intervention. At this time, the advocate began removing herself more and more from activities. The advocate also intensified her efforts to transfer the skills and knowledge she had learned throughout the course, to ensure the client would be able to continue implementing advocacy efforts on her own. Advocates were told repeatedly that their goal was to "put themselves out of a job."

Although the five phases of advocacy intervention were described here as distinct stages for clarification purposes, in reality advocates engaged in various phases simultaneously. For instance, assessment was a continuous process, as additional areas of unmet need arose throughout the ten weeks. Multiple interventions often occurred at various points, such that, for example, the advocate may have been monitoring one intervention while initiating another.

Illustration of a Representative Intervention

Jane was a twenty-six-year-old woman who had lived with her abusive boyfriend for four years. During this time her boyfriend had succeeded in isolating Jane from her friends and family. He had forced her to quit her job as a receptionist in an office building and had prevented her from renewing her driver's license. Jane had two small children, three and five years old. Upon leaving the shelter, Jane had moved into a small apartment and applied for ADC (Aid for Families with Dependent Children).

During the first few weeks of her involvement in the Community Advocacy Project, Jane and her volunteer discussed and prioritized Jane's

unmet needs: (1) obtaining a restraining order against her ex-boyfriend, (2) earning money, (3) finding accessible, affordable childcare, and (4) making friends. Because the ex-boyfriend was continuing to stalk and harass Jane, the two worked on that issue first. Together they went to the various offices necessary to complete the paperwork for a restraining order and stalking order, and to collect needed signatures. Once the orders had been served they called the police department daily to check whether they had been placed on the electronic Law Enforcement Information Network. During this time they also began working on obtaining employment. Jane expressed an interest in returning to secretarial work, which she had enjoyed. They decided that while they were looking for more permanent employment, Jane would also apply at a temporary employment agency. The volunteer agreed to obtain information from the local community college and university regarding free seminars for women returning to the workforce, and together they would update and revise Jane's resume. Jane and her volunteer then compiled a list of all the daycare centers in the area. Also, whenever they were out together, they looked at personal advertisements in stores and laundromats. The volunteer agreed to check the newspaper as well. In the process of going to the community college, the Temporary Services agencies, and daycare centers together, Jane began meeting other young mothers with whom she became friends.

Jane and her advocate were successful in accomplishing each of their stated goals within their ten weeks together. Jane obtained a temporary job which became permanent, and they found an older woman willing to provide childcare in Jane's home in exchange for room and board. After Jane had been working for a few weeks she decided she would

like to renew her driver's license, and with the advocate's help was able to

do so quickly.

Interviewer Training

Undergraduate women (separate from those students who worked as advocates)

received course credits in exchange for locating participants and conducting interviews for

this project. New groups of 5 to 7 interviewers received training every 3 months, in order

for trained interviewers to be available at any given time. Training consisted of intensive

course instruction and practice interviews until adequate inter-rater agreement was attained.

Interrater agreement on answers to closed-ended and brief-response open-ended questions,

calculated at the completion of the 5-week training period, was consistently high, averaging

97% agreement. Interviews were conducted in women's homes or at locations convenient

for them, and lasted approximately one and a half hours. The intensive procedure regarding

confidentiality issues and safety concerns was identical to that used with advocate training.

Retention Rate Over Two Years

An extensive protocol was created and implemented to maximize retention of this

mobile population over two years. Strategies included making multiple contacts in the

community, obtaining written Release of Information forms from participants, and paying

women for participating in the research interviews. This protocol resulted in a retention rate

of 95% at the post interview, 94% at 6- and 12-months, and 95% at 18- and 24-months.

Retention rates were not significantly different between the advocacy and control conditions

$(\chi^2 (1, \underline{N} = 278) = .56$, ns). The specific components of the retention plan can be found in

Sullivan et. al., (1996).

Secondary Data Analysis Major Research Questions

Question #1. What are the mediational processes by which the Advocacy intervention affected reduction in victimization over time?

The strengths based approach underlying the experimental intervention necessitated focusing not just on stopping problems and immediate difficulties but on enhancing knowledge, capabilities, and supports that would lead to increased quality of life (Powell et al., 1997). The intervention was designed to improve the overall quality of women's lives by increasing their access to community resources and strengthening their available social support. Improvement in quality of life was hypothesized to exert a protective effect, reducing the likelihood of further victimization by a partner or ex-partner. The hypothesized model of intervention process is displayed in Figure 1.

Figure 1. Hypothesized model of the intervention's effects on reabuse over time

Prior research has suggested that social support buffers the negative effects of domestic violence (Hoff, 1990; Mitchell & Hodson, 1983) and protects women from abuse (Tan et al., 1992). Put simply, women with supportive people in their lives have more access to support and information that can protect them from batterers' violence and threats. Similarly, access to community resources can serve to protect women from abusive partners. Whether those resources include police protection, restraining orders, housing, employment, transportation, etc., adequate access to community commodities and opportunities have been hypothesized to shield women from domestic violence.

The construct "quality of life" has been operationalized as including such dimensions as self-determination, autonomy, psychological wellbeing, life satisfaction, physical and material wellbeing, and personal fulfillment (Hughes et al., 1995; Powell et al., 1997). Being supported by one's community and having adequate social support have been found to relate to one's quality of life. As such, the current intervention was expected to improve women's overall quality of life by increasing their access to community resources and social support. Higher quality of life was then expected to serve as a protective factor, minimizing the likelihood of further victimization by a partner or ex-partner.

Longitudinal latent structural equation modeling (SEM) was used to test the fit of the data to the conceptual model in Figure 1. This approach offers several advantages for tests of mediation. First, the analysis is dynamic, incorporating time intervals that are logically necessary for the hypothesized causal and intervening forces to exert their effects (Gollob & Reichardt, 1991). Second, it allows controls for prior levels of both mediators and outcome variables, reducing the impact of variables not included in the model (i.e., spurious factors) and increasing power. Third, by organizing observed indicators into latent constructs, the

approach reduces the impact of measurement error and provides a way to model correlation of measurement errors across time. Fourth, it offers statistical tests of overall model fit as well as formal comparisons between alternative models. Finally, the method provides a way to model, quantify, and test the significance of indirect effects that operate through complex mediational chains of intervening variables. Because women were randomly assigned to receive advocacy services, intervention effects identified through SEM can be interpreted causally, allowing strong inferences about the mediational process.

Multiple indicators were developed for the constructs in the conceptual model at each of three time points: post-intervention, 12-month followup, and 24-month followup. Descriptive statistics for each observed indicator are in Table 1. Estimates of the internal consistency of each indicator, where applicable, are in Table 2.

Social support. Nine items measured the quantity and quality of women=s perceived social support (Bogat, Chin, Sabbath, & Schwartz, 1983). Women indicated on a 7-point scale (1 = terrible to 7 = extremely pleased) how they felt about various types of social support, including emotional support, advice, practical assistance, and companionship. Three indicators were constructed from these items: Amount of Support (4 items), Quality of Support (4 items), and Overall Satisfaction with Support (single item).

Access to resources. At post-intervention, women rated their Effectiveness in Obtaining Resources across eleven areas: housing, material goods and services, education, employment, health care, child care, transportation, social support, legal assistance, financial issues, and issues regarding their children. Response categories ranged from 1 = very ineffective to 4 = very effective, and scale scores were created by calculating the mean of self-report effectiveness scores across all domains in which a woman had tried to obtain

Table 1			
Descriptive statistics on observed indicators over time			
	Means (Standard Deviations) N = 267		
	Post-intervention	12-month follow-up	24-month follow-up
Social support			
Amount of support	5.11 (1.15)	5.26 (1.16)	5.39 (1.10)
Quality of support	5.20 (1.11)	5.27 (1.14)	5.40 (1.07)
Overall satisfaction	5.02 (1.51)	5.19 (1.38)	5.27 (1.37)
Resources			
Effectiveness	2.97 (0.70)	------	------
Difficulty	------	2.24 (0.61)	2.09 (0.65)
Satisfaction	------	0 (0.66)	0 (0.69)
Quality of life			
Item parcel 1	4.70 (1.24)	4.91 (1.15)	4.99 (1.26)
Item parcel 2	4.94 (1.11)	5.00 (1.11)	5.08 (1.15)
Item parcel 3	4.81 (1.24)	5.02 (1.19)	5.13 (1.21)
Reabuse			
Conflict tactics	1.23 (0.42)	1.26 (0.47)	1.18 (0.42)
Frequency/severity	0.95 (1.11)	0.93 (1.10)	0.73 (1.04)
No. times harmed	1.79 (1.14)	1.83 (1.31)	1.60 (1.11)

Table 2						
Longitudinal Measurement Model						
	Indicator Reliability (Cronbach's Alpha)			Standardized Measurement Coefficients		
	Post	12-mo.	24-mo.	Post	12-mo.	24-mo.
Social support						
Amount of support	.77	.84	.85	.97	.95	.98
Quality of support[a]	.78	.86	.86	.94	.97	.94
Overall satisfaction	-----	-----	-----	.78	.86	.79
Resources						
Effectiveness[b]	.68	------	------	.83	------	------
Difficulty	------	.76	.74	------	-.63	-.67
Satisfaction[a]	------	.78	.82	------	.68	.77
Quality of life						
Item parcel 1	.77	.77	.77	.88	.89	.91
Item parcel 2[a]	.74	.69	.78	.90	.83	.88
Item parcel 3	.76	.68	.74	.82	.82	.89
Reabuse						
Conflict tactics	.86	.90	.90	.95	.95	.95
Frequency/severity[a]	------	------	------	.97	.98	.97
No. times harmed	------	------	------	.90	.83	.84

[a] Coefficients for these indicators were set to one to scale the latent variables in the unstandardized solution.

[b] In the unstandardized model, the coefficient for this single indicator was set to one and the error variance was fixed at (1-internal consistency) * observed scale variance) or .157, following Hayduk (1996).

resources during the previous 10 weeks. Because the measure was individualized, only one composite indicator could be derived for resources at this time point. For use in the SEM, the coefficient for this single indicator was set to one and the error variance was fixed at ((1-internal consistency) * observed scale variance), following Hayduk (1996).

At 12- and 24-month followup, two variables measured women's access to resources. Difficulty Obtaining Resources was composed of eleven items that assessed 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 should the need arise. Response categories ranged from 1 = not a problem to 4 = very much a problem. Satisfaction with Resources was a 5-item scale assessing satisfaction with living arrangement, educational level, transportation, financial situation, and material goods. Because response options were not consistent across items, they were standardized before being averaged; higher scores indicate greater satisfaction.

Quality of life. Using items adapted from Andrews and Withey (1976), women indicated how they felt about how their lives were going. Sample items included: "How do you feel about what you are accomplishing in your life?" and "How do you feel about your emotional and psychological well-being?" (1 = terrible to 7 = extremely pleased; total scale α = .88). Because the scale was unidimensional, with no discernible subscale structure, items were systematically distributed into 3-item parcels to create three indicators of this construct at each time point (see Marsh, Hau, Balla, and Grayson, 1998).

Reabuse. Each interview assessed the violence women had experienced by partners and ex-partners. During the post-intervention interview, women were asked about violence

during the prior 10 weeks; at followup interviews, they were asked about the previous six months. Using an expanded version of the Conflict Tactics Scale (Straus, 1979), women reported how often [1=never to 6=more than 4 times a week] they had experienced each of the types of violence listed (e. g., choking, beating up). All women were asked these questions about their original assailants (whether or not they were still involved with them) and about new partners. Two indicators were derived from this measure. First was the Conflict Tactics Scale score, an average score across all 12 items. Second, following the rationale of Downs, Miller, & 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. Responses to a separate question, the number of times women reported having been physically harmed in any way by a partner or ex-partner [1 = never to 6 = more than 4 times a week], constituted the third indicator of this construct.

Analysis Plan

The application of structural equation modeling followed Anderson and Gerbing's (1988) two-step approach, in which confirmatory factor analysis is used to assess the hypothesized measurement model before the structural relationships among latent constructs are modeled. The fit of the measurement model is then used as a baseline for testing the fit of the hypothesized and alternative structural models. As recommended by Hu and Bentler (1995), maximum likelihood (ML) methods were used to estimate model parameters. With two exceptions, indicator distributions appeared adequate for the assumptions of ML

estimation; transformations successfully reduced skew for the two nonnormal indicators of reabuse (a log transformation for Number of Times Harmed and the reciprocal transformation for the Conflict Tactics Scale). Of the original sample of 278 women who participated in the research, 11 were excluded because they were missing more than one interview. Seventeen of the remaining 267 cases had smaller amounts of missing data (totaling less than 1.5% of the data matrix); full information maximum likelihood (FIML) estimation, implemented in Amos 4 (Wothke, 1998) allowed these cases to be included in the SEM analyses. For bootstrap tests of total and indirect effects and other procedures requiring no missing data, expectation maximization (EM) methods were used to impute missing values (Little & Rubin, 1990).

As is widely recommended (see Bollen & Long, 1993), indices of several different types were used to assess model fit. The minimum discrepancy function (chi square) was examined, along with its ratio to model degrees of freedom (Bollen, 1989). The incremental fit index (IFI; Bollen, 1989) was added to assess improvement in fit per degree of freedom, relative to an independence model; for this index, values near one indicate good fit. The root mean square error of approximation (RMSEA; Steiger & Lind, 1980), which has a known sampling distribution, allowed for statistical tests of "close fit" to the data matrix, indicated by values indistinguishable from .05. Power to reject a hypothesis of close fit exceeded .90 for all models considered here, according to procedures developed by MacCallum, Browne, and Sugawara (1996). Two additional indices were used for comparisons between models. For nested models (i.e., those whose estimated parameters are a subset of the parameters estimated in a comparison model), the likelihood ratio (LR) chi square was used. For nonnested models, the expected cross validation index (ECVI; Browne & Cudeck, 1989)

was consulted; for ECVI, smaller values indicate better-fitting models, penalizing model complexity. Due to possible departures from multivariate normality in the data, overall model fit was also confirmed with the robust Bollen-Stine bootstrapped $\underline{p}$ (Bollen & Stine, 1993).

