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Secondary Data Analysis on the Etiology, Course and Consequences of Intimate Partner Violence against Extremely Poor Women

Final Report
Prepared for:
The National Institute Of Justice

Prepared By:
The Better Homes Fund
Grant Number: 98-WT-VX-0012

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Executive Summary

The Better Homes Fund and BOTEC Analysis Corporation have undertaken a secondary data analysis project to increase understanding of childhood antecedents to adult partner violence, and the impact of partner violence on the use of addictive substances and the capacity to maintain work among impoverished single mothers. Analyses were conducted utilizing a comprehensive, longitudinal data set that includes in-depth information on homeless and poor housed single female parents, most on public welfare. Researchers completed three papers addressing each of the three project aims: 1) to describe patterns of partner violence in the lives of poor single mothers and to delineate childhood and adult risk markers for partner violence; 2) to evaluate the relationship between partner violence and substance abuse among poor mothers, exploring the joint and independent contribution of childhood physical and sexual abuse, Post Traumatic Stress Disorder (PTSD), and partners' use of substance; and 3) to evaluate the relationship between partner violence and women's capacity to maintain work over time. In addition, major study findings were synthesized and packaged for use by the Boston Police Department.

Despite the proliferation of research on violence by intimates over the last twenty years, limited research has focused on the impact of partner violence on poor women's lives (see Browne & SS Bassuk, 1997, for review). Most recently, and largely in response to federal welfare policy, a growing body of literature has documented high rates of intimate partner violence among welfare recipients (Browne, Salomon & SS Bassuk, 1999). Supporting this research, our study found that nearly two-thirds of poor women reported lifetime rates of adult partner violence. Rates of childhood physical abuse and sexual molestation were also startlingly high, at 63% and 42% respectively. When we combined all

family/intimate violence across the lifespan, more than 8 out of 10 low-income single mothers in our study had experienced some form of severe violence.

With prevalence rates at this magnitude, it is critical to better understand risk markers for partner violence, its course over time, and its impact on poor women's lives, especially their use of substances and ability to maintain work. Study findings provide important insight for policy makers and practitioners in designing strategies for protecting women and children at greatest risk of partner abuse and creating preventive and responsive interventions to help them escape poverty.

Study Findings

Despite the high prevalence rates of intimate partner violence among impoverished women, few studies have examined risk factors for experiencing partner violence in this population. The first paper describes patterns of partner violence longitudinally and uses multivariate analyses to delineate *childhood and adult risk markers for partner violence among poor and homeless women.* Findings include the following:

- Poor women who experienced childhood sexual abuse were significantly more likely to experience intimate partner violence as adults. Child sexual abuse remained the only significant childhood risk marker in multivariate modeling.
- Other childhood factors associated with increased risk of adult partner violence in univariate analyses included: parental fighting, having a mother who was a victim of abuse/battering, being placed in foster care, having a primary male caretaker with substance abuse problems, and a primary female caretaker with mental health problems.
- Having a partner with a poor work history or a substance abuse problem put women at higher risk for partner violence.
- Women with lower self-esteem were more likely to be victimized by abusive partners.

- Negative or conflicted social support during adulthood was a significant correlate of adult partner violence. Conversely, women with the greatest non-professional emotional support in their relationships were significantly less likely to be in abusive relationships.

Study findings also indicate that while lifetime prevalence of intimate partner violence is high among poor women, most experiences are episodic and limited over time. Following women over four time frames (i.e., age 17 until one year prior to the baseline interview; the year prior to the baseline interview; the year prior to the second interview; and the year prior to the third interview), the study found *patterns of intimate partner violence* that indicated:

- Among women with complete longitudinal data (N=280), almost two-thirds experienced intimate partner violence at some point in their adult life by the end of study follow-up.
- Less than 2% of women reported intimate partner violence across all four time frames.
- Among the large group of women whose violence had stopped at some time prior to the last time frame, about 28% returned to violent relationships.

The second set of analyses focused on the *relationship between intimate partner violence and the subsequent use of addictive substances* in poor and homeless single mothers. It builds on a literature that has documented strong associations between interpersonal violence and substance abuse, while neither fully clarifying causal relationships nor testing more nuanced explanatory theories. The study addressed two major questions: 1) Do poor women who experience intimate partner violence have increased odds of *subsequently* abusing alcohol or illicit drugs? And 2) What role, if any, do childhood victimization, adult PTSD, and partners' use of substances have in the relationship between adult partner violence and subsequent substance use in poor women? The study found:

- Intimate partner violence is predictive of subsequent drug, but not alcohol, use in poor women. Controlling for all factors of interest, women with a history of adult partner violence had nearly

three times the odds of using illegal drugs during the subsequent study years than women who had not experience partner violence as adults.

- Reverse causation (i.e., that women's substance use increases the likelihood that they will become involved in physically violent relationship), did not account for the strong association. Adjusting for past drug use did not eliminate the observed association and it was much stronger among women with no history of drug use at baseline.
- While we found a striking interaction between childhood sexual molestation and PTSD (i.e., the effect of each factor on subsequent drug use depended strongly on the presence of the other factor), this finding should be replicated in a larger sample before concluding that the interactive effect is stronger than the main effect of each on later drug use.
- Women whose partners abused substances were twice as likely to subsequently use illicit drugs. In multivariate modeling, partners' substance use remained independently predictive of women's later drug use.

The third paper explored the *impact of recent partner violence on poor women's capacity to maintain work* over time. Prior empirical studies focused either on poor women's desire to work or on employment history. Most found that women victims of partner violence were no less likely to have worked or to express a desire to work (Brooks & Buckner, 1996; Lloyd & Taluc, 1997). However, past research did not define work in terms of duration of work experience or hours of work per week. The prominent question for these analyses was whether extremely poor women at recent risk of partner violence are less likely to maintain work over time than extremely poor women without such experiences. The study found:

- Women who had experienced recent intimate partner violence had less than one-third the odds of maintaining work over time (i.e., for at least thirty hours per week for six months or more).

- Recent experiences with partner violence (in the past 12 months) rather than partner violence prior to baseline, predicted reduced capacity to maintain work during the subsequent year.
- While alcohol/drug problems were not independently predictive of limited capacity to maintain work, mental health variables remained negatively associated with the capacity to maintain work.
- Job training, job placement services and past employment experience were highly predictive of enhanced ability to maintain work over time.
- Histories of childhood physical and sexual abuse were significantly associated with partner violence, but did not differentiate women who held jobs over time from those who did not, nor were they independently predictive of limited capacity to work in the final modeling.

Research Design and Methods

Description of the Data Set. Data for these analyses are drawn from the Worcester Family Research Project (WFRP), a comprehensive inquiry into the lives of 220 homeless and 216 low-income housed (never homeless) single mothers living in Worcester, Massachusetts (E. Bassuk et al., 1996). With a population of 169,000, Worcester is the state's second largest city; fifteen percent of its residents live below the federal poverty level.

The WFRP received funding from the National Institute of Mental Health and the Maternal and Child Health Bureau of Health and Human Services. Longitudinal in design, the study interviewed women at three points in time—at baseline and then at two follow-up interviews approximately 12 and 24 months after baseline. Baseline interviews covered a broad range of domains and lasted from 10-12 hours over multiple sittings. Detailed information was available on interpersonal violence in the lives of extremely poor women across their life span. Follow-up interviews each took about two hours to complete.