In addition to these indices of global model fit, local fit was assessed against the hypothesized pattern of coefficients. Hypothesized paths were expected to be significantly different from zero; because these hypotheses were directional, one-tailed t-tests were used. Paths not hypothesized in the model were expected to have small Lagrange multipliers, indicating paths that, if estimated, would not significantly improve model fit.

After establishing adequate fit of the model to the data, the magnitude and significance of modeled intervention effects were examined. Procedures outlined by Baron and Kenny (1986), Fox (1980), Bollen (1987) and Brown (1997) were used to test and interpret specific mediation effects on outcomes over time. For tests of mediation with one intervening variable, power exceeded .90 in most instances, given the sample size, measure reliability, degree of collinearity between independent and mediating variables, and the use of latent modeling (see Hoyle and Kenny,1999). For tests of longer mediational chains involving links among multiple intervening variables, power was undoubtedly lower, although its actual level could not be estimated.

<div align="center">Results</div>

<u>Measurement Model</u>

Standardized measurement coefficients linking the observed indicators to each latent construct are listed in Table 2. Most coefficients were above .85, revealing that indicators were highly saturated measures of their respective constructs. Saturation was lower for

indicators of resources, but even these were acceptable in exceeding .60. In all models, errors of measurement for indicators assessed repeatedly were allowed to covary across time. Fit of the unconstrained measurement model (with no constraints placed on the error correlations) was very good, as can be seen from the indices in Table 3 (Model M1).

To test the factorial invariance of the measurement model over time, the unconstrained model was compared with a model in which measurement coefficients were required to be equal across the three measurement points (Model M2). Table 3 shows that this model also provided excellent fit to the data, and the small LR χ^2 indicates no significant difference in fit between the constrained and unconstrained models. This verifies the equality of coefficients across time and supports the contention that the indicators measured the same phenomena at all three time-points. The unconstrained measurement model was used as the basis for all structural models.

Structural Model

The hypothesized links between latent constructs were added to the longitudinal measurement model and are displayed in Figure 2. The first panel of the longitudinal model (post-intervention) shows the hypothesized immediate effects of the intervention; the continuing effects of post-intervention quality of life on outcomes at 12-month followup are in the second panel; and the continuing effects of 12-month quality of life on 24-month outcomes are in the third panel. Structural links were specified according to theoretical considerations about the timing of various effects, as suggested by Finkel (1995). Subjective quality of life was thought to respond relatively quickly to changes in objective life circumstances, so the direct effects of social support and resources on quality of life were modeled as occurring within each one-year period. The process by which improved quality

Insert Table 3: Measurement and alternative structural models – Comparisons of fit
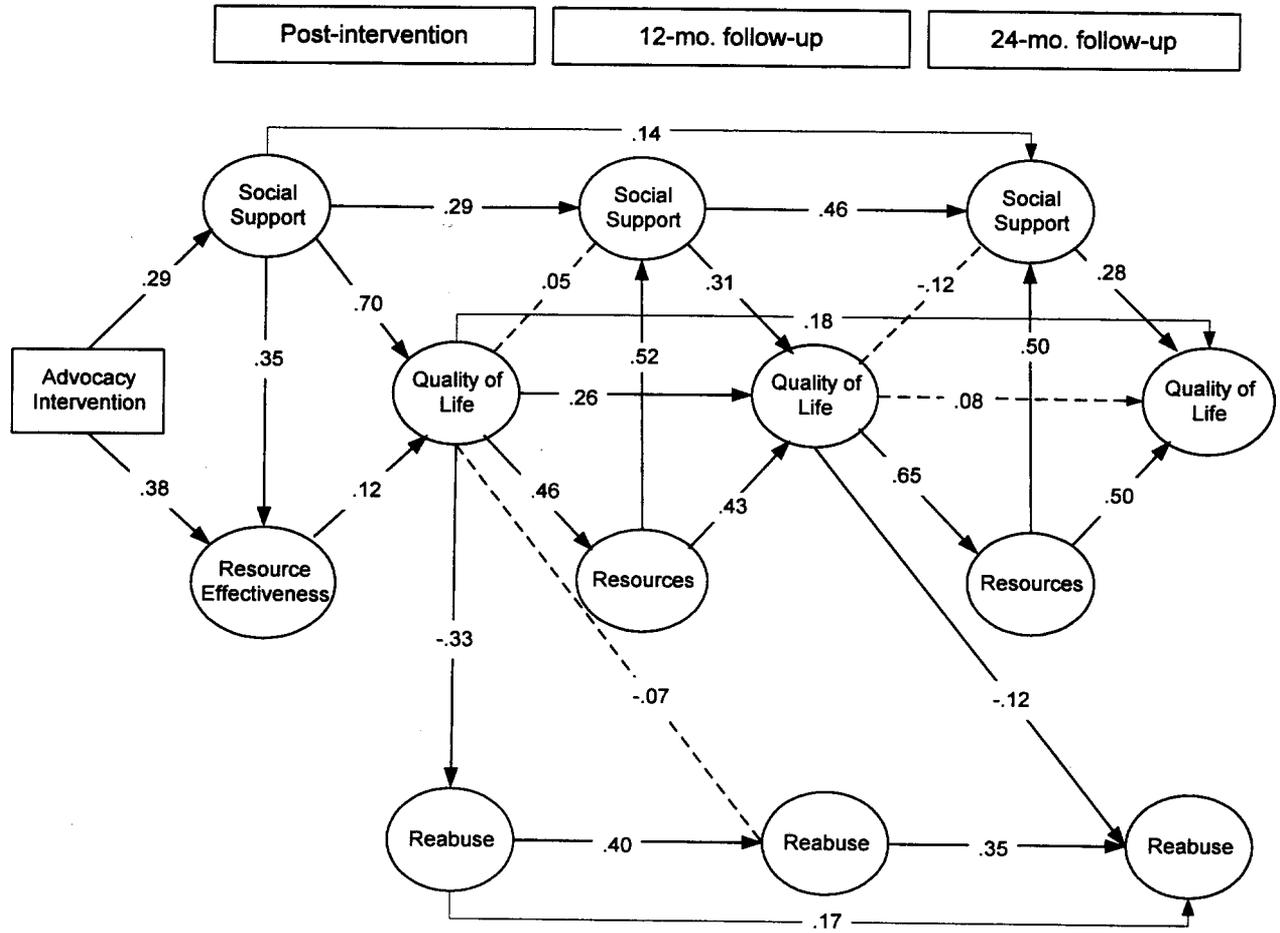
of life would affect reabuse was thought to require more time; consequently, beyond the

post-intervention point, this effect was modeled as spanning the one-year intervals between

measures.

At each time point, social support and difficulty accessing resources were linked

with directional paths, rather than the bidirectional paths indicated in Figure 1. The

directions shown in Figure 2 were suggested by results of fitting an initial nonrecursive

model in which only one directional coefficient at each time point was found to differ

significantly from zero[2]. To simplify the model and facilitate further analysis, the

nonsignificant paths were constrained to zero, yielding the recursive model shown.

Nonsignificant paths linking resource effectiveness at post-intervention and difficulty

accessing resources at 12- and 24-month followup were also deleted from the model. No

other post hoc modifications were made[3]. Global indices in Table 2 confirmed that the

hypothesized model (Model S2) provided a good fit to the data. There was no significant

decline in fit compared with the baseline unconstrained measurement model (LR $\chi^2_{(51)}$ =

64.975, p = .09) and no significant difference in fit from the initial nonrecursive model (S1).

For additional confirmation that the hypothesized model optimally represented the

relationships present in the data, Model S2 was compared with two alternative structural

models, both of which reversed the direction of the paths between quality of life and

---

2 The direction of the post-intervention path was suggested in a preliminary nonrecursive model with bi-directional paths between social support and resources. Only the path from social support to resource effectiveness was significant. This model included pre-intervention measures of social support and quality of life, which were necessary to identify the nonrecursive model. Because pre-intervention measures had no apparent effect on other relationships, they were omitted to simplify the model.
3 Not shown in figure 2 are correlations between residuals of quality of life and reabuse, which were estimated for 12-month and 24-month followup. Correlations were -.40 at 12-month and -.18 at 24-month, indicating that 16% and 3%, respectively, of the unexplained variance in these constructs was shared.

Figure 2: Structural model showing the intervention's effects on reabuse over time, as mediated through social support, quality of life, and access to resources.

reabuse. Model S3 specified a direct effect of the intervention on reabuse at post, and direct paths from reabuse at post and 12-month to quality of life at 12- and 24-month followup, respectively. Model S4 was similar, except that the influence of reabuse on quality of life was synchronous (within-time) at post, 12-month, and 24-month followup. These models present plausible alternative conceptualizations, asserting that quality of life is affected by reabuse (at the same or previous time point) and that the influence of the intervention on reabuse is through some mechanism that is not reflected in the model. On all indices, the alternative models showed poorer fit to the data than the hypothesized model. LR χ^2 for both showed significant degradation of fit compared with the measurement model, and the Bollen-Stine robust p was marginally significant, suggesting that the alternatives be rejected in favor of the hypothesized model.

In addition to showing good global fit to the data, the hypothesized model showed good local fit, in terms of expected zero and nonzero path coefficients. Structural coefficients in the hypothesized model were in the expected direction (with only one nonsignificant exception), and 24 of the 29 hypothesized paths were statistically significant. At the structural level, the hypothesized model was a good representation of the relationships among latent constructs.

The total effects (both direct and indirect, summed) implied by the hypothesized model are summarized in Table 4. Tests of significance using bootstrapped standard errors indicated that all effects were significantly different from zero. The advocacy intervention had significant effects on all other latent variables in the model; effects were especially strong on social support, resources, and quality of life at the post-intervention point, but significant effects persisted to 24-month follow-up. Social support and quality of life

Table 4

Structural model – standardized total effects and squared multiple correlations

Exogenous (predictor) and intervening variables	Endogenous (predicted) latent variables											
	Social Support			Resources			Quality of Life			Reabuse		
	Post	12-mo.	24-mo.	Post	12-mo.	24-mo.	Post	12-mo.	24-mo.	Post	12-mo.	24-mo.
Advocacy intervention	.29**	.16**	.15**	.48**	.12**	.11**	.26**	.17**	.16**	-.09**	-.05**	-.06**
Social support - post		.50**	.47**	.35**	.34**	.32**	.74**	.49**	.47**	-.25**	-.15**	-.15**
Social support - 12-mo.			.52**			.20^t		.31*	.28*			-.04^t
Social support - 24-mo.									.28**			
Resource Effectiveness - Post		.04*	.03*		.06*	.04*	.12*	.06*	.06*	-.04*	-.03*	-.02*
Resources - 12-mo.		.53**	.36**			.39**		.59**	.35**			-.07*
Resources - 24-mo.			.50**						.64**			
Quality of life - post		.30**	.24**		.46**	.35**		.54**	.47**	-.33**	-.21**	-.19**
Quality of life - 12-mo.			.20**			.65**			.47**			-.12*
Reabuse - post											.40**	.31**
Reabuse - 12-mo.												.35**
Variance explained by model (R^2)	.09**	.51**	.64**	.34**	.21**	.42**	.58**	.69**	.78**	.11**	.19**	.25**

Note: Significance tests are one-tailed and use bias-corrected bootstrap standard errors.
^{t}p < .10. *p < .05. **p < .01.

showed substantial stability across time and also had strong effects on each other and on resources over time. As expected, effects on reabuse were weaker, but they also remained significant through 24-month followup. Post-intervention resource effectiveness showed the weakest effects across time, due at least in part to the measurement limitations of the single indicator for this post-intervention construct. In contrast, women's difficulty in accessing resources (measured at 12- and 24-month followup) showed strong effects on all subsequent constructs in the model.

The model explained a substantial proportion of variance in most of the constructs. As expected, variability in reabuse was less completely explained by the model than were differences on social support, resources, and quality of life, but the model accounted for a significant proportion of the variability in all constructs at all three time-points.

Tests of Mediation

Formal tests confirmed that intervention effects on reabuse were mediated by the chain of intervening relationships shown in Figure 2. Significance of the effect of intervention on quality of life and of the effect of quality of life on reabuse at post-intervention and 24-month intervention confirmed two of Baron and Kenny's (1986) four conditions for testing mediation. To verify that the intervention had a significant direct effect on reabuse in the absence of the mediator, paths from quality of life to abuse at each of the three time points were set to zero and replaced with direct paths from the intervention; these were significant for post-intervention reabuse (standardized $\underline{B}_{post}$ = -.12, p < .05) and reabuse at 24-month followup ($\underline{B}_{24}$ = -.11, p < .05) but only suggestive for 12-month followup ($\underline{B}_{12}$ = -.06, p = .17). Testing the final condition, direct paths from intervention to reabuse at each time period were added to the model in Figure 2 (with the paths from

mediator to abuse not constrained to zero); none of the direct paths from intervention to abuse was significant, indicating that the effects of intervention on reabuse at the post-intervention and 24-month followup points were completely mediated by the intervening variables.

The same procedures, applied to the mediation of intervention effects on quality of life, verified complete mediation of these effects, as well. The intervention had significant direct effects on quality of life at all three time points when the intervening effects of social support and resources were set to zero (B_{post} = .21, p < .05; B_{12} =.12, p < .05; B_{24} = -.06, p = .11). With the mediating effects also estimated, none of the direct effects from intervention to quality of life was significant, confirming that all of the effects of intervention on quality of life were mediated by social support and resources.

By using procedures for decomposition of indirect effects (see Fox, 1980; Brown, 1997), it was possible to disentangle the complex effects of the mediational chain on outcomes across time. This involved calculating the specific indirect effect for each compound path from intervention to outcome and determining what proportion of the total effect was accounted for by paths operating through specific intervening variables. For both quality of life and reabuse, the stronger mediator of intervention effects was social support. At 24-month followup, 67% of the effect of intervention on reabuse was mediated through social support alone (not involving any resource variable); 16% was mediated through resources alone, and 17% was mediated through both, at either post-intervention or 12-month followup. For quality of life, 78% of the total intervention effect at 24-month followup was mediated through social support alone; 14% was mediated through resources alone, and 9% was mediated through both social support and resources.

Reabuse at Time 2 was an important mediator of the effect of the intervention on later reabuse. Half (50%) of the intervention effect on 24-month reabuse could be accounted for by reabuse at the post-intervention point. However, 38% of the effect of the intervention on reabuse was mediated by quality of life at 12-month followup, indicating that substantial long-term effects were still being manifested by changes occurring during the first year following the intervention.

Discussion

As hypothesized, increased social support and access to community resources improved the quality of life of women with abusive partners and protected them from further victimization over time. Further, women who received the free services of a community based, strengths-based intervention were more likely to report increased social support and less difficulty accessing community resources, and these factors led to higher quality of life and reduced risk of future victimization over time.

It is relatively uncommon in the social science field for intervention effects to persist over time. The fact that group differences continued to exist even two years post intervention speaks to the potential for strengths-based programs to instigate long-term improvement in participants' lives. We believe that the lasting change was the result of the intervention's focus on: (1) enhancing the women's inherent abilities, talents, and strengths; (2) mobilizing the community to effectively respond to women's needs for resources, services and opportunities; and (3) working collaboratively and respectfully with participants, as they guided the focus of the intervention in their own communities. Such intervention components were deliberately chosen to maximize the likelihood of change continuing over time (Dunst, Trivette, & Thompson, 1994; Fraser & Galinsky, 1997;

Saleebey, 1997).

These analyses indicate that community based, strengths-focused interventions can have a long lasting impact on the lives of women with abusive partners. While no one intervention will serve as a panacea for this complex social problem, continued positive change has now been shown to be an effect of a program that respected women's natural strengths and abilities, that was individualized to meet the unique needs of participants, and that was guided by the women themselves.

Question #2. Do intervention effects continue to the 36 month time point?

<u>Retention Rate at 3-year follow-up</u>

Of the original sample of 141 women who were enrolled in the first half of the study, 124 (88%) were located and interviewed three years after their post-intervention interview. Because research resources were not available to support ongoing contact and tracking between the 2- and 3-year followup interviews, retention did not reach the level of 95+% achieved at previous interviews. However, of women who had been interviewed at 2-year followup, 93% were successfully interviewed one 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 followup on any of the pre-intervention measures. Additionally, there were no differences on mean levels of the major outcome variables at previous followups (F(6, 117) = 0.87, p > .50) or on outcome trajectories through the 2-year followup interview (F(18, 1089) = 0.66, p > .80).

<div align="center">Results</div>

<u>Contact with Assailant</u>

By 3-year followup, 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 six months. Including those in relationships, more than one third (35%) of the sample had contact with their assailants several times a month or more. Twenty percent of the women who were not involved reported that the assailant had tried to convince her to reunite during the previous six 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.

Involvement in New Relationships

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

Condition Effects on Primary Outcome Variables at 3-year Followup

Previous analysis of the first two years of post-intervention followup focused on five major outcome variables: physical abuse, psychological abuse, depression, quality of life, and social support. Significant condition effects in favor of the advocacy intervention were found on three of these outcomes across the two years -- physical abuse, quality of life, and social support. Additionally, the experimental condition showed a significant impact over time on women's difficulty in accessing community resources.

In the current analysis, oneway multivariate analysis of variance (MANOVA) was used to determine whether significant between-condition differences seen at 2-year followup were maintained through 3-year followup. To preserve statistical power in light of the 50% reduction of sample, an alpha of .10 was set for these analyses. Because the comparisons between experimental and control group were inherently directional, one-tailed tests were used.

The oneway MANOVA between conditions on four outcome variables (physical abuse, quality of life, social support, and difficulty accessing resources) was significant (multivariate $F(4, 119) = 1.57$, one-tailed $\underline{p} < .10$), indicating overall differences between the advocacy and control conditions at 3-year followup. Multivariate $\eta^2 = .05$, meaning that condition explained 5% of the variability across the four dependent variables.

To identify effects associated with specific outcome variables, univariate oneway ANOVA's were examined for each individual dependent variable. Condition had a significant effect on social support ($F(1, 122) = 4.69$, one-tailed $\underline{p} < .02$), accounting for 4% of the variance. Estimated means for social support were 5.48 (Experimental) and 5.09 (Control), with s.e. = .13. Quality of life also showed a significant condition effect ($F(1, 122) = 2.51$, one-tailed $\underline{p} < .06$), accounting for 2% of the variance. Estimated means for quality of life were 5.07 (Experimental) and 4.77 (Control), with s.e. = .13. Condition effects were not significant for difficulty accessing resources ($F(1, 122) = 1.25$, one-tailed $\underline{p} = .14$) or for physical abuse ($F(1, 122) = 0.83$, one-tailed $\underline{p} = .18$). Mean level across conditions for resource difficulty was 2.11 (s.e. = .08) and for physical abuse, 0.75 (s.e. = .14).

Experience of Physical Abuse at 3-year Followup

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 change from 2- to 3-year followup at the individual level, with abuse levels at the two time points correlating only .53. Level of abuse changed for approximately one third (32%) of the women, with 10% who reported no

abuse at 2-year followup experiencing abuse at 3-year followup, and 10% who had reported abuse at 2-year followup experiencing no abuse at 3-year followup.

Covariates of Reabuse at 3-year Followup

Three years after the advocacy intervention, physical abuse was no longer significantly affected by having received advocacy services. However, two important mediators of reabuse still showed the significant impact of advocacy: quality of life and social support. To see if the association between these mediators and reabuse persisted, we used quality of life and social support as predictors of reabuse three years after the intervention. Table 5 shows the results of hierarchical logistic regression predicting incidence of physical abuse during the six months prior to 3-year followup from hypothesized mediator variables measured one year earlier (at 2-year followup). Prior abuse was controlled by entering abuse at 2-year followup into the first block of the equation; controlling for earlier abuse in this way allowed the remaining coefficients to be interpreted as predicting change in reabuse over the intervening year. Experimental condition (receipt of advocacy services three years prior) was also entered in the first block as a control for possible intervention effects that could emerge once other variables were in the equation. As expected, abuse at 2-year followup was strongly predictive of continued abuse at 3-year followup (odds ratio (OR) = 15.49), while experimental condition had no significant relationship with 3-year reabuse.

Block 2 entered quality of life at 2-year followup, which was a significant negative predictor of reabuse at 3-year followup (OR = 0.63). In block 3, difficulty accessing resources at 2-year followup was also a significant predictor; a one-point increase on the 4-point resource difficulties scale was associated with nearly doubled odds (OR = 1.89) of 3-

Table 5 Hierarchical logistic regression predicting 3-year followup reabuse

Block	Independent variables[a]	Entry block		Final block		L.R. χ^2	df
		B	Odds ratio	B	Odds ratio		
0	Constant	-0.59**	0.56	3.34***	27.82		
1	Control variables					41.11***	2
	Experimental condition	0.63	1.87	0.90	1.45		
	Reabuse at 24-month followup (1 = yes; 0 = no)	2.74***	15.49	3.33***	27.82		
2	Quality of life	-0.47*	0.63	-0.38	0.75	4.84*	1
3	Difficulty accessing resources	0.64*	1.89	-0.39	0.67	2.69[t]	1
4	Total social support	0.07	1.00	0.12	1.07	0.00	1
5	Specific material resources					12.62**	4
	Monthly income (in dollars)	0.00	1.00	0.00	1.00		
	Woman contributed 100% of household income (1 = yes; 0 = no)	-0.16	0.85	-0.53	0.63		
	Employed in prior 6 months	-1.64**	0.19	-1.50**	0.21		
	Problems with social services agency in prior 6 months	0.42[t]	1.52	0.46[t]	1.55		
6	Specific social supports					11.22**	3
	People who gave practical help	-0.42*	0.61	-0.42*	0.65		
	People woman talked with about personal matters	-0.41*	0.66	-0.41*	0.66		
	People who made things hard	0.46*	1.50	0.46*	1.50		

Full model χ^2 = 72.49(df=12), p < .001

N = 123 women with 3-year followup interview; 1 case omitted due to missing covariate data.

[a] Unless otherwise specified, all independent variables were assessed one year prior to the dependent variable (i.e., at 2-year followup).

[t] p < .10. * p < .05. ** p < .01. *** p < .001. Significance tests for odds ratios are 1-tailed; those for L.R. χ^2 are 2-tailed.

year reabuse, controlling for abuse one year earlier. With resource difficulties in the equation, the contribution of quality of life dropped to nonsignificance, signaling that the effects of quality of life were completely mediated by difficulties accessing resources. Total social support, entered in block 4, had no significant relationship with 3-year reabuse and did not serve to mediate the effects of quality of life. Even when entered at block 2, in place of resource difficulties, total social support made no significant contribution to predicting reabuse.

Blocks 5 and 6 contained specific material and social resources hypothesized to further predict 3-year followup reabuse. Both blocks made significant additional contributions to the equation. In block 5 were variables related to major financial resources. Neither monthly income nor women's contribution to the household income were significant predictors of reabuse. Having been employed during the six months prior to the 2-year followup interview was a significant negative predictor, associated with an 80% reduction in the odds of reabuse (OR = 0.19); and having encountered problems with the social services (public assistance) agency was a marginally significant positive predictor of reabuse one year later (OR = 1.52). At block 5, with financial resource variables in the equation, difficulties accessing resources no longer made a significant contribution to predicting reabuse, indicating that the effect of resource difficulty was completely mediated by financial resources. In block 6, all three forms of social support reported at 2-year followup were predictive of reabuse one year later. The number of people who provided practical help and the number with whom the woman had talked about personal matters were both negatively predictive of later abuse (OR = 0.61 and 0.66, respectively), while the number of people who had made life hard for the woman was positively predictive (OR = 1.50).

The combined set of independent variables made significant improvements in prediction of reabuse compared to a constants-only model (model LR χ^2 = 72.49(df=12), p < .001). According to the Nagelkerk R^2, the variables in the equation jointly accounted for 59% of the variance in reabuse at 3-year followup. Classification accuracy improved to 84% for the final equation compared to 64% accurary for the baseline constants-only equation.

Discussion

Analyses indicated that the program's effect on risk of revictimization did not continue three years post intervention. Women were experiencing about the same rate of victimization at 3-year followup that they were at 2-year followup (36%), although the abuse was not always against the same women. However, having worked with an advocate three years prior continued to have a positive impact on women's quality of life and level of social support. It appears that the risk of being abused three years post-shelter stay was increased by a number of factors present *one year prior*, including women's: (1) having been abused; (2) having had problems with the state governmental pubic assistance agency; and (3) having people around that made their lives difficult. Women were at *less* risk of abuse if they: (1) were employed one year prior; and (2) had people around one year prior 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. Women who had been employed and who had supportive people in their lives were less likely to have been abused again, while women having problems with public services and 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. However, it also appears

that some women may be at increased risk of future intimate partner violence if they are having financial difficulties and/or lack supportive individuals in their lives.

The link between access to financial resources and risk of future abuse 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.

The study's finding that social support related to risk of reabuse also corrobates prior research (Bowker, 1984; Dobash et al., 1985; Donato & Bowker, 1984; 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.

These findings support the research study's underlying strengths-based philosophy, that 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 (1) failure to provide women with adequate economic opportunities, and (2) failure to hold offenders accountable (see Goodman et al.,

1993; Sullivan, 1997; United Nations, 1989). 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, enough is known to support the need to increase community supports for all

women. Increased economic opportunities for women and increased sanctions for abusers

will likely prevent and deter intimate partner violence.

Question #3. Were some interventions more effective than others, and if so, what were the components of a "successful" intervention? Was the intervention more successful at reducing victimization for women in some types of situations than for others?

While prior analyses had indicated that the experimental intervention was effective in general, analyses comparing group means cannot reveal differences occurring across various interventions within the experimental condition. Analyses were conducted to assess characteristics of individual interventions in order to explore whether some interventions were more effective than others. Intervention components were assessed as they related to program outcomes of (1) improved ability to access community resources, (2) improved quality of life, (3) higher social support, and (4) decreased risk of abuse.

Domains in which Women were Initially Interested in Working

At the pre-intervention interview, each woman regardless of experimental condition was asked whether she wanted to work on each of eleven domains (child care, education, finances, goods and services, health, housing, employment, child issues, legal, social, and transportation). Endorsement frequencies for each domain are presented in Table 6.