Respondents. Utilizing a case-control design, homeless mothers were randomly enrolled from all nine of Worcester's emergency and transitional shelter and its two welfare motels (3.2% of the sample) between August 1992 and July 1995. All homeless women who had been in shelter for at least 7 days and were pregnant or had custody of at least one dependent child younger than age 17 were asked to participate in the study. Of the homeless mothers approached, 72% agreed to be interviewed. The comparison group of low-income housed mothers was randomly selected from women who visited Worcester's Department of Public Welfare. To be eligible, comparison mothers had to have no history of homelessness (defined as having spent more than 7 consecutive nights in a shelter, car, public park, abandoned or nonresidential building, or other nondwelling; McKinney Homeless Assistance Act, 1987); be pregnant or have custody of at least one dependent child younger than 17; and be currently receiving public assistance. Of the 436 women in the baseline study, 356 were re-interviewed between May 1994 and November 1996 (follow-up 1), and 327 were again re-interviewed between September 1995 and August 1997 (follow-up 2). Data were collected on the 141 homeless and 178 housed mothers who refused to participate or who did not complete the multiple interviews. No significant differences were found between those women and the final sample with respect to age, marital status, education, number of children, or welfare use. Puerto Ricans, however, were somewhat more likely to refuse or drop out than members of other ethnic groups were.

At baseline, mothers were on average 27 years old; 37% were Hispanic (primarily Puerto Rican), 39% were non-Hispanic white, and 17% were African American. Respondents had a mean number of 2.2 children; two-thirds had never been married. The mean annual income of the homeless mothers was $7,910; housed mothers had a total annual income of $9,988. Most were receiving public assistance at the time of enrollment.

Analysis. For the purposes of the secondary data analysis project described here, each of the three reports focused on a slightly different subset of women and utilized various data analytic methods relevant to the questions at hand. In general, researchers explored bivariate relationships first to identify crude associations between variables and then utilized logistic regression modeling techniques to elucidate the multivariate relationship between major predictors and outcomes. Researchers also took advantage of the longitudinal design to establish temporal ordering and ensure that predictive variables preceded outcomes of interest. Covariates for housing status at baseline and ethnicity were included in all models to control for important design and background factors.

Discussion

The data set compiled through the WFRP provides a unique opportunity to explore the research aims outlined above. As results indicate, women and children who live in poverty are at extremely high risk of physical and sexual victimization by intimates. For thousands of women, a lack of economic resources is devastating to their ability to alter their environments or to live in safety, particularly if they have children in their care. For the subset of women addressed in these reports, issues related to partner violence may make it especially difficult to escape poverty or make the transition to independent employment as mandated by the current welfare reform law.

As these reports demonstrate, women involved with abusive partners are at significantly increased risk for subsequent illicit drug use and limited capacity to maintain work over time. Both these factors have profound impact on women's ability to be financially self-sufficient, escape violence and live in safety. While we did not find that substance abuse independently predicted incapacity to maintain work, we did find that when controlling for potentially confounding variables women experiencing recent partner violence were far less likely to hold jobs over time. The significant effects of partner violence on work emerged only when the level and duration of work was defined more

specifically. For women unable to hold jobs over time, the potential for escaping poverty through work becomes even more challenging. Low-wage entry-level work can be transformed into work that produces true economic independence only when workers are able to invest enough time in the workplace to secure promotions or to move progressively to new and higher paying jobs.

In addition to partner violence, our report indicates that substance use of partners independently contributes to women's later drug and alcohol abuse. Furthermore, women with histories of childhood sexual molestation and diagnoses of PTSD are five times more likely to abuse drugs. Understanding these joint and independent contributions to women's substance abuse is an important step in structuring treatment and policies that are meaningful and responsive to women's real needs. Drug involvement for young women is a major contributor to their increased incarceration over the past 15 years and has other devastating consequences for families and society. Health and mental health risks, economic deprivation, loss of child custody, mounting stigma—all have been identified as long and short term consequences of drug use for women (Maher, 1992, Brown et al., 1994; Packard, 1999; Blume, 1992; Finkelstein, 1998). Practitioners report that use of drugs can negatively impact women's sense of self and their ability to take charge of their lives. Drug involvement may thus make it more difficult for women to leave abusive partners due to financial dependence, and to protect the children in their care (Finkelstein, 1994, 1998).

As we also know from these reports, children who grow up in abusive, threatening and unpredictable environments have increased vulnerability to being unable to protect themselves in adulthood from abusive men. Specifically, sexual molestation during childhood was most highly associated with the likelihood of adult intimate partner violence. This report's finding on the vulnerability among survivors of child sexual molestation to involvement with abusive partners and, together with PTSD, to subsequent drug abuse suggests important direction for programs and policies.

Programs serving drug-abusing women need to better understand the impact of trauma across the life span on health and mental health. Relapse and treatment may be compromised if issues related to childhood sexual molestation, its interaction with PTSD, and adult partner violence are not identified. Targeted treatment and prevention strategies that start in early childhood, including parenting programs designed for survivors, are critical. Understanding the impact of partner substance use on a woman's use of substances and on her staying in abusive relationships is also important in designing appropriate programs. When the offending partner remains involved with the family, working with him may also be appropriate.

These reports suggest the importance of non-professional supports, such as family, friends and neighbors, in protecting women from involvement with abusive partners. Enabling women to sustain work over time may provide an opportunity to develop more robust and protective support systems in the workplace as well as to escape poverty. Our findings demonstrate the positive impact of job training and placement services on women's capacity to maintain work over time. They also point to the importance of developing job-related supports for welfare-to-work efforts that are sensitive to women's psychosocial needs, especially as they relate to mental health and violence.

Responding to the complex relationship among childhood sexual molestation, partner violence, substance use and work is especially critical today as thousands of families leave the welfare rolls due to time limits for public assistance. A subset of families may fall into extreme poverty as a result of the relationships outlined here, contributing to an increasing population of women and children at risk for further violence and its after effects. The complex relationships outlined here call for cross system solutions that include health, mental health, substance abuse, battered women's services, criminal justice and child welfare systems. At risk is increasing the demands on an already overburdened criminal justice system as well as jeopardizing the well being of our nation's most vulnerable families.

Synthesizing Results for the Boston Police Department

To disseminate the results of the three papers, BOTEC Analysis Corporation worked with The Better Homes Fund and representatives from the Boston Police Department to determine how these results could be useful to them, and what form this communication should take. A focus group, attended by 11 individuals representing the police, advocacy, research, domestic violence, and training for the Boston Police Department responded to study findings and helped to identify possible deliverables. Focus group participants were particularly interested in the child related study findings and the impact of partner violence on women's work. Additional communications with the Director of Strategic Management and Development for the Boston Police Department and the Commander in charge of the Domestic Violence Unit helped to better understand the current level of information that is being passed along to officers in training.