In many instances, areas endorsed by women were associated in understandable ways with background or other variables. Wanting to work on housing was strongly related to currently staying in someone else's residence (r = .53). Wanting to work on childcare was associated with having children under age 5 (r = .48). Requesting help with legal issues was correlated with the woman being married to the assailant (r = .27) as well as experiencing more threats (r = .23) and psychological abuse (r = .33) from him prior to the intervention. Women interested in working on education issues were more likely to be current students

Table 6
Advocacy domains women wanted to work on and intervention activity

Advocacy domains	Proportion of Women Wanting to Work on Domain	Advocacy Intervention Activities			
		Mean	s.d.	Minimum	Maximum
Goods & services	.90	3.68	1.92	0	6
Social support	.78	1.21	1.64	0	6
Health	.78	2.19	2.03	0	6
Education	.73	3.20	2.20	0	7
Transportation	.71	1.92	1.89	0	6
Finances	.70	2.19	2.19	0	6
Child issues	.60	2.04	2.15	0	6
Employment	.59	3.09	2.65	0	8
Legal	.59	3.21	2.61	0	8
Childcare	.53	1.73	2.06	0	5
Housing	.44	2.63	2.16	0	6
Amount of intervention activity [a]					
In-person contacts with advocate per week		2.28	1.11	1	7
Hours of in-person contact with advocate per week		6.38	4.70	1	25
Phone hours with advocate per week		2.34	4.44	0	40
Total hours on advocacy activities		91.47	109.61	0	774

[a] Intervention activity measures were log-transformed for analysis to correct positive skew and limit the influence of extreme scores; to facilitate interpretation, means are presented in original metric

(r = .22), and those wanting to work on acquiring goods and services had less money to live

on (r = -.25). Finally, wanting to work on health issues was associated with higher levels of

depression (r = .17) and with having sustained more injuries due to the abuse (r = .16).

Intervention activity. Total amount of intervention activity was measured at the

post-intervention interview in several ways. Women were asked how many times a week

they saw their advocate in person and how much time per week they spent with the

advocate, both in person and on the phone. They were also asked to estimate how much time

they had spent working with their advocate on each of the eleven domains over the course of

the intervention. These were summed for each woman, yielding the total amount of time that

had been spent actively working on advocacy activities. Distributions of the measures of

intervention activity are summarized in Table 6.

Specific intervention activities. Women reported seeing their advocates about twice

a week over the ten week intervention ($\underline{M}$ = 2.3; $\underline{SD}$ = 1.18), and spent on average 6.4 hours

a week with them ($\underline{SD}$ = 4.68). The types of community resources women tried to obtain

included education (84%), legal assistance (72%), employment (72%), services for their

children (68% of the mothers), housing (67%), child care (63% of the mothers),

transportation (62%), financial assistance (61%), health care (60%), and social support

(47%). Ninety eight percent reported being somewhat or very satisfied with the project

(87% reporting "very satisfied").

Cluster Analysis

Cluster analysis was used to determine if the advocacy interventions received by

individual women could be categorized into subtypes that might differ as to content and

level of activity. Cases were sorted into clusters based on activity scores in the eleven

advocacy domains. Because ranges differed somewhat across domains, scores were

standardized to equalize the influence of different domains. The squared Euclidean distance

was used as a similarity measure, reflecting not only interindividual profile similarities (relative magnitude) but also similarities in absolute magnitude. Thus, clusters reflected groupings of individuals who were similar in level of activity as well as relative profile pattern across the eleven advocacy domains.
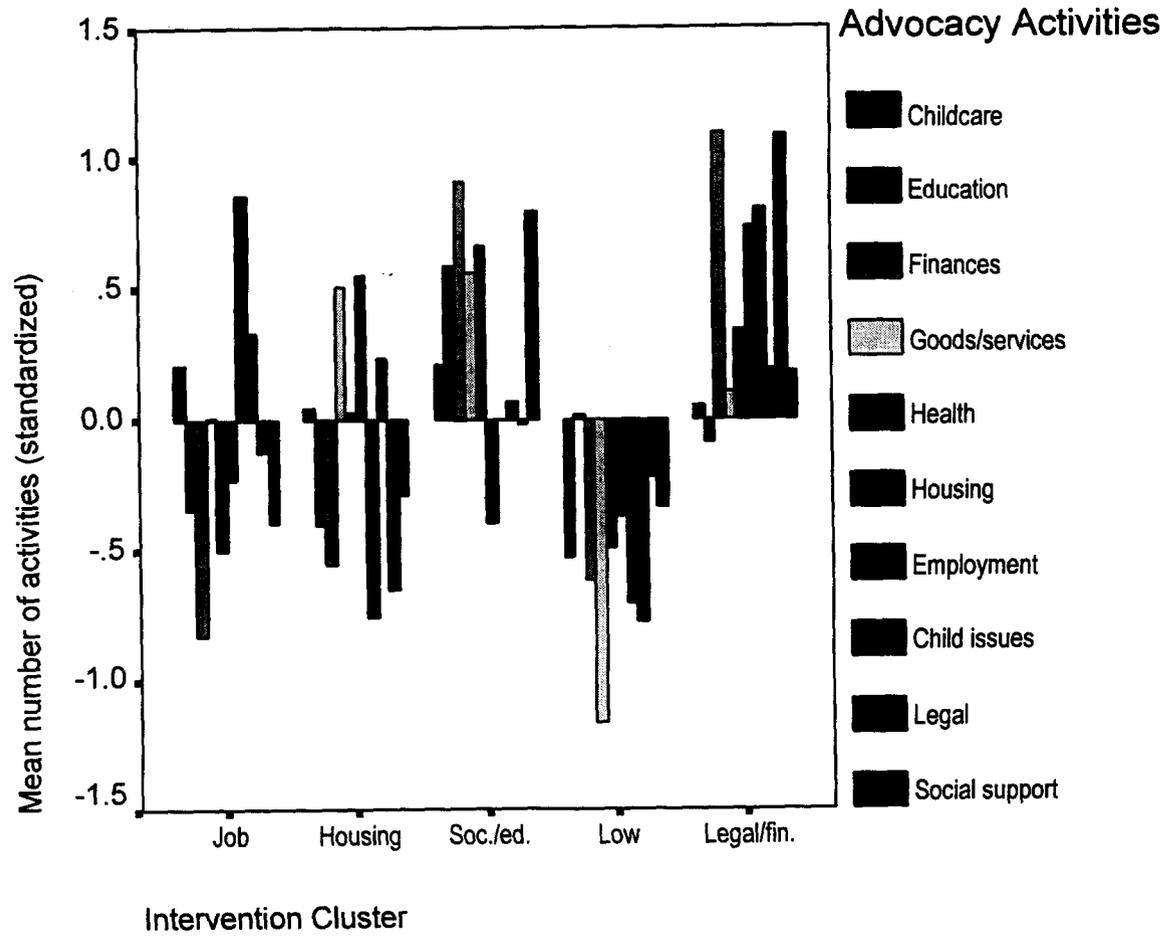
The cluster analysis was done in several stages, as recommended by Blashfield and Aldenderfer (1988). Initial clusters were derived by Ward's method, a hierarchical agglomerative technique minimizing within-cluster variation. The centroids of the initial clusters were then submitted to an iterative clustering procedure (K-means) to refine cluster membership and reduce the incidence of cluster misassignment common with agglomerative methods.

Scree plots of fusion coefficients were clear in indicating the presence of five distinct clusters. To verify that the 5-cluster solution best represented the data, it was compared with the 4-cluster solution on several diagnostic statistics (Sneath & Sokal, 1973). The 5-cluster solution showed lower cluster dispersion (within-cluster spread), greater cluster distinctness (within-cluster spread weighted by distance between clusters), and fewer cases that were farther from their own cluster center than the distance between clusters. This solution also yielded a reasonably even distribution of cases across clusters.

Advocacy Clusters

Cluster means for each of the eleven advocacy domains are illustrated in Figure 3. The first section of Table 7 indicates significant results of Tukey paired comparisons among clusters for each activity domain. Cluster names and interpretations were derived from these comparisons. Interventions in the *Legal/financial* cluster involved significantly more legal activities than any other cluster, plus high levels of activity around finances, housing, and employment. Housing interventions had high levels of activity in this domain, as well as

Figure 3 Standardized cluster means for cluster defining variables

(Note: To conserve space, transportation, on which there were no significant cluster differences, was omitted from the figure.)

Table 7 Advocacy cluster means on activity scores and amount of intervention activity

Dependent variables	Advocacy cluster means					
	Legal/fin. (n = 24)	Housing (n = 26)	Job (n = 25)	Social/ed. (n = 33)	Low level (n = 29)	$F(4, 132)$
Advocacy domains (cluster-defining variables)						
Legal	1.09^a	-0.66^{bc}	-0.13^b	-0.02^{bd}	-0.23^b	14.38***
Finances	1.09^a	-0.56^b	-0.84^b	0.91^a	-0.62^b	59.22***
Housing	0.73^a	0.55^a	-0.24^b	-0.40^b	-0.37^b	8.80***
Goods & services	0.10^{ab}	0.51^{ab}	0.00^a	0.56^b	-1.16^c	23.33***
Employment	0.80^a	-0.76^b	0.86^a	-0.01^c	-0.71^b	29.20***
Social support	0.18	-0.29^a	-0.40^a	0.80^b	-0.34^a	8.50***
Education	-0.09^a	-0.41^a	-0.35^a	0.58^b	0.02	5.57***
Health	0.34^{bc}	0.02^{ac}	-0.51^a	0.67^b	-0.50^a	8.32***
Childcare	0.05	0.04	0.21^a	0.21^a	-0.53^b	3.10*
Child issues	0.19^a	0.23^a	0.33^a	0.07^a	-0.78^b	6.56***
Transportation	0.46	-0.26	-0.17	0.13	-0.16	2.28
Amount of intervention activity (variables external to cluster solution)[e]						
In-person contacts per week	2.68	2.46	2.16	2.18	2.10	0.85
In-person hours per week	6.67	6.77	5.44	7.36	5.52	1.21
Phone hours per week	3.33	1.54	1.68	3.21	1.76	1.67
Total hours on advocacy	146.25^a	85.15	68.00^b	82.50	81.93^b	3.63**
Participant-rated effectiveness and satisfaction with intervention						
Effectiveness	3.41^a	3.41^a	3.09^b	3.37	3.30	2.07^t
Satisfaction	3.91^a	3.90^a	3.60^b	3.82	3.69	3.21*

[abcd] Within each dependent variable, means with different superscript letters are significantly different at $p < .05$, according to Tukey paired comparisons.

[e] For analysis, activity variables were log-transformed to correct positive skew and limit the influence of extreme scores; to facilitate interpretation, means presented in original metric.

[t] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

substantial levels of advocacy around goods and services. *Job* interventions focused primarily on employment. Interventions in the *Social/education* cluster had the highest levels of activity around education and social support, as well as high levels of attention to finances, goods and services, and health. *Low Level* cluster interventions had below-average levels of activity across all domains. Several domains were not a major focus in any of the clusters. Childcare comprised a secondary focus among interventions in the *Jobs* and *Social/education* clusters, while other child issues were a secondary focus in all except the *Low Level* cluster. Activities focusing on transportation were not significantly different among the clusters.

The second section of Table 7 shows cluster means on several measures of amount of intervention activity. There were no significant differences among the clusters on the number of times women say their advocates each week or on the amount of time spent with them, either in person or on the phone. On average, women in all clusters saw their advocates two to three times per week and spent between 5.75 and 7.5 hours with them in person plus 1.5 to 3.5 hours on the phone. Although the total amount of time spent with advocates did not differ by cluster, there were significant differences on the amount of time spent pursuing advocacy activities, with women in the *Legal/financial* cluster reporting significantly more time spent on advocacy tasks than those in the *Job* or *Low Level* advocacy clusters.

Cluster means on effectiveness of and satisfaction with the intervention are presented in the third section of Table 7. Although ratings were uniformly high, there were significant cluster differences on satisfaction: ratings were more positive for interventions in the *Legal/financial* and *Housing* clusters compared with the *Jobs* cluster. Parallel, marginally

significant differences were found for average ratings of effectiveness across the

intervention domains.

Prediction of Advocacy Cluster Membership

Because the Community Advocacy Project was designed to be client directed, it was

important to examine the correspondence between areas in which women wanted to work

and domains addressed in the interventions. To answer this question, multinomial logistic

regression was used to examine the extent to which membership in individual advocacy

clusters could be predicted from women's pre-intervention statements about areas they

wanted to pursue. Multinomial logistic regression (Hosmer & Lemeshow, 1989) is an

extension of binomial logistic regression (predicting the log odds of the response category in

a dichotomous outcome variable) to the case in which several response categories are

simultaneously contrasted with a single comparison category. In the current analysis, the

Legal/financial category was taken as the comparison category for the other four clusters.

The odds ratios that constitute the typical results from logistic regression indicate changes in

odds ratios that are associated with a unit increase in an independent variable. In the

multinomial case, odds ratios are limited to comparisons with a single designated category.

However, derivative probabilities can be calculated to indicate shifts in absolute probability

of membership in each cluster, without reference to a comparison category, given a one-unit

change in a given independent variable (Long, 1997). Table 8 contains these derivative

results. Each cell entry indicates the shift in probability of cluster membership that is

associated with an affirmative response to the question of whether a given domain was an

area in which the woman wanted to work. Collectively, use of the eleven desired advocacy

domain variables made a significant improvement in model fit relative to a constants-only

model: LR χ^2 (df = 44) = 65.53, p < .02.

Many of the associations between women's pre-intervention interests and the intervention focus were easily interpretable. As can be seen in Table 8, if a woman stated at her pre- intervention interview that she wanted to work on legal issues, the probability that the intervention she received would be categorized in the *Legal/financial* cluster increased by .2, while the probability that she would receive an intervention classified in the *Housing* cluster declined by .13. Wanting to work on financial issues increased the probability of a *Legal/financial* cluster intervention by .12 while reducing the probability of a *Low Level* cluster intervention by .13. Mention of wanting to work on housing issues was associated with an increase of .14 in the probability of an intervention in the *Legal/financial* cluster and .09 in the *Housing* cluster; this is contrasted with a .23 reduction in the probability of a *Social/education* cluster intervention. Similarly, wanting to work on social support issues was associated with a .16 increase in the probability of a *Social/education* cluster intervention.

Less intuitively interpretable associations were noted in the employment domain. Wanting to work on employment was associated with a .14 decrease in probability of receiving a *Job* cluster intervention but an increase of .14 in the probability of a *Legal/financial* intervention. Wanting to work on education was associated with an equal increase of .07 in the probability of both a *Social/education* cluster intervention and a *Job* intervention. Finally, wanting to work on childcare was linked with a .18 increase in probability of a *Job* cluster intervention.