Identified Deliverables A number of deliverables were discussed as being useful for the Boston Police Department. Agreement was reached on the idea of producing a group of small posters, each disseminating a "factoid" derived from the results of the study, as a quick and easy way for officers and others to learn more about interpersonal violence across the lifespan and its impact on poor and homeless women. The posters would provide interpretive findings together with study data. They would be sent to the Strategic Management and Development Director, the Domestic Violence Unit Commander, and the Sgt. Detective in charge of domestic violence training at the Boston Police Academy. Posters will be displayed in strategic areas so that they are accessible to various criminal justice practitioners. A cover fact sheet will provide background on the project and study findings. The focus group itself was considered a valuable communication tool. It was recommended for future funding that more of these groups be held throughout the Boston criminal justice system.

Chapter One

Intimate Partner Violence in Extremely Poor Women: Temporal Patterns and Risk Factors

Intimate Partner Violence in Extremely Poor Women: Longitudinal Patterns and Risk Markers

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Abstract

Despite high prevalence rates of intimate partner violence in extremely poor women with dependent children, few studies have investigated the patterns of violence that occur over time in these women's lives, and the characteristics of women that serve as risk markers for partner violence. This paper describes patterns of domestic violence longitudinally and uses multivariate analyses to delineate childhood and adult risk markers for recent intimate partner violence in this population of women. These analyses draw upon a sample of 436 homeless and extremely poor housed mothers receiving welfare, in a mid-sized city in Massachusetts with a large Hispanic population of Puerto Rican descent and relatively fewer Blacks. We found that among women with complete longitudinal data (N = 280), almost two-thirds experienced intimate partner violence at some point during their adult life by end of study follow-up, and that the abuse before and after the baseline interview was episodic and limited over time. To examine the role of individual women's factors, while controlling for partner characteristics, we used baseline data on women who had been partnered during the past year (N = 336). Supporting the notion of intergenerational violence, among childhood predictors, we found that sexual abuse contributed most significantly to adult intimate partner violence that occurred during the past year prior to the baseline interview. Adult risk markers included inadequate emotional support from non-professionals, poor self-esteem, and a partner with substance abuse problems. Having a partner with poor work history was another independent predictor of recent abuse. Ethnicity did not significantly predict whether women were abused or not during the past year, contrary to other findings reported in the literature.

I. Introduction

Domestic violence is widespread in American society. The National Violence Against Women Survey, a recent nationally representative study of 16,000 men and women, found that 25% of women reported experiencing sexual or physical violence at the hands of an intimate partner in their lifetime (Tjaden & Thoennes, 2000). These rates are even higher among extremely poor and homeless women with studies documenting that almost two-thirds have been victims of domestic violence (North, Thompson, Smith & Kyburz, 1996; Bassuk et. al., 1996; Allard, Albelda, Colten & Cosenza, 1997). The immediate and long-term effects of partner violence on all family members are devastating, and indicate a vital need for developing effective prevention and intervention strategies for those at greatest risk of being victimized (Campbell & Soeken, 1999; Kenny & Brown, 1996; McCauley et. al.,1995).

Despite a large literature on why men act violently towards women (see Feldman & Ridley, 1995 for a review), reports on female victims of partner abuse have largely been descriptive, and the empirical evidence for consistent individual-level risk factors for female victims has been weaker than the evidence for male perpetrators (Kaufman Kantor & Jasinski, 1998; Fagan & Browne, 1994; Hotaling & Sugarman, 1986). Furthermore, those studies focusing on low-income women have generally only focused on the impact of poverty (see below). Given the extremely high rates of partner violence in the households of low-income women, and our limited understanding of domestic violence, it is important to identify factors over a woman's lifespan that increase individual vulnerability. Hotaling and Sugarman (1990) emphasized that these factors "are not necessarily causal ...but they can be associated with violence against women in close relationships" (p.1). Referred to in the literature as "risk markers", they indicate that various "...characteristics (are) associated with an increased likelihood that a problem behavior will occur.... The odds of an associated event are greater when one or more risk markers are present" (Kaufman Kantor & Jasinski, 1998, p. 14).

Poverty and Intimate Partner Violence

Although family and intimate partner violence occur across all socioeconomic groups, poverty is highly predictive of male partner violence against women (Kaufman Kantor & Jasinski, 1998; Feldman & Ridley, 1995; Fagan & Browne, 1994). Several national surveys demonstrate that severe violence against both women and children is greatest among families with low incomes or

with male partners who are unemployed or have lower occupational status (Benson et. al. 2000, Greenfield et. al. 1998; Hotaling & Sugarman, 1990; Straus, Gelles, & Steinmetz, 1980). In addition to low-income status and husband's unemployment, Lenton (1995) identified as a risk marker the husband's patriarchal values, which are closely associated with the male partner's economic circumstances. Findings from the National Family Violence Survey further confirm that low-income status is embedded in a social context that includes beliefs about the legitimacy of violence and inadequate social supports; these factors may be equally if not more predictive of wife abuse than income markers (Cazenave & Straus, 1990; Dibble & Straus, 1990).

Although researchers have documented high rates of all types of interpersonal violence among poor women, few have examined the risk markers for adult partner violence specifically among samples of low-income and homeless mothers (see Browne & Bassuk, 1997 for a review). Given the elevated rates and damaging effects of intimate partner violence, it is important to define risk markers associated with poverty that increase poor women's vulnerability to partner violence. These women face a constellation of stressful life events, oppressive conditions (such as residential instability and homelessness), and lack of support that may be uniquely or jointly associated with their high risk for victimization. Although this article focuses on low-income women, we review research across all socioeconomic groups in the following sections.

Childhood and Adult Risk markers For Intimate Partner Violence

Among childhood risk markers, experiencing or witnessing sexual or physical violence has been consistently supported as an important predictor of women's victimization by intimates as an adult (Feldman, 1997; Messman & Long, 1996; Widom, 2000, 1989). Cappell and Heiner (1990) concluded "women may learn the victim role when they watch parents engaging in physical fighting" (p.163). Many studies have also documented a high prevalence (e.g., 48%) of child sexual abuse among battered women (e.g., Walker, 1984). Others have found high rates of physical and sexual re-victimization when child sexual abuse survivors are followed into adulthood (e.g., Wyatt, Guthrie & Notgrass, 1992; Urquiza & Goodlin-Jones, 1994). Using nationally representative data, Tjaden and Thoennes (2000) reported increased risk of partner violence for women who had been abused as children. A study of very poor women found that a childhood history of physical or sexual abuse was associated with four times greater risk of victimization by a partner in adulthood (Browne and Bassuk, 1997).

However, some studies have not found evidence for a "cycle of violence". In one of the few multivariate studies that directly examines risk markers for wife abuse, Hotaling and Sugarman (1990) found that neither witnessing parental violence nor being physically abused predicted wife abuse when stronger predictors were controlled. Instead, they found that the degree of conflict in relationship differentiated violent and non-violent relationships among female victims.

In adulthood, the risk marker for domestic violence that has been most researched is substance use. Positive associations between women's substance use and being battered have been documented in clinical samples (e.g. Miler, Downs, & Gondoli, 1989) as well as community samples (e.g. Breslau et. al., 1991), though the research is divided and some authors (e.g. Kaufman Kantor & Asidigian, 1996) de-emphasize substance use as a risk marker for women's victimization by a partner.

The literature on the relationship between partner violence and ethnic background is also divided. Most researchers have focused on Hispanic families because of a presumed higher level of male dominance in those families, a stereotype that a number of empirical studies have disproved (see Straus & Smith, 1990). Descriptive findings from national studies have shown Hispanics to have higher domestic violence rates (Tjaden & Thoennes, 2000; Straus and Smith, 1990); researchers who have controlled for socioeconomic factors found that differences between Hispanics and non-Hispanic Whites were no longer statistically significant (Straus and Smith, 1990; Kaufman Kantor, Jasinksi & Aldarondo, 1994). Browne and Bassuk (1997) reported that in a sample of impoverished women, Latinas were at significantly lower risk of severe physical assault by a partner than non-Hispanic whites. At least one study found that among shelter residents, Hispanic women had different characteristics (e.g., lower income, education, employment and larger families) than White or Black women, all factors that are likely to affect women's vulnerability to and experience of domestic violence (Gondolf, Fisher, & McFerron, 1988). These researchers reported that Hispanic women who were "bound by a norm of 'loyal motherhood'" had longer histories of abuse and were hampered by language differences, immigration status, and less social capital. Others have found acculturation to be a risk marker, with U.S. born Mexican Americans and Puerto Ricans having higher partner

violence rates than their foreign-born counterparts (Sorenson & Telles, 1991; Kaufman Kantor et. al., 1994).

The research on ethnic influences on intimate partner violence is difficult to interpret because, as Kaufman Kantor and her colleagues note, many studies have treated Hispanics as a homogenous category. Kaufman Kantor et. al. found considerable variation in marital violence rates, norms towards violence, and other related factors, among Hispanic sub-groups, suggesting that the lack of specificity in defining ethnicity may be a serious shortcoming.

Self esteem and social support resources have also been studied as correlates of women's victimization in intimate relationships, although to a lesser extent. In their review, Hotaling and Sugarman (1986) found mixed evidence (three studies out of five found significant findings) for low self-esteem as a risk marker of partner violence. Feldman and Ridley (1995) concluded that the evidence for self-esteem as a risk marker in women is weak. Other authors suggest that women who are physically or sexually victimized as children may suffer from low self esteem as adults, which may in turn be associated with victimization by partners (Fleming et. al., 1999; Fagan & Browne, 1994). A number of authors have noted the connection between social support and partner violence. Cazenave & Straus (1990) found "family, kin, and neighborhood networks ... may serve as social support systems and family violence control mechanisms" (p.337). Straus (1990b) additionally concluded that among highly stressed men, those with stronger supports were less likely to engage in violent assaults against their spouses. Barnett, Martinez and Keyson (1996) found battered women to have lower levels of social support, and an inverse relationship between battered women's support and their likelihood of responding violently to abusing partners.

Finally, research has shown that women are put at substantially greater risk of domestic violence by the characteristics of their partners. Strong relationships have been reported between women's battering and their partners' substance use, (Lipsey, Wilson, Cohen & Derzon, 1997; Kaufman Kantor & Straus, 1990), experiences of violence as a child (Straus, Gelles, & Steinments, 1980; Hotaling & Sugarman, 1986; Feldman, 1997) and socioeconomic variables, such as occupational status and work/unemployment history (Straus, Gelles & Steinmetz, 1980; Kyriacou et. al., 1999).

Longitudinal Studies of Battered Women

While the research discussed above focuses on risk markers for partner violence, a separate but closely related body of research has examined the course of intimate partner violence by tracking violent relationships longitudinally. Contrary to popular stereotypes, researchers have found that domestic violence, particularly in its less severe forms, is quite episodic in nature and that many battered women do in fact escape abusive relationships. In a longitudinal study over 2.5 years, Campbell, et. al. (1994) found that only 25% of women who were battered at the beginning of the interval remained so at the end of the interval. Woffordt, Mihalic and Menard (1994) found that roughly half of the women in their sample who were battered remained so after three years. Looking at perpetrators of violence, Feld and Straus (1990) found high "desistance rates" (43%) among men who had engaged in a severely abusive act in the previous year. None of these studies, however, focused on impoverished women.

Goals of the Present Study

Using data from the Worcester Family Research Project (WFRP), a longitudinal study of 436 homeless and extremely poor housed mothers receiving welfare, this paper extends previous work that focused on socio-demographic factors and childhood violence as predictors of a lifetime occurrence of intimate partner violence (Browne and Bassuk, 1997). We investigate childhood and adult factors that may significantly contribute to recent intimate partner violence (defined as occurring during the year prior to study baseline), and consider childhood violence and life events, parenting as a child, level of income and work, social support resources, woman's self-esteem, previous partner violence, substance abuse problems, partner's problems (substance abuse, poor work history, criminal record) as potential risk and protective factors. We hypothesize that childhood molestation and inadequate non-professional supports will be associated with increased risk of partner violence during the past year. We take advantage of our ethnically diverse sample to further examine whether Puerto Rican women are at increased risk of battering, when controlling for other factors. Using the longitudinal data, we also describe the patterns of intimate partner violence across four timeframes, which span early adulthood (age 17) to study follow-up. This description depicts whether poor women with children tend to be

chronically battered over time, in contrast to more episodic abuse previously reported for community-based samples (Campbell et al., 1994).

II. Methods

Sample and Enrollment Procedures

The Worcester Family Research Project (WFRP) used a case-control design to recruit homeless and housed (never homeless) female heads of households in Worcester, Massachusetts. Worcester is the state's second largest city; 15% of its 169,000 residents live below the poverty level. Unlike most small to mid-sized cities, Worcester has a large Hispanic population of Puerto Rican descent and relatively fewer Blacks. Respondents were given the option of being interviewed in Spanish or in English by bilingual, bicultural interviewers.

A total of 220 homeless mothers with dependent children were recruited from all nine of Worcester's emergency and transitional shelters and its two welfare motels (3.2% of the sample) between August 1992 and July 1995. Study staff asked mothers who had been in a shelter for at least seven days to participate in a multi-session interview. Out of the 361 women approached for enrollment, 102 refused to participate and another 39 did not complete the baseline interviews. The comparison group of housed mothers was randomly selected from women who visited Worcester's Department of Public Welfare Office to re-determine their welfare eligibility or to discuss other issues with caseworkers. Out of 539 women approached, 141 were disqualified for previous homelessness, and an additional 178 refused to participate. No differences in age, marital status, education, number of children, and welfare use were found between the final sample and those who refused to participate or did not complete the baseline interview.

Of the 436 women in the baseline study, 356 were interviewed again between May 1994 and November 1996, and 327 were again interviewed between September 1995 and August 1997. The two follow-up interviews were conducted at approximately 12 and 24 months after baseline. Comparisons were made between women who completed the study and others in the sample. Women who were homeless at baseline, Puerto Ricans, and those with less than 12 years of education were less likely to complete the study than initially housed women, non-Hispanic Whites, and high school graduates, respectively. There were no other differences in terms of the

following baseline variables: age, marital status, yearly income, number of children, lifetime history of partner violence, and having worked during the past 5 years.