Table 8

Multinomial logistic regression predicting cluster membership

Independent variables	Effect on probability of cluster membership (derivatives)[a]				
	Legal/ financial (n = 24)	Housing (n = 26)	Job (n = 25)	Social/ education (n = 33)	Low Level (n = 29)
Advocacy domains in which women wanted to work					
Legal	.20	-.13	-.04	-.00	-.02
Finances	.12	-.03	.02	.02	-.13
Housing	.14	.09	.05	-.23	-.05
Goods & services	.11	-.07	-.14	.20	-.10
Employment	.14	-.12	-.14	.02	.10
Social support	-.08	-.09	.08	.16	-.07
Education	-.18	.00	.07	.07	.04
Health	.04	.03	-.01	.01	-.07
Childcare	.06	.05	.18	-.05	-.22
Child issues	.01	.02	-.09	-.06	.13
Transportation	-.07	.02	-.05	.11	-.01
Constant	-.31	.19	.09	-.27	.30

Fit compared with a constants-only model: LR χ^2 (df = 44) = 65.53*

Additional bivariate predictors (pre-intervention measures)						LR χ^2 (df = 4)
Have own residence	-.17	-.03	-.01	.21	.00	11.08*
Currently a student	-.18	.12	.20	-.04	-.10	8.71[t]
Injuries due to abuse in prior 6 months	.04	-.03	-.02	-.01	.01	8.96[t]
Quality of life	-.09	.04	.01	.14	-.01	12.80*

[a] Each cell entry indicates the probability of cluster membership that is associated with an affirmative response to the question of whether each domain was an area that the woman wanted to work on.

[t] $p < .10$. * $p < .05$.

The bottom section of Table 8 indicates the changes in cluster membership probability associated with other measures of women's pre-intervention situations and needs. Women who already had residences of their own were more likely to receive *Social/education* interventions and less likely to have *Legal/financial* interventions. Those who were students were more likely to receive *Job* or *Housing* cluster interventions and less likely to have interventions in the *Legal/financial* cluster. Having had more injuries from abuse increased the probability of a *Legal/financial* intervention: each point increase on the 10-point injury scale was associated with an increase of .04 in the probability of being in this cluster. For quality of life, each point increase on the 7-point scale was associated with a .09 reduction in the probability of having a *Legal/financial* intervention and a .14 increase in the probability that the intervention would be in the *Social/education* cluster. Only quality of life made a significant additional contribution to understanding cluster membership once the domains in which women wanted to work were accounted for: LR $\chi^2_{(df=4)}$ = 9.32, p = .05. The effects of having a residence, being a student, and the impact of injuries due to pre-intervention abuse were completely mediated by the domains in which women wanted to work. No other differences were found among clusters as to women's demographics, life circumstances, previous abuse experience, or other pre-intervention measures.

Outcome Differences Among Clusters

Another important question was whether variations across interventions were associated with differences in outcome. Hierarchical regression methods were used to address this question -- ordinary least squares (OLS) linear regression to predict continuous outcomes and binomial logistic regression to predict dichotomous outcomes. For each analysis, all significant multivariate predictors of cluster membership (questions about

whether women wanted to work on each of the eleven advocacy domains plus pre-intervention quality of life) were entered into the regression in a first block, to control for pre-existing differences among women in the clusters. Advocacy cluster was entered in the second block, as four dummy variables; the *Low Level* intervention cluster was used as the omitted comparative category.

Controlling for pre-intervention variables that were predictive of cluster membership, significant differences were found for two outcomes -- post-intervention employment and housing (see Table 9). Women in the *Legal/financial* cluster were significantly more likely to be employed post-intervention compared with women in the *Low Level* intervention cluster (odds ratio = 11.51). Women in the *Jobs* cluster were no more likely to be employed at post than were women in the *Low Level* cluster. Having one's own residence post-intervention was more likely for women in the *Housing* cluster (odds ratio = 8.19). No significant cluster differences were found for other post-intervention outcomes that were examined: social support, quality of life, physical abuse, depression, difficulties obtaining resources, income, or student status.

Discussion

As intended, the advocacy interventions could generally be categorized as being unique to the individual needs of the women participating. With few exceptions, women reported working in areas they had intended to work in, and interventions matched women's stated needs and goals. A notable exception to this related to women wanting employment pre-intervention. Wanting to get a job was actually associated with a .14 decrease in probability of membership in the *Job* cluster. The fact that women wanting employment were more likely to end up in the *Legal/financial* cluster likely speaks to two issues. First,

Table 9

Prediction of post-intervention outcome from advocacy cluster (hierarchical logistic regression)

Outcome Variable	Independent Variables	Coefficient	Odds Ratio	$LR \chi^2$ for block		
				$LR \chi^2$	df	p
Employment						
Block 1	Control variables[a]	--.--	--.--	44.41	13	.001
Block 2[b]	Legal/financial cluster	2.44	11.51**			
	Housing cluster	1.61	5.00			
	Job cluster	0.96	2.60			
	Social/education cluster	-0.05	0.95	11.26	4	.02
Housing (having one's own residence)						
Block 1	Control variables[a]	-.--	--.--	26.16	13	.02
Block 2[b]	Legal/financial cluster	0.09	1.09			
	Housing cluster	2.10	8.19*			
	Job cluster	-0.44	0.65			
	Social/education cluster	1.12	3.08	8.55	4	.02

[a] Block one of each logistic regression equation included 13 control variables: pre-intervention quality of life, eleven variables indicating whether women had wanted to work on each advocacy domain, and pre-intervention status on the outcome variable.
[b] For Block 2 of each regression, the *Low Level* intervention cluster was used as the omitted comparison category.
* $p < .05$. ** $p < .01$.

at the time this intervention was occurring in Michigan, state welfare reform policies were in effect that made obtaining employment for women on welfare very difficult. Women often lost their health benefits and food stamps immediately upon or shortly after gaining employment, which left them and their children in a precarious situation. Finding employment that paid well enough to lose welfare benefits and to handle increased transportation and child care costs was quite difficult and often resulted in women seeking other means of financial assistance. This could have led some women toward interventions representative of the *Legal/financial* cluster.

Another reason some women wanting employment may have actually ended up in the *Legal/financial* cluster might have been related to safety concerns. Membership in the *Legal/financial* cluster was associated with having sustained injuries from their assailants (indicating severe abuse), not having their own residences, and reporting lower quality of life. These women appear to have been in higher crisis than women in other clusters, which explains their need for legal and financial assistance and also explains why they spent more time on advocacy activities compared to women in the *Jobs* cluster. Women having immediate housing and/or safety concerns may have <u>wanted</u> to work on obtaining employment and yet later realized they had other priorities that had to be handled first. It is interesting that, even though women reporting wanting employment were more likely to end up in the *Legal/financial* cluster, women in the *Legal/financial* cluster were more likely to be employed post-intervention than women in either the *Jobs* or *Low Level* clusters.

As expected, no cluster differences were found for the major outcome variables of social support, quality of life, physical abuse, depression, or difficulties obtaining resources. Because the interventions were intended to be flexible to women's individual changing

needs over time, there was no reason to believe that one intervention would be more

"effective" than another in resulting in positive change.

Question #4: What other antecedents account for differences in victimization over time?

Due to the lack of longitudinal studies examining intimate partner violence over time, little is known about risk factors for continued victimization by a partner or ex-partner. While prior studies have determined that ongoing abuse is common (Sherman, 1992; Straus, Gelles, & Steinmetz, 1980) and that abuse often becomes more-severe with time (Hilbert & Hilbert, 1984; Okun, 1986) we also know that some women are successful in ending the violence they are experiencing, and the more we can discover about these successes the better able we will be to assist other survivors of domestic violence.

The National Research Council's Panel on Violence Against Women recommended that "all research on violence against women should take into account the context within which women live their lives and in which the violence occurs" (p. 47) and "Longitudinal research ...should be undertaken to study the developmental trajectory of violence against women (p. 90). This data set allowed for the examination of the trajectory of domestic violence over time. It was expected that, by examining variables that predict later violence, light could be shed on issues that might be amenable to intervention.

The current analyses examined a number of variables, including severity of recent abuse, number of previous separations, duration of relationship, whether they were married pre-intervention, time from the beginning of the relationship to the first incident of abuse, extent of psychological abuse, duration of woman's shelter stay pre-intervention, the woman's intention to remain in or leave the relationship, the batterer's substance abuse, the woman's level of resources, the woman's depression, and the woman's sense of self-efficacy. Variables were selected based in part on lethality research (e.g., Campbell, 1986;

Cazenave & Zahn, 1992; Wilson & Daly, 1993), and on theories of power and control (e.g.,

Sev'er, 1997; Wilson & Daly, 1992).

Method of Analysis

Mixed effects logistic regression (Hedeker & Gibbons, 1994) was used to identify

baseline characteristics, situations, and circumstances that were related to reabuse by a

partner or ex-partner during the 2-year followup period. Mixed effects regression (also

known as multilevel modeling or hierarchical linear modeling) is an extension of multiple

regression that allows one to predict not only a single variable at one point in time, but also

the trajectory of the variable as it is measured over time. The trajectory can be linear or it

can incorporate nonlinear features modeled through polynomials or explicit piecewise

segments. The technique has a number of advantages over other strategies for longitudinal

data, including the ability to include partially missing cases in the model and to incorporate

data from mistimed measures. Therefore it is widely recommended for analyzing change

trajectories and the covariates of change over time.

A necessary first step to identifying covariates of reabuse over time was developing a

model that would adequately reflect the observed trajectory of reabuse over the 2-year

followup period. Graphical methods (Stoolmiller, 1995) were used to visualize the trajectory

and identify an appropriate statistical form for the model. Because the pattern of reabuse had

been found to differ significantly for women randomly assigned to work with advocates

compared with those in the control group (Sullivan & Bybee, 1999), experimental condition

was incorporated into the graphical representations and considered in the specification of the
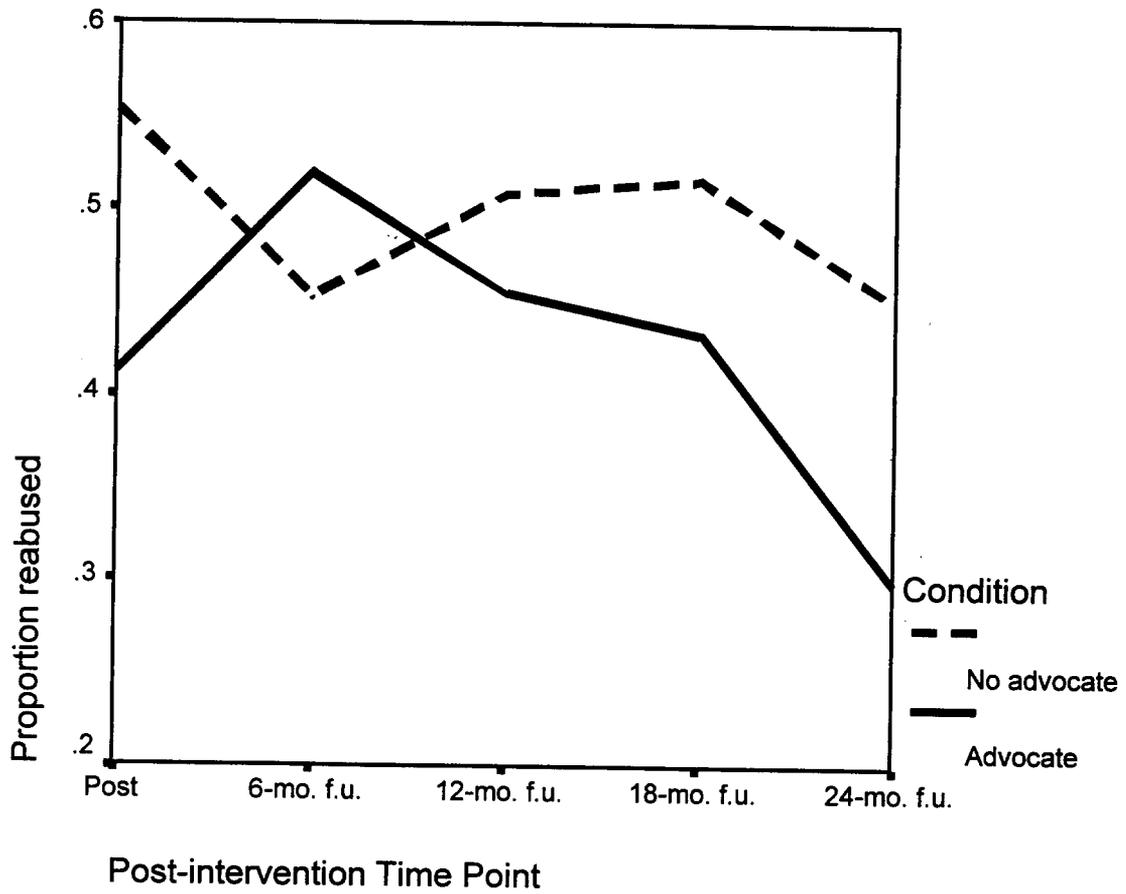
baseline trajectory.

The proportion of women in each condition who reported reabuse at each followup

measurement point is shown graphically in Figure 4. The figure shows that the two

conditions start out at different points at the post-intervention point. The groups then show a

clear divergence in slope in the first segment of the trajectory, with the advocacy group

increasing and the control group declining. This has previously been interpreted as a short-

term increase in reabuse for the advocacy group following the departure of the advocate,

whose presence may have afforded some protection from the assailant during the

intervention (Sullivan & Bybee, 1999). After the 6-month followup, the curves for the two

groups are not as dramatically different in form, although they appear to differ in slope and

endpoint.

To adequately reflect the form of the trajectories, a piecewise model was developed

that included separate parameters for the intercept (post-intervention), the first slope

segment (to 6-month followup), and the remaining slope segment (6- to 24-month

followup). Piecewise modeling is useful in modeling phenomena where trajectory shifts are

expected at specific points in time (Bryk & Raudenbush, 1992). This strategy has been

recommended especially for intervention research, where trajectory changes are predicted at

specific times surrounding the intervention (see Osgood & Smith, 1995; Wang, Siegal,

Falck, Carlson, & Rahman, 1999.) Because the outcome variable being modeled over time –

incidence of reabuse – was dichotomous, logistic regression was applied, using MIXOR

software (Hedeker & Gibbons, 1996), which specifically accommodates ordinal and

dichotomous dependent variables. Two of the model's three parameters were specified as

random – the intercept and the 6-to 24-month slope; the remaining parameter – the slope

from post-intervention to 6-month followup, which was strongly related to experimental

condition – was specified as a fixed parameter. Including random parameters dramatically

Figure 4

Observed proportion of women reabused by a partner or ex-partner at each followup

measurement, by experimental condition

improved model fit to the data compared to a fixed-parameter model (LR χ^2 = 217.31).

Results of Random Regression

Table 10 summarizes the coefficients of baseline variables found to have significant unique relationships with reabuse over time. Advocacy intervention had a significant effect on all three parameters. Advocacy had a negative effect on the intercept term, indicating that women who worked with advocates were less likely to report reabuse at the post-intervention time-point. The effect of intervention on post to 6-month slope was positive, reflecting the temporary increase in reabuse for the advocacy group shown in Figure 4. Intervention had a significant negative effect on the second slope term, from 6- to 24-month followup, indicating a significantly faster decline in reabuse during this period for the advocacy group compared with the control group.

Elements of the abuse the woman had experienced and her relationship with the abuser were entered into the model following intervention. Controlling for the effects of condition and other variables in the model, severity of recent abuse, operationalized as the extent of injuries due to abuse in the six months prior to the intervention, had a marginally significant relationship (p < .10) with increased odds of reabuse from post-intervention to 6-month followup. Number of previous separations from the assailant had a significant positive effect only on the change in reabuse from 6- to 24-month followup; more separations were predictive of increased likelihood of reabuse during this time-period. Duration of the woman's relationship with the assailant showed a similar but weaker relationship to long-term reabuse trajectory; collinearity between relationship duration and previous separations prevented both from being included in the equation. Other aspects of

Table 10

Piecewise random regression predicting log-odds of reabuse across 24-month post-intervention followup

Independent Variable	Parameter estimates						Sequential improvement in model fit	
	Intercept		Post to 6-mo. slope		6- to 24-mo. slope			
	Estimate	p	Estimate	p	Estimate	p	LR χ^2	p
Constant	-1.03	.18	-0.93	.24	-1.07	.51	-----	---
Advocacy intervention	-1.02	.02	2.87	.01	-1.09	.01	14.42	.01
Injuries in 6 mo. prior to intervention	0.13	.26	0.47	.09	-0.14	.30	13.91	.01
Previous separations from assailant	0.34	.14	-0.45	.39	0.40	.05	10.47	.01
Duration of shelter stay (pre-intervention)	-0.21	.25	-0.01	.98	0.36	.04	13.14	.01
Continuing relationship with assailant (post-shelter)	2.49	.001	0.63	.64	-0.79	.09	34.13	.001
Need to work on obtaining housing	1.05	.02	-1.42	.17	0.38	.33	9.30	.03
Random effects								
Standard deviations	1.94	.001	----	---	1.12	.001		

Note: Correlation between random intercept and random slope (6-mo. to 24-mo. slope) = -.36, p = 15.
N = 270.
[a] Previous separations and duration of shelter stay were log-transformed to reduce positive skew and limit the influence of extreme scores.

the abuse and the relationship with the assailant were not related to reabuse over time –
whether they were married, time from the beginning of the relationship to the first incident
of physical abuse, whether the violence had escalated prior to the shelter stay, the extent of
psychological abuse, and whether the assailant had a substance abuse problem.

Duration of the woman's most recent domestic violence shelter stay was positively
related to change in reabuse from 6-to 24-month followup, with longer stays predicting
increased likelihood of reabuse during this time-period. The woman's intention to continue
her relationship with the assailant was strongly predictive of reabuse during the intervention.
However, pre-intervention intentions to continue the relationship were predictive of
declining likelihood of reabuse from 6- to 24-month followup. Although these two variables
were associated - women who intended to continue the relationship had shorter shelter stays
- the effect of intention on longer-term change in reabuse was not the result of suppression;
the zero-order association between long-term reabuse and pre-intervention intention to
continue the relationship was also negative and significantly greater than zero. Controlling
for both duration of shelter stay and intention to continue the relationship, as well as other
variables in the equation, one final variable was predictive of increased likelihood of reabuse
during the intervention. Women who indicated, pre-intervention, a need to work on
obtaining housing had increased risk of reabuse during this time. No other resource needs
were predictive of reabuse, including needs for legal help, financial assistance, employment,
social support, or goods and services.

Other variables were examined for associations with the likelihood of reabuse and
were found to be unrelated: demographics, including race/ethnicity, age, number of children
in specific age groups; pre-intervention level of resources, including employment, income,

social support, or having one's own residence. Reabuse likelihood also was not related to women's pre-intervention depression or sense of efficacy.
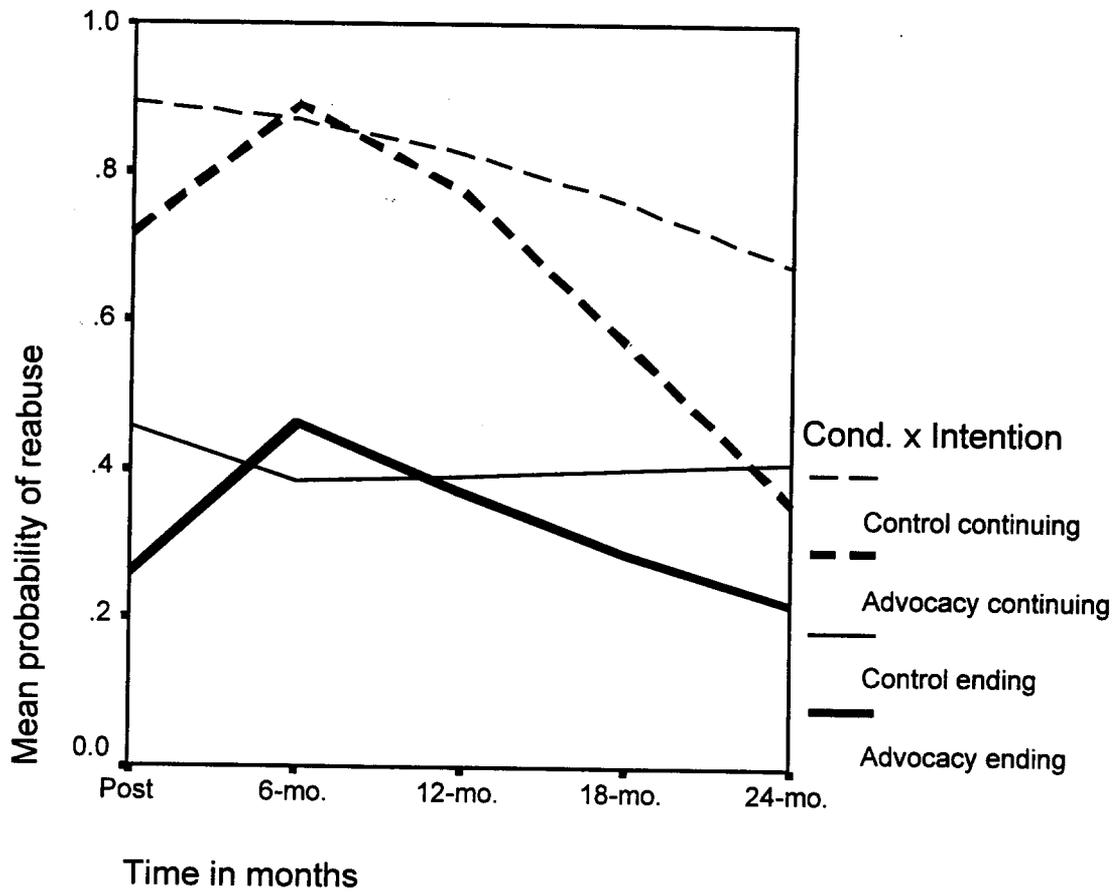
Figure 5 illustrates the estimated probability of reabuse across time for four groups formed by the intersection of the two largest predictors – advocacy intervention and intention to continue the relationship with the assailant. The predicted response probabilities were calculated from the parameter estimates listed in Table 10. The figure clearly shows the temporary increase in reabuse (positive slope) from post to 6-month followup for women receiving advocacy services. For women continuing their relationships, reabuse risk is clearly higher across the initial portion of the time span from post (intercept) to 6-month followup. From 6- to 24-month followup, the reabuse risk declines for women receiving advocacy services, and by 24-month followup, distinctions between those who were continuing vs. ending their relationships at pre are substantially attenuated, at least for those who received advocacy.

Discussion

This analysis examined a number of antecedents, in addition to the advocacy intervention, that may have accounted for differences in women's revictimization over time. After controlling for the effects of the intervention, the variables best predicting violence within the first 10 weeks after exiting a domestic violence shelter were women's intentions to remain in the relationship and women's need for housing. The severity of assailants' prior violence predicted a reoccurrence of violence within the first six months post-intervention, and the best predictors of violence occurring after that time point were the number of prior separations women had from their assailants and the length of their last shelter stay.

Figure 5

Estimated probability of reabuse over 24 month followup by pre-intervention intention to

continue or end relationship: Random effects logistic regression

The <u>best</u> predictors of continued victimization over time were intention to remain in the relationship (positive), and receipt of advocacy services (negative). While the group least likely to experience revictimization over time were the women intending to leave the relationship who also were in the experimental condition, working with advocates reduced the risk of reabuse after the 6-month followup time point even for women remaining in relationships with their abusers. The intervention, then, appears to be useful to women regardless of whether they intended to remain in or leave their relationships with the men abusing them.

One counter-intuitive finding was that alcohol and drug use by batterers was not related to risk of further violence. This finding supports the contention that, although batterers may abuse alcohol and other drugs, their drug use does not cause their violent behavior (Limandri & Sheridan, 1995; Miller & Wellford, 1998). On the other hand, other research has found at least a correlational relationship between assailant substance use and domestic violence (Saunders, 1992; Tolman & Bennett, 1990). The current study only asked if the batterers had an alcohol and/or drug problem, and did not ask about frequency of use or whether batterers were using substances during assaults. Seventy three percent of the men in this sample were described at the first interview as having an active substance abuse problem, so the sample lacks optimal variability to adequately address this question.

There are no simple or straightforward explanations for why some men stop their abuse while others continue over time. Like all research studies, this study provides only partial answers to this question. The findings refute the contention by some psychologists that women's depression levels and/or impaired self esteem prevent them from acting to end the violence they are experiencing. No psychological factors within survivors contributed to

further increased or decreased risk of abuse. Rather, risk factors were found to be related to the assailant and his behavior, as well as to contextual variables such as remaining in the relationship and lack of housing. As neither depression nor self esteem related to women's decisions to remain in or leave the relationship, this decision was likely attributed to whether women deliberately determined they (and their children, where applicable) would be better off with or without the assailant in their lives.

A great deal more research is needed to understand the complex trajectory of intimate male partner violence over time. Multiple, interrelated answers to this phenomenon will be found, at multiple levels of analysis. This study represents just a first step in that exploration.

Question #5. What are the antecedents of assault and psychological abuse by an ex-partner?

Melanie Edwards left her abusive husband Carlton in October, taking their two year old daughter and going to a local shelter. She obtained a restraining order against him, and bought a car that her estranged husband would not recognize. Visitation was arranged so that each would drop off and pick up their daughter at a supervised site through a local social service agency. On December 9, Carlton dropped his daughter off after an overnight visit. About half an hour later, Melanie arrived to pick her up. As mother and daughter got in the car to leave, Carlton shot and killed both of them. He killed himself a few days later. As one of Melanie's friends said, reacting to the murder, "She was trying to get out of this, doing all the right things. And then this happened" (Barker, December 23, 1998).

It is commonly assumed that women with abusive partners should end their relationships in order to stay safe; women who do not separate from abusive men are often labeled as helpless or as tolerating violence (Browne, 1993). However, the link between separation and violence is multi-directional and complex. Some women with abusive partners may not end relationships because they have been threatened with increased violence if they leave. Others fear for the safety of their children, family, or friends. Although some women stay in relationships because they believe their partners will change, others stay for fear that the violence will escalate against themselves or their loved ones should they leave.

It should be remembered that many women with abusive partners do end their relationships. For instance, the majority of women who seek separation or divorce include physical violence as one reason for their decision (Kurz, 1996). In some cases, ending the relationship does result in an end to the abuse. For other women, the end of a relationship may be the first time that violence occurs (Kurz, 1996).

In spite of the widespread misconception that "ending the relationship will end the

violence," it is quite common for batterers to continue or even escalate their violence after the relationship ends (American Psychological Association, 1996; Browne & Bassuk, 1997, Mahoney, 1991). Mahoney (1991) defines separation assault as "the attack on the woman's body and volition in which her partner seeks to prevent her from leaving, retaliate for the separation, or force her to return... It is an attempt to gain, retain, or regain power in a relationship, or to punish the woman for ending the relationship" (p. 65-66). Leaving represents a threat to the batterer's control; violence is a way to attempt to regain or maintain that control.