Data Collection and Instruments

At baseline, data were collected in 3-4 interviews over approximately 10 hours. As described above, there were two waves of follow-up approximately one year apart. Housed women were interviewed at home or in a community-based project office while homeless women were interviewed at the shelter. Families received vouchers redeemable for food or merchandise at local stores as compensation for their participation.

Using a modified version of the *Personal History Form* (Barrow, Hellman, Lovell, et al, 1985), we obtained demographic information including information about housing, income, jobs, education, life events, and service utilization. This form was developed for use with homeless and low-income persons.

Information about the mother's experiences of physical and sexual victimization across the lifespan was gathered using an adaptation of the *New York Assessment Instrument for Women (NYAIW).* The NYAIW incorporates established measures of intimate violence including the *Conflict Tactics Scale (CTS).* A number of studies have assessed the reliability of the CTS and obtained coefficients ranging from .50 to .96. The instrument has been validated in both clinical populations of batterers and community-based samples (Straus, 1990a).

The physical aggression scale of the CTS (Straus, 1979) was used to obtain data on physically violent acts by childhood caretakers and intimate male partners in adulthood. Physical violence by male partners since age 17 was defined as being kicked, bit, or hit with a fist; hit with an object; beaten; choked; strangled, or smothered; threatened or assaulted with a knife, gun, or automobile; or forced to have sex or perform sexual acts against one's will. At baseline, the CTS data were collected for women's past and current or most recent intimate relationships. During the follow-up interviews, the same CTS data were collected, but the definition of partner was stated more broadly as involvement with men that included "just a couple of dates, not necessarily sexually involved". The broader definition was used so as to not exclude victimizations that occurred in recent relationships. Severe physical violence by child caretakers

was defined as the occurrence of at least one of the following before age 18: being kicked, bit, or hit with a fist; hit with an object; beaten up; burned or scaled; threatened or assaulted with a knife or gun; or having one's life threatened in some other manner. Using the CTS, childhood sexual molestation was defined as the occurrence, before age 19, of "any kind of sexual advance or unwanted sexual experience" by any adult or other individual older than the respondent.

Personal *Assessment of Social Support Resources* (PASS). The PASS (Dunst & Trivette, 1988) was used to assess the size of each woman's social network and resource base at the time of the baseline interview. This instrument was developed and validated on poor families with developmentally at risk preschool children and has adequate psychometric properties.

Rosenberg's Self-Esteem Scale. This scale (Rosenberg, 1965) was used to measure self-esteem at the time of the interview. This 10-item instrument provides a brief, easily administered assessment of self-esteem that has been used extensively, and is considered "the standard against which new measures are evaluated" (Robinson, Shaver & Wrightsman, 1991, p.123). High internal consistency (.77, .88, .92) and test-retest (.85, .82) coefficients have been obtained with the SES; both convergent and discriminant validity have been demonstrated (Robinson, Shave & Wrightsman, 1991; Robinson & Shaver, 1973).

Parental Bonding Instrument (PBI). The PBI (Parker et al., 1979) was used to assess positive parenting and was administered separately for the primary female and male caretakers of the respondent. This instrument contains 25 statements concerning the caretaker's attitudes and behaviors, which the respondent rates for frequency of occurrence. Of the 25 items, 20 are unambiguously positive or negative (e.g. "Seemed to understand what I needed or wanted", "Made me feel I wasn't wanted") and these items were combined into a single positive parenting index for each caretaker (Parker, 1994). Internal consistency for these scales was high, Cronbach's alphas = .90 for both the female and male caretaker scales. The PBI has been validated and used extensively in clinical (primarily depressive disorders) and non-clinical populations (Parker, 1994).

In addition to the above instruments, original questions were included in the baseline interview to obtain additional information on demographics, childhood domains such as out-of-home

placement, life events, and caretakers' substance use/health, and adult domains such as relationship status, family and partner characteristics, help-seeking behaviors, and service use patterns. (See Bassuk, Weinreb, Buckner et. al., 1996 for a full review of instruments used in the WFRP.)

Data Analysis

We conducted two general analyses. First, we used the longitudinal data on women who had completed all three interviews (N=280) to describe the patterns of intimate partner violence over time in the WFRP sample. (Note that although 327 women completed the third interview, as described above, 19 of these women did not complete the second interview, and 28 did not provide complete information on CTS items.) We used four discrete timeframes for this descriptive analysis: (1) age 17 until one year prior to the baseline interview; (2) the year prior to the baseline interview; (3) the year prior to the second interview (one year after baseline); and (4) the year prior to the third interview (2 years after baseline). The rates of intimate partner violence for the subgroup of women with complete interview data were approximately the same as those based on the available data for each timeframe (see Results). The 280 women did, however, differ significantly from other women on important baseline covariates used for the second analysis; these differences do not appear to be related to the occurrence of intimate partner violence, given the consistency of cross-sectional rates for the subgroup and other women (see Results).

Second, we conducted multivariate analyses to identify risk markers for recent intimate partner violence (defined as occurring during the past year), using baseline interview data. In order to control for partner characteristics, the analysis excluded women without a partner during the year prior to baseline, despite the potential for battering after leaving a relationship (Feld and Straus, 1990). This was also necessary because of interview wording (women were asked about violent behaviors while in an intimate relationship). Among the 336 women with a partner, those with and without intimate partner violence during the year prior to the baseline interview were compared across several domains, using t-tests for continuous variables and chi-square tests for discrete variables. These domains, a priori identified from the literature as important predictors of intimate partner violence, included both childhood and adult factors (see Table 2). We used logistic regression to examine the multivariate relationship of recent intimate partner violence

with childhood and adult factors. Covariates for housing status at baseline and ethnicity were included in all models under consideration to control for important design and background factors. Stepwise procedures were used to first identify independent childhood predictors among factors with significant univariate relationships to intimate partner violence. The same procedure was used to add adult factors to the childhood predictors. Once the final model was selected, the validity of the intimate partner violence analysis for the case-control setting was tested and confirmed according to conditions required for secondary logistic regression analysis (Nagelkerke et al., 1994).

III. Results

Table 1 describes the demographic characteristics of women in the sample. Women recruited into the study tended to be young, never married, and to have two or more young children. A large proportion of the women were Hispanic (37%), primarily Puerto Rican (86% of Hispanic women were Puerto Rican), reflecting Worcester's population, which in 1990 was 30% Hispanic, with 75% of Hispanics being Puerto Rican (US Bureau of Census 1990). The WFRP sample is economically impoverished, with a large majority of women reporting annual income below $15,000.

Longitudinal Patterns of Intimate Partner Violence

The cross-sectional rates of intimate partner violence for the 280 women with complete interview data were the following: 42.5% for the period aged 17 years until one year prior to baseline; 25.7% in the year prior to the baseline interview; 15.4% in the year prior to the second interview; and 19.3% in the year prior to the third interview. These rates were not significantly different from those based on remaining available data for each timeframe: 42.5% vs. 40.0% ($p = .64$), 25.7% vs. 23.4% ($p = .60$), 15.4% vs. 16.4% ($p = .83$), and 19.3% vs. 20.0% ($p = .91$). No differences were found when the 280 women were further compared to other women in terms of self-esteem ($p = .37$) and non-professional emotional support ($p = .18$), two protective factors identified by multivariate analysis (see below). Women with complete data did, however, have significantly higher risk factor rates. They had proportionally greater rates of childhood molestation (45.7% vs. 35.7%, $p = .043$), substance abusing partners (38.3% vs. 26.4%, $p = .015$) and partners with poor work histories (39.7% vs. 29.3%, $p = .03$). These differences are likely due to factors associated with drop out, rather than being indicative of elevated rates of battering

for the 280 women, given the consistency of the cross-sectional rates. In particular, Puerto Rican women were less likely to complete all three interviews (31% vs. 44%, p = .01), had significantly lower rates of childhood molestation (Browne & Bassuk, 1997), but did not differ significantly in their risk for recent intimate partner violence (see below).

Table 2 describes the longitudinal patterns of partner violence, using the four timeframes defined above, and shows the frequency of each pattern among the 280 women. This description includes all possible patterns in order of frequency. For example, the fifth row indicates that 11 of the 280 women (3.9%) experienced intimate partner violence for the first time during the year prior to the third interview (last timeframe).

The most frequently occurring pattern (first row of Table 2) shows that one third of the women (N=95) had not experienced intimate partner violence by the end of the study. Almost a quarter of the women had experienced partner violence at some time prior to the year previous to the baseline interview (first timeframe), but did not report any additional violence during study follow-up (see row 2). Another 9.3%, 2.5%, and 3.9% reported that partner violence occurred only during the year prior to the baseline, second, and third interview, respectively (see rows 3, 9, 5). Less than 2% of the women reported that violence by a partner had occurred across all four time frames (row 15). With regard to return to violent relationships, among the 145 women whose violence had stopped at some time prior to the last timeframe (year previous to third interview), 27.6% reported the reoccurrence of partner violence.

We further examined the longitudinal patterns in Table 2 in terms of recent and previous partner violence. We found that the relationship between recent intimate partner violence and previous partner violence in these 280 women depended on the timeframe. Women with and without any such violence during the year prior to the baseline interview did not differ significantly in their rate of partner violence previous to that time: 37.5% vs. 44%. In contrast, women who experienced intimate partner violence during the year prior to the second interview (third timeframe) had a significantly greater rate of previous violence compared to women who had no partner violence during that timeframe (77% vs. 55%, $p < .01$), with similar results for the year prior to the third interview (80% vs. 58%, $p < .005$).

Childhood and Adult Predictors of Recent Intimate Partner Violence at Baseline

Table 3 summarizes the relationship of recent intimate partner violence (occurring during the past year) with demographic, childhood, and adult factors, based on data collected at the baseline interview for the 336 women with partners. (The analysis excluded women without a partner during the year prior to baseline; see Data Analysis, above.) Women who experienced childhood sexual abuse were significantly more likely to experience recent intimate partner violence ($p < .001$). Other childhood factors associated with increased risk of adult partner violence during the past year included: parental fighting ($p < .01$), mother who was a victim of abuse/battering ($p < .01$), child who was placed in foster care ($p < .05$), and primary female caretaker had mental health problems ($p < .01$).

In addition, two aspects of women's social support during the four weeks prior to the baseline interview were significantly associated with intimate partner violence during the prior year. Women with no partner violence had significantly greater levels of emotional support from non-professional members in the network ($p < .001$), and significantly less conflict in their non-professional network compared to women who reported partner violence ($p < .05$). (Note that conflict in the network excluded conflict due to the partner.) Women with no recent partner violence also had significantly more self-esteem at baseline ($p < .001$). The rate of previous partner violence was not significantly different for women with and without any partner violence at baseline, consistent with the results for the 280 women with complete interview data. Women whose partners had substance abuse problems (drug or alcohol) or who had poor work histories or who had criminal records were, however, more likely to have been battered during the same period ($p < .001$, $p < .001$, $p < .05$, respectively

The multivariate model for intimate partner violence during the year prior to the baseline interview shows that the most significant childhood predictor was childhood sexual abuse (adjusted odds ratio 2.43, $p < .01$; see Table 4). Out-of-home placement into foster care remained significant after adjustment for childhood molestation, but was not an independent predictor, due to confounding with whether or not a woman's partner had a poor work history (adjusted odds ratio 2.04, $p = .074$, when added to the model in Table 3). The effects due to other childhood correlates of recent partner violence were not significant, when controlling for childhood molestation.

The level of non-professional emotional support and self-esteem remained significant predictors in the multivariate model. For these ratio-scaled predictor variables, the odds ratios reported in Table 4 are the decreased risk of intimate partner violence during the past year associated with a one-unit increase in the corresponding predictor. For the emotional support measure, a single unit approximates the difference between women with and without recent partner violence (see Table 3), so that the odds ratio in Table 4 (adjusted odds ratio = .85, $p < .05$) corresponds to this difference. For self-esteem, the difference is greater, equal to three units, with a corresponding (adjusted) odds ratio = .79. Women were at greatest risk of experiencing domestic violence during the past year when the partner had substance abuse problems (adjusted odds ratio = 4.96, $p < .001$). Less increased risk was found due to having a partner with a poor work history (adjusted odds ratio = 2.09, $p < .05$). Neither housing status, nor ethnicity were significant predictors, but were retained in the model as important controlling factors.

The final model achieved a proportional reduction of 20% in the log likelihood chi-square, a likelihood ratio R^2 proposed for logistic regression.

IV. Discussion

This is the first study to date that has investigated childhood and adult risk markers for recent intimate partner violence, and longitudinal patterns during adulthood among extremely poor women, all of whom were mothers with dependent children. Most previous studies have focused on the perpetrators, rather than on women's characteristics and their partners, and, to date, none have specifically focused on risk factors and the patterns of domestic violence over time among low-income women. We found that approximately two-thirds of the women who completed all three interviews (N=280) had experienced intimate partner violence sometime during adulthood, and that most of these experiences were episodic and limited. Consistent with findings for a community-based sample (Campbell et al., 1994), the rate of return to violent relationships by the end of the study among women whose battering had stopped was slightly less than one-third. In contrast, only 4 women were consistently involved in a battering relationship, when examined across four timeframes that spanned early adulthood to end of study follow-up.

The episodic nature of domestic violence for this population is important to interpreting the multivariate results. Specifically, women who experienced partner violence during the year prior to baseline (a measure of recent or "current" partner violence) include a greater proportion of women at high risk for such violence, when compared to women who had experienced partner violence by baseline (a measure of "lifetime" occurrence of partner violence). Our longitudinal data make this concrete. Among the 280 women with complete data, the rate of recurring partner violence (being abused by a partner during more than one timeframe) was 64% for women who reported violence during the year prior to baseline ("current" measure), compared to 44% for women who reported violence at some time prior to baseline ("lifetime" measure).

Childhood Risk Markers for Adult Intimate Partner Violence

With regard to childhood risk markers, we found that sexual molestation during childhood was most highly associated with the likelihood of recent adult intimate partner violence (occurring during the past year). This is not surprising since childhood sexual abuse frequently shatters a child sense of safety in the world, trust in other people, and an intact sense of self. In this study, childhood sexual abuse significantly predicted partner violence during the year prior to baseline, even when controlling for adult factors. Consistent with the literature (see Kaufman Kantor, Jasinski, Aldarando, 1994), these multivariate findings support the notion of intergenerational violence – a cycle that is partly explained by social learning theory in which children model their parent's behavior. Researchers have also reported that women who were victimized as children have damaged self-esteem and may feel that abusive relationships are legitimate and expectable (Straus & Kaufman Kantor, 1994). When examining these findings, it is important to consider the macro-level and structural factors that create the context for violence.

Although childhood sexual abuse is overriding as a predictor of recent intimate partner violence in multivariate analyses, comparable effects due to foster care placement as a child were also found. Placement in foster care may undermine the formation of secure attachments to parental figures during childhood. Out-of-home placement can also compromise children's capacity to develop the skills necessary to establish themselves as self-sufficient adults or to form supportive long-term relationships that will buffer life's inevitable hardships (Eagle, 1994). This is consistent with the confounding between being placed in foster care and having a partner with a

poor work history, that accounted for the significance of this predictor falling marginally above the usual .05 level.

Adult Risk Markers for Recent Intimate Partner Violence

Research indicates that a powerful way to reduce stress is through social support from family and friends. During times of personal crises, supports can effectively buffer stress (see Cohen & Willis, 1985 for a review). Social support is typically defined as transaction of empathy and concern, tangible aid (e.g., babysitting, money), or information and advice from family and friends. Positive support is particularly important in extremely poor women who are heading families alone and are often assuming multiple roles as caretaker, worker and homemaker. Not surprisingly, current negative or conflicted (non-partner) social support was found to be an important correlate of recent intimate partner violence. Conversely, women with greater non-professional emotional support in their relationships were significantly less likely to be in an abusive relationship. Furthermore, women who had greater self-esteem at baseline were less likely to be victimized during the year prior to baseline. As discussed in the introduction, evidence for self-esteem as a risk marker is equivocal and our results strengthen the evidence for it.

The multivariate analysis further replicated previous research, showing that substance abuse by male partners was a strong risk marker for domestic violence (Kaufman Kantor & Straus,1990; Kyriacou et. al., 1999; Coker et. al., 2000), while women's substance abuse was not (Kaufman Kantor & Asidigian, 1996). Similarly, partners with a poor work history posed greater risk, a finding supported by others (Straus, Gelles, & Steinmetz, 1980). In contrast to other studies, women who spent more time working -- at least ten hours/week during part of the year prior to the baseline interview – were at similar risk as women who did not work. Moreover, increased capacity to work was not a protective factor, relative to the risks posed by childhood molestation and foster care placement. Our finding may be due to the extremely low levels of work reported by women. For women who were not battered, the typical duration of working ten or more hours a week was just one month (see Table 2). This "floor" effect (little room for decreased levels of work) constrains the possibility for a significant difference.

Also in contrast to some studies, ethnicity did not significantly differentiate women who were at greater risk. Previous analysis of the WFRP data additionally failed to find evidence for increased risk of severe physical assaults among Latinas, when examining the lifetime occurrence of partner violence, but did find that their risk was significantly lower than that of non-Hispanic whites (Browne & Bassuk, 1997). These multivariate results, however, did not control for current adult factors. Related WFRP analyses of physical violence by current or most recent partner did not find significantly different risks for Puerto Rican women and Non-Hispanic whites; the interpretation of these results is less clear, since this definition of partner violence case is confounded by differences in the timing of previous relationships. We also note that other researchers who found that Hispanic families were at greater risk of partner violence had investigated couples that were living together (Kantor et al., 1994), or concluded that physical or sexual violence between partners was more likely to occur within a marriage (Sorenson and Telles, 1991). These results may not generalize to the population of impoverished women considered here, in which many are unmarried and possibly living in shelter. In particular, among Hispanics, Puerto Rican women are most likely to be head of household and receive welfare (Bassuk et al. 1998). Finally, almost two-thirds of Latinas in the WFRP sample migrated to the mainland. Migration has previously been identified with lower incidence of domestic violence among Mexican-American households (Sorenson and Telles, 1991).

Consequences of Intimate Partner Violence for Poor Mothers

Our findings presented here relate to others derived from the WFRP data, which report on the impact of intimate partner violence on poor women with children. Although neither childhood molestation nor adult partner violence significantly predicted whether or not women became homeless (Bassuk et. al., 1996), both factors played a role in repeat episodes of homelessness. Among first-time homeless mothers, women who experienced partner violence after being re-housed were at significantly greater risk of experiencing a second homeless episode, even after controlling for the effects of childhood sexual abuse (Bassuk, Perloff & Dawson, 2001). Partner violence was also a risk factor for subsequent substance use by poor mothers, after controlling for earlier substance use and partner's substance use (Salomon, Bassuk & Huntington, 2000). Women in the WFRP sample who reported partner abuse during the past year were also significantly less likely to work at least 30 hours/week for six months or more in the following

year, suggesting that domestic violence eroded the poor women's capacity to maintain work (Browne, Salomon & Bassuk, 1999).

Strengths and Limitations of the Study

Most studies have focused primarily on risk markers among male perpetrators. Although this study has attempted to address a significant gap in the literature by focusing on women victims, while controlling for partner characteristics, various limitations must be borne in mind when interpreting the data. The sample was drawn from only one city and included a disproportionate number of Puerto Rican women and fewer Blacks. Although representative of small and mid-sized cities, the findings may not be fully generalizable. In addition, we used definitions of "severe" violence, but did not further distinguish the nature of the abusive episodes. Also, the language used during later interviews broadened the definition of 'intimate partner', although the corresponding cross-sectional rates do not appear to have been inflated by this change.

Our findings are also subject to limitations of the baseline interview. Because it did not include any direct questions about violence during the past year, we used detailed information about relationships to identify whether the most recent occurrence of intimate partner violence prior to baseline fell within this timeframe. This procedure allowed for the possibility of "false positives": women whose most recent violence occurred prior to the year previous to baseline, but who were considered to have been battered during the year prior to baseline. A false positive could occur only among women who had a relationship during the year prior to baseline that started before that year, and only if battering by that partner stopped during the past year. Questions about acts of violence by a current partner were asked in the present tense ("how often the partner uses ... in the relationship"). Thus, any battering that was falsely identified as recent was likely limited to the 33 women who left a violent relationship sometime during the year prior to baseline. Among these women, 23 had been in the relationship for at least two years, allowing for greater possibility that any violence that occurred was not recent. Even so, we expect that many of these women continued to be battered (see, e.g., Campbell et al., 1994). It is difficult, however, to gauge the degree of error in the baseline rate (higher than the two later cross-sectional rates) since the rate for the year prior to the third interview is 26% higher than the rate for the year prior to the second interview. Potential errors in the baseline rate may also account, in part, for the lack of significant differences in the rate of previous violence for this timeframe.

The multivariate results, consistent with previous findings in the literature, suggest that the risk marker analysis is robust to possible false positives.

Despite these limitations, the findings are significant because they describe patterns of violence longitudinally and demonstrate risk markers for recent partner violence among poor mothers – a subject and group that has not been studied using multivariate analyses. Given the extremely high prevalence rates of domestic violence in low-income families with young children (Bassuk et al, 1996; Allard et al, 1997), it is imperative that policymakers and practitioners are aware of these patterns and risk markers. Although not causal, these markers can help policymakers design strategies for protecting women and children who are at greater risk of partner abuse.

V. Conclusion

We have documented childhood sexual abuse and foster care placement as important risk markers for partner violence later in life, particularly for higher risk women who reported domestic violence during the past year and were more likely to experience re-victimization by adult partners. For these impoverished mothers, positive emotional support and self-esteem did not mediate the effects of such childhood adversity, which had a pronounced effect independent of these adult factors. We found little impact due to housing status (homeless or not) and ethnicity, likely surrogates for important macro-level socio-cultural factors in this population. Furthermore, we found limited influence attributable to the numerous individual factors measured by the WFRP, as evidenced by the modest percent of explained variation due to predictors. These findings suggest that future research should consider contextual factors, such as neighborhood policing practices (response rate to calls from victims, arrest rates of perpetrator) and the degree to which community efforts against batterers (arrest, prosecution, treatment) are coordinated. The literature is mixed, however, on the relative impact of these factors (see, e.g., Dunford et al., 1990; Sherman, 1992; Steinman, 1988). More detailed assessment is needed as well, of the complex interplay among economic, social, and cultural factors. This complexity is less amenable to multivariate modeling, particularly when interactive effects are likely to be second or third order.

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Table 1: Demographic Characteristics of Women in WFRP Sample (N=436)

Characteristic	Mean or %
Age in years, mean (range)	27.4 (16-58)
Race/ethnicity, %	
White	39.0
Black	16.5
Hispanic	36.5
Other	8.0
Marital Status, %	
Never married	66.3
Married	5.8
Separated/divorced/widowed	27.9
Children	
Number of children, mean	2.3
Age of children in years, mean	4.8
Income	
Annual income, mean	$8982
< $7000, %	31.2
$7000 - $15000, %	63.0
> $15000, %	5.8
Education, %	
Some or no high school	58.6
High school graduate/GED	28.0
Some college	13.4
Work History	
Ever worked at paid job, %	70.0
Currently working at paid job, %	2.5
Housing History	
Number of moves in prior 2 years, mean	2.8

Table 2: Longitudinal Patterns of Intimate Partner Violence Among Impoverished Women[1]

Row	N	%	Prior to Year Before Baseline[2]	Year Before Baseline Interview	Year Before Second Interview[3]	Year Before Third Interview[4]
1	95	33.9%	None[5]	None	None	None
2	66	23.6%	IPV[6]	None	None	None
3	26	9.3%	None	IPV	None	None
4	14	5.0%	IPV	IPV	None	None
5	11	3.9%	None	None	None	IPV
6	11	3.9%	IPV	None	None	IPV
7	9	3.2%	None	IPV	None	IPV
8	9	3.2%	IPV	None	IPV	None
9	7	2.5%	None	None	IPV	None
10	6	2.1%	IPV	None	IPV	IPV
11	5	1.8%	None	IPV	IPV	None
12	5	1.8%	None	IPV	IPV	IPV
13	5	1.8%	IPV	IPV	None	IPV
14	4	1.4%	IPV	IPV	IPV	None
15	4	1.4%	IPV	IPV	IPV	IPV
16	3	1.1%	None	None	IPV	IPV
	280	100.0%				

[1]Based on 280 women with complete data on all three interviews
[2]Age 17 until one year prior to the baseline interview
[3]One year after baseline
[4]Two years after baseline
[5]Indicates no intimate partner violence occurred during this timeframe
[6]Indicates intimate partner violence occurred during this timeframe

Table 3: Potential Risk and Protective Factors for Recent Partner Violence at Baseline

	Recent Partner Violence (%) (N=104)	No Recent Partner Violence (%) (N=232)
Sociodemographic		
Age (mean)	26.4	26.2
High School Graduate	46.2	58.6*
Puerto Rican	31.7	38.8
Black or Other Ethnicity	24.0	20.3
Homeless At Baseline	52.9	53.9
Childhood Violence		
Childhood Physical Abuse	71.2	60.9
Childhood Sexual Abuse	58.7	37.5***
Parents Fought Physically	56.7	40.1**
Mother Abused/Battered	57.7	40.1**
Childhood Life Events		
Ran Away	46.2	40.1
Foster Care Placement	21.8	12.2*
Placed Out Of Home	46.2	38.4
Homeless as Child	9.8	10.1
Parents Separated	61.2	61.5
Parenting as a Child		
Primary Female Caretaker Problems		
Substance Abuse	20.2	18.1
Mental Health	58.7	40.5**
Physical Health	27.9	27.2
Primary Male Caretaker Problems		
Substance Abuse	50.0	40.1
Mental Health	31.7	29.3
Physical Health	32.7	23.7
Random Anger From		
Either Primary Caretaker	61.5	64.7
Both Primary Caretakers	18.3	17.7
Positive Parenting Practices (mean)	2.2	2.2
Adulthood		
Number of Children (mean)	2.2	2.2
Annual Income (mean)	8990	8730
Months In Past Year Worked At Least 10 Hours Per Week (mean)	0.50	0.98
Current Substance Abuse	37.5	31.9
Mental Health Hospitalization In Past Year	1.9	2.6
Prior Intimate Partner Violence	40.4	36.4
Current Self-Esteem (mean)	30.1	32.8***
Current Social Support		
Size Of Non-Professional Network (mean)	4.9	4.8
Non-Professional Emotional Support (mean)	8.6	9.6***
Conflict In Non-Professional Network (mean)	3.9	3.2*
Non-Professional Instrumental Support (mean)	10.3	10.7
Seeking Support	3.9	1.7
Partner Characteristics		
Current Substance Abuse	59.4	23.4***
Criminal Activity	27.7	18.0*
Poor Work History	53.0	29.0***

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

Table 4: Result of Logistic Regression for Recent Partner Violence at Baseline (N=336)

Predictors of Current Intimate Partner Violence	Parameter Estimate	Standard Error	Odds Ratio
Homeless at Baseline	-0.169	.29	0.84
Hispanic (Primarily Puerto Rican)	0.417	.35	1.52
Black or Other Ethnicity	0.440	.37	1.55
Childhood Sexual Abuse	0.887	.29	2.43**
Self-Esteem	-0.078	.03	0.93**
Non-Professional Emotional Support	-0.163	.07	0.85*
Partner Poor Work History	0.737	.29	2.09*
Partner Substance Abuse	1.602	.30	4.96***

* = p< .05; ** = p< .01; *** = p< .001

Chapter Two

The Relationship Between Intimate Partner Violence and the Use of Addictive Substances in Poor and Homeless Single Mothers

The Relationship Between Intimate Partner Violence and the Use of Addictive Substances in Poor and Homeless Single Mothers

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ABSTRACT

This study explores the relationship between adult partner violence and *subsequent* substance abuse in extremely poor and homeless women. It builds on a literature that has documented strong associations between interpersonal violence and substance abuse, while neither fully clarifying causal relationships nor testing more complex explanatory theories. Using a longitudinal data set of extremely poor women (N=278), most on public welfare, researchers examined the independent and joint contributions of exposure