Sev'er (1997) suggests that violence by an ex-partner takes much the same form and has many of the same dynamics as violence by a current partner. Just as batterers use violence to control their current partners, batterers may also use violence after a separation to reassert control over their former partners. The power and control model (Pence & Paymar, 1993) was modified by Sev'er to include the four components most relevant to abuse after a separation: use of economic and legal abuse, use of children and other loved ones, escalated intimidation, and coercion and explosive violence.

Research has shown that separation assault is not uncommon. The majority of domestic assaults reported to law enforcement agencies occurred after the couples had separated (U.S. Department of Justice, 1983). A recent survey found that nearly one in five separated wives were assaulted while they were separated. Of those women who were assaulted, 35% reported that their husbands became more violent after the separation (Johnson & Sacco, 1995).

The most extreme case of separation assault is separation homicide. A study of homicides in three locations (Chicago, Canada, and New South Wales, Australia) demonstrated that estranged wives were more likely to be killed by their husbands than were still-married women (Wilson & Daly, 1993). Research supports the idea that re-establishing control is often the motive behind these crimes. In one study of intimate partner homicide in Philadelphia and Chicago, the woman's leaving the relationship was the motive in more than

1 in 4 cases in which a woman was killed by a male ex-partner. Similarly, Campbell (1992) found that attempts to re-assert control over the ex-partner were the underlying cause of murders of women by estranged partners. In the majority of these killings, there was a documented history of abuse. It is not uncommon for women to report their batterers telling them, "If I can't have you, nobody can." Homicide, then, becomes the ultimate final control.

Although we are beginning to understand more about the prevalence of homicide against female ex-partners, less is known about women's experiences of non-lethal abuse after they end abusive relationships. This is in spite of the fact that homicide is rare relative to ex-partner sublethal assaults. Research has begun to explore certain predictive factors that may be associated with intimate partner homicide. Documenting factors associated with sublethal ex-partner assaults is also needed to protect women from abusive ex-partners.

The Danger Assessment instrument (Campbell, 1995) is one list of factors found to be related to intimate partner homicide. These factors include the frequency and severity of previous abuse, threats, violent jealousy, and drug and alcohol use. Research on non-lethal intimate partner violence also suggests that drug and alcohol use by batterers tends to co-occur with violent behavior (e.g., Kantor & Straus, 1987). However, although alcohol and other drug use may co-occur with intimate partner violence, it is not necessarily a cause of the violence (Limandri & Sheridan, 1995; Miller & Wellford, 1998). While research has examined factors related to lethal violence and to intimate partner violence in general, research has not examined these factors as they may relate to violence against ex-partners.

The current analyses examined a number of variables related to the likelihood of assaults against an ex-partner, including prior violence and threats, timing of initial abuse within the relationship, batterer's substance abuse, batterer's level of sexual suspicion, whether the survivor was in a new relationship, and the batterer's access to the survivor (geographic proximity). Variables were selected based in part on lethality research (e.g., Campbell, 1986; Cazenave & Zahn, 1992; Wilson & Daly, 1993), and on theories of power

and control (e.g., Sev'er, 1997; Wilson & Daly, 1992). The variables examined formed three blocks: batterer characteristics and behaviors, survivor characteristics and behaviors, and system response.

<u>Statistical Analysis Plan</u>

Initial inspection of the data revealed the complexities of attempting to study women's various experiences across time. Numerous unique patterns of uninvolvement, reinvolvement, and violence emerged. Some women were assaulted by their ex-partners only after multiple breakups; other women were assaulted by their ex-partners after the first breakup. Still other women were only assaulted while they were involved with their batterers. To facilitate a more straightforward description of factors related to violence by ex-partners across time, a subsample of women was selected. The analyses reported here were conducted using the group of women who were involved with their batterers when they came to the shelter, but who were no longer involved with them ten weeks after shelter exit (N = 135). The remaining women were either not involved with their batterers prior to shelter entry (N = 51) or were involved with them ten weeks after shelter exit (N = 92). Limiting the analysis to women who had been involved with their batterers prior to shelter entry held constant the time since the relationship ended, and including only women still separated from their batterers ten weeks after shelter exit ensured that all had some period at risk for abuse by an ex-partner.

Even within this sample, numerous patterns of uninvolvement, reinvolvement, and violence across the five time periods were evident. To cope with the complexities in the data, the decision was made to examine only the time to either (1) the first incident of violence by an ex-partner, (2) the first reinvolvement with the batterer, or (3) the end of the study.

Event history analysis was used to examine factors related to women's different experiences of ex-partner violence. Because we did not know exactly when an assault had occurred within each time interval, we used a discrete rather than continuous time model

(Allison, 1984). A logistic regression model was used, with a separate case created for each time a woman was known to be at risk of violence by her ex-partner. Cases were then censored at the time of violence by the ex-partner, at the time of reinvolvement, or at the end of the study period. For example, if a woman was not reinvolved with her ex-partner at the six month interview and reported an assault by the ex-partner at the twelve month interview, she would be represented by three cases: ten weeks after shelter exit, six months, and one year. If a woman reported being reinvolved with her assailant at the six month interview, then she would have two cases: ten weeks and six months. Factors about the batterers, about the women, and about the system were then entered into the logistic regression model, and their association with abuse by the ex-partner was examined.
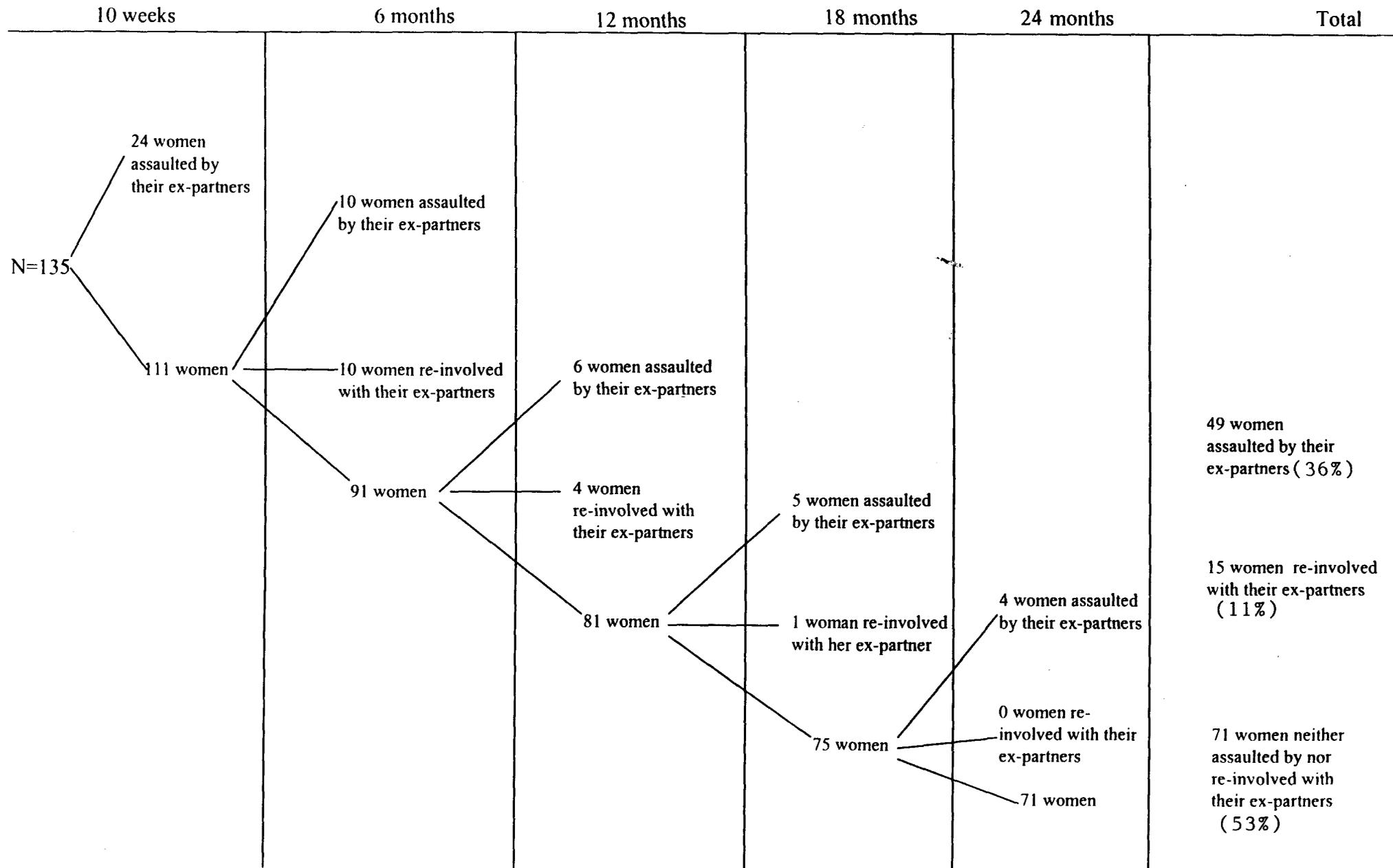
Results

Experience of Violence by an Ex-Partner Over Time

The time period of the first event (an assault by an ex-partner, reinvolvement with the ex-partner, or the end of the study) was examined for each participant. One in three women (36%) were assaulted by an ex-partner at least once prior to either reuniting or the end of the study. The majority of the initial assaults by an ex-partner took place soon after the end of the relationship; 51% took place within ten weeks of shelter exit. While the risk of a first assault by an ex-partner decreased over time, it did not go away; 8% of first assaults by an ex-partner occurred between 18 months and two years after the relationship ended. For 11% of the women, reinvolvement with their batterers was the first event prior to the end of the study. The majority of participants (53%) were not assaulted by their ex-partners and did not become reinvolved with them. The number of women who were assaulted by an ex-partner and the number who were reinvolved with their batterer at each time period are shown in Figure 6.

Many of the incidents of violence by ex-partners were severe in nature. Nearly three quarters of the 49 women assaulted by their ex-partners (72%) were the victims of at least one form of severe or potentially lethal violence (see Straus, 1979), such as being kicked,

Figure 6 Women's experiences of ex-partner violence and reinvolvement over time

| 10 weeks | 6 months | 12 months | 18 months | 24 months | Total |

24 women assaulted by their ex-partners

N=135

111 women

10 women assaulted by their ex-partners

10 women re-involved with their ex-partners

91 women

6 women assaulted by their ex-partners

4 women re-involved with their ex-partners

81 women

5 women assaulted by their ex-partners

1 woman re-involved with her ex-partner

75 women

4 women assaulted by their ex-partners

0 women re-involved with their ex-partners

71 women

49 women assaulted by their ex-partners (36%)

15 women re-involved with their ex-partners (11%)

71 women neither assaulted by nor re-involved with their ex-partners (53%)

raped, choked, stabbed or shot (see Table 11). Violence by an ex-partner was not an isolated attack; one in four survivors experienced at least one form of severe or potentially lethal violence more than once a month.

Almost half of the women assaulted by ex-partners (45%) experienced some sort of injury. One third experienced cuts or bruises, one in five experienced sprains or strains, and 8% had broken bones. One in five women sought medical treatment for the injuries they experienced (21%). Of those who did seek medical treatment, the majority (70%) sought it more than once. Table 11 presents the level of violence and injuries experienced by women during initial reassaults by ex-partners.

Women who were assaulted by their ex-partners sought help from both informal and formal help sources. Nearly three quarters (71%) told someone about the violence by their ex-partners. More than half (55%) told at least one informal source of help, such as friends or family members, about the violence. About half of the women (49%) assaulted by their ex-partners told at least one formal source of help, such as shelter personnel, medical personnel, or the police.

Half of the women who were assaulted by their ex-partners called the police at least once, and of the 25 women who contacted the police, frequency of contact ranged from once to 30 times (M = 2.86, SD = 5.98). Overall, women who called the police at least once were "neither satisfied nor dissatisfied" with the general police response (M = 2.41, SD = 1.31). If the police were contacted, about two in five of the perpetrators (40%; n = 10) were arrested.

A Model of Ex-Partner Violence Over Time

To explore some of the variables that may be related to violence by an ex-partner, event history analysis was used. A discrete time method was selected, due to the six month time lags between interviews. This method of analysis employs a logistic regression model where a separate case is created for each time that an individual was known to be at risk of

Table 11

Types of Violence and Injuries Perpetrated Against Women by Ex-Partners at Time of First Re-Assault (N = 49)

Violence	% of Women
Grabbed	73%
Pushed or shoved	55%
Object thrown at	35%
Slapped	33%
Tore clothing	33%
Choked	29%
Punched	29%
Threatened with gun or knife	27%
Kicked	27%
Raped	20%
Hit with an object	16%
Shot or stabbed	8%

Injuries	
Soreness without bruising	37%
Cuts or bruises	33%
Sprains or strains	18%
Broken bones	8%
Dislocated joints	8%
Internal injuries	4%
Gun or knife wound	4%

violence by an ex-partner. In this instance, there were 469 "cases" (risk periods) where a survivor was at risk of assault by her ex-partner; in 48 of these cases such an assault occurred. Those cases where survivors became reinvolved with their batterers were censored at that time; this occurred in 15 instances. This method of analysis allowed for the use of predictors that are either constant (i.e., true for each woman at all time points) or varying over time (i.e., taking on different values for the same woman at different time periods; see Allison, 1991). Both types of variables were used in this analysis. Variables constant for each woman across time periods included frequency of violence prior to shelter entry, frequency of threats against her family or friends prior to shelter entry, the length of the relationship prior to the first assault, the batterer's sexual suspicion prior to shelter entry, the number of separations prior to shelter entry, the number of times the police were called prior to shelter entry, and whether the batterer was arrested prior to shelter entry. These constant variables were assessed immediately following shelter exit. Variables that varied over time were the batterer's residence (same city as woman or not), whether the batterer currently had an alcohol and/or drug problem, and whether the woman was currently in another relationship. Prior threats against the woman was a lagged predictor, measured at the interview prior to each risk period (e.g., threats reported at the six month interview was used as a predictor of violence at twelve months). Other time-varying predictors were measured over the same interval as each period of risk (e.g., whether the woman was involved in a new relationship at six months was used as a predictor of ex-partner violence at six months).

A logistic regression model was created in three steps. First, the frequency of partner violence prior to shelter entry was entered. Previous violence did not significantly

improve model fit, but the decision was made to leave this predictor in the model because it was expected that prior violence would be related to subsequent violence, and because the odds ratio was in the predicted direction. Survivors who had been assaulted more frequently prior to shelter entry appeared slightly, but not significantly, more likely to be assaulted by their ex-partner (odds ratio = 1.20).

Six assailant characteristics and behaviors were entered as the second block. These characteristics were threats against the woman, threats against her family or friends prior to shelter entry, the length of the relationship prior to the first assault, the batterer's sexual suspicion prior to shelter entry, whether the batterer currently lived in the same city as the woman, and the batterer's current alcohol and other drug use. As expected, this block of variables about the batterer was significantly related to whether violence occurred after the relationship ended (chi square = 47.4, p < .001). Each of these variables, as well as the wald statistics and odds ratios for each factor in the final model, are listed in Table 12.

Threats by the perpetrator at the previous interview time point were related to the likelihood of assault (odds ratio = 1.40). Women who were threatened more frequently at the previous time period were more likely to be assaulted by their ex-partners. A second measure of threats - how often prior to shelter entry the batterer threatened her friends or family - was not significant (odds ratio = 1.13).

The longer the batterer and the woman had been involved before he first assaulted her, the more likely the batterer was to assault her after the relationship had ended (odds ratio = 1.16). Batterers who were more sexually suspicious were also more likely to assault their ex-partners (odds ratio = 1.65).

If the batterer and the woman no longer lived in the same city, she was less likely to

Table 12 Variables Related to Violence by an Ex-Partner*

	Wald	Significance	Odds Ratio
Frequency of Violence Prior to Shelter Entry	.55	NS	1.19
Batterer Variables			
Threats Against Woman Prior to Assault	10.40	p < .01	1.36
Threats Against her Family/Friends Prior to Shelter Entry	1.12	NS	1.18
Length of Relationship Prior to First Assault	5.52	p < .05	1.15
Batterer's Extreme Sexual Suspicion Prior to Shelter Entry	7.85	p < .05	1.85
Batterer's Residence (Same city or not)	18.20	p < .001	4.64
Batterer Currently Has Alcohol/Drug Problem?	.37	NS	1.28
Survivor Variables			
Number of Separations Prior to Shelter Entry	3.01	NS	1.00
Times Police Called	.52	NS	.98
Is Survivor Currently in Another Relationship?	5.91	p < .02	.42
Criminal Justice System Factor			
Batterer Ever Arrested Prior to Shelter Entry?	1.69	NS	1.66

* Logistic regression model chi-square = 57.32, p < .001

be assaulted by her ex-partner (odds ratio = 4.37). It should be noted that the majority of women stayed in the same city; the difference seems to be whether batterers moved out of the area.

The remaining variable in this block was not a significant predictor of ex-partner violence. Whether the batterer currently had an alcohol and/or drug problem was not related to whether he was assaultive after the relationship ended (odds ratio = 1.02).

The third block of variables entered were at least partially under the control of the woman: the number of separations prior to shelter entry, the number of times the police had been contacted prior to shelter entry, and whether the woman was currently involved in another relationship. This block was also significantly related to violence by an ex-partner (chi square = 8.22, p < .05). The first factor in this block, the number of previous separations from the assailant, was not significant (odds ratio = 1.00). The second factor, the number of times the police had been called prior to shelter entry, was also not significant (odds ratio = .99). The only significant factor in this block was whether the woman was currently involved in a new relationship (odds ratio = .42). Women who were involved in a new relationship were less likely to be assaulted by their ex-partners.

The final block entered consisted of a single variable representing the criminal justice system's response to the batterer. Whether the batterer had been arrested for an assault against her before the woman went to the shelter was not related to violence after the relationship ended (odds ratio = 1.66).

Overall, the full model did significantly improve prediction (chi square = 57.3, p < .001). However, the model only accounted for a small proportion (12%) of the variance (see Menard, 1995).

Discussion

For more than a third of the women in the sample, ending the relationship did not mean an end to the violence against them. Several variables were found to be related to violence by their ex-partners. Not surprisingly, most of the related variables were characteristics or behaviors of the batterers. With one exception, variables related to the survivors' behavior were not related to ex-partner violence against them.

Contrary to expectations, the frequency of violence prior to shelter entry, when a woman was involved with her batterer, was not related to the odds that she would be assaulted by him after the relationship ended. This absence of a relationship may be due to a ceiling effect; the participants had all gone to a shelter for women with abusive partners, and thus all had experienced frequent and severe violence during the relationship. While this predictor was not significant, it was in the expected direction; women who were assaulted more frequently prior to shelter entry were slightly, but not significantly, more likely to be assaulted after the end of the relationship.

Perhaps not surprisingly, the frequency of threats against the survivor during the prior time period was related to an increased risk of violence by the ex-partner during the subsequent time. This finding is consistent with the predominant theory of battering, which is that domestic violence is about the batterer controlling his partner (e.g., Dobash & Dobash, 1998; Pence, 1999; Pence & Paymar, 1993). The batterer uses threats as a way to manipulate or control his partner. When the threats are not enough, the batterer uses violence. In order to keep women safe, criminal justice personnel and other service providers need to be aware of threats against the survivor and to take those threats seriously. On the other hand, the baseline (prior to shelter entry) frequency of threats against women's

family or friends was not related to subsequent violence by ex-partners.

An interesting finding was that those women who had been in a relationship longer before the first incident of violence were more likely to be assaulted after the end of the relationship. If the relationship had lasted longer before the violence started, batterers may have had more invested in maintaining control over their partners. Thus, the violence may have started as a way to continue that control. Once the survivors ended the relationships, these batterers may have continued to use violence in order to re-exert control. In contrast, if the relationship was shorter before the violence started, the batterers may have been more comfortable with the end of that relationship. They may have had less investment in that particular relationship and were thus less invested in maintaining control over that particular woman.

The more often batterers had accused survivors of having or of wanting other sexual relationships before they went to the shelter, the more likely they were to continue to be violent after the end of the relationship. Consistent with prior research (Sev'er, 1997; Wilson & Daly, 1992), this sexual suspicion may be another part of a pattern of control. Service providers and criminal justice system personnel need to also be aware that extreme sexual suspicion is not the same as ordinary jealousy or insecurity. Instead, it may be a warning sign of increased violence. Whether the survivors and the batterers lived in the same area was also related to the likelihood of violence by an ex-partner. Perhaps not surprisingly, if they did live in the same area, batterers were more likely to assault their ex-partners. Interestingly, nearly all of the survivors stayed in the area; the difference appears to be whether the batterers stayed, as well. However, this may well be a spurious relationship: those batterers who for other reasons are more likely to assault their ex-partners

may also be less likely to move away.

Whether a batterer had ever been arrested for an assault against the woman (before she went to the shelter) was not related to whether he assaulted her after the relationship ended. Unfortunately, the current research could not address batterers' entire previous arrest histories for assaults against other partners and/or for other violent crimes. To the extent that some batterers are violent across relationships, only addressing arrests for violence against a current partner may not be enough. Research which used a more inclusive measure of criminal history does suggest that men with prior arrests are more violent toward their partners (Browne, 1988; Campbell, 1995). Moreover, prior research on the police response to woman battering (e.g., Stalans & Finn, 1995, Worden & Pollitz, 1984) suggests that factors besides the violence also affect police officers' decisions to arrest. Future research needs to address whether batterers' history of violence and/or criminal records are related to violence against their ex-partners.

Alcohol and drug use by batterers during the current time period was not related to violence against ex-partners. This finding is consistent with the feminist position that, although batterers may abuse alcohol and other drugs, their drug use does not cause their violent behavior (Limandri & Sheridan, 1995; Miller & Wellford, 1998). However, the current research only asked if the batterers had an alcohol and/or drug problem. Frequency of use and whether batterers were using alcohol or other drugs during assaults was not asked. A more refined measure of alcohol or drug use may have led to different findings.

Three variables that were at least partially under the control of survivors were also examined as possible correlates of ex-partner violence. Two of these variables - the number of previous separations and the number of times the police had been called prior to shelter

entry - were not related to violence by ex-partners. The number of separations prior to shelter entry is an interesting variable. Women who feared retaliation for separating may have had fewer separations prior to going to the shelter. In contrast, those women who experienced more frequent and/or more severe violence may have had more separations. Other issues, such as economic dependence, may well affect the number and length of separations from violent partners. Unfortunately, the current research did not examine why these separations occurred.

The number of times the police had been contacted before women went to the shelter also was not related to violence by their ex-partners. Common sense might argue that the more frequent or severe the violence, the more likely the police would be contacted. This frequent and/or severe violence, however, might also prevent women from getting to a phone. Women may also be threatened with increased violence should they contact police. Given the number of other reasons that affect women's decisions to call the police (see, for example, Fleury, Sullivan, Bybee, & Davidson, 1998), it is not surprising that calls to the police were not related to violence by an ex-partner. In contrast, if survivors actually were involved in another intimate relationship at a given risk period, their ex-partner was less likely to assault them. These new relationships may be acting as a protective factor. It may be harder for batterers to find survivors alone, or they may be avoiding a confrontation with new partners. Even this variable, which is under partial control of the survivor, is likely protective because of the way it affects batterers' decisions and behavior. Clearly, it is the batterers' behaviors - not the womens' - which need to be addressed if we are to end intimate partner violence.

Overall, of the subsample of survivors who ended the relationship after leaving the

shelter, more than half were not later assaulted. For some women, then, ending the relationship did lead to increased safety. Also, some of those women who were assaulted by an ex-partner may still have been safer than they were while in the relationship, even though the violence continued. Some of the women who were not assaulted by their ex-partners may have experienced greater fear of them, because they knew their leaving could trigger more severe violence. Additional research needs to explore these complex and difficult issues.

Ultimately, the survivors themselves are in the best position to determine whether staying or ending the relationship is the best decision for their lives. We as a community need to ensure that women have the resources and support they need in order to make that decision. Ultimately, survivors of intimate partner violence are not in control of whether they are assaulted again. They will only be safe when we as a community hold batterers accountable for their behavior.

Overall Conclusions

There are a number of conclusions one can draw from the secondary analyses of this data set. Overall, analyses supported the contention that a short-term, strengths-based, client-driven community advocacy project can set into motion a trajectory of positive change in the lives of women with abusive partners. As hypothesized, the advocacy intervention resulted in immediate positive change occurring in women's lives, as they successfully obtained resources they needed from their communities. Increased access to resources, coupled with increased social support, resulted in women reporting higher "quality of life," operationalized as including self-determination, psychological wellbeing, life satisfaction, physical and material wellbeing, and personal fulfillment (Hughes et al., 1995; Powell et al., 1997). Over time, women reporting having more control over and satisfaction with their lives also reported a decrease in violence. Structural equation modeling determined that it was quality of life predicting risk of reabuse, as opposed to risk of reabuse predicting quality of life. This finding speaks to the importance of viewing intimate male violence against women as a societal problem, and for increasing women's opportunities for self-determination and autonomy in order to decrease their risk for intimate partner violence. Analyses examining women's risk of abuse across three years also supported the contention that society's treatment of women impacts their risk of intimate partner violence. Women lacking financial resources and social support were at greater risk of being abused between two and three years post-intervention compared to women who were economically better off and who had stronger support systems.

In examining which antecedents accounted for differences in revictimization over time, it became clear that women who received the intervention and/or who intended to

leave the relationship were at decreased risk of further abuse.   The group of women most likely to experience abuse across any time point were the women who intended to stay in the relationship and who did not work with advocates. While the group least likely to experience abuse were the women intending to leave the relationship who also were in the experimental condition, working with advocates reduced the risk of reabuse after the 6-month followup time point even for women remaining in relationships with their abusers.

While remaining in the relationship increased women's risk of being reabused over time, leaving the relationship did not guarantee safety from violence. Over a third of the women who *ended* their relationships also experienced abuse over time. Predictors of abuse by an ex-partner included (1) length of their relationship before breakup, (2) his prior threats, (3) his sexual jealousy, (4) his geographical proximity to the woman, and (5) whether she was involved in a new relationship. These findings lend support to the argument that domestic abuse is a means of gaining power and control over one's partner. The men who expressed greater threats and sexual jealousy, and who remained in the same area as the woman after their breakup, were more likely to continue harassing, threatening, and abusing their ex-partners over time. When women started new relationships their risk of violence decreased. Many assailants likely viewed the new partners as protectors of the women, making it more difficult to continue abusing them.

A limitation of this data set was that all participants had once been residents of a shelter program for women with abusive partners. Most had low incomes, and all had sought help from their community to deal with the abuse they were experiencing. The majority of participants were African-American or non-Hispanic white, and none of the women were residing in a rural community. The extent to which these findings can be

generalized to women experiencing abuse in other communities is unknown. It is also critical to remember that, although the provision of advocates *reduced* the risk of further violence by a partner or ex-partner, many women (76% in the experimental group; 89% in the control group) were abused at least once over the two year time span. No one intervention will be a panacea for this immense and complex social problem. Advocacy should be viewed as one important component of an overall comprehensive community approach to ending violence against women. Future efforts are needed to build upon the successes of this program, to examine its effectiveness with a more diverse population of survivors, and to develop additional innovative programs designed to end intimate male violence against women.

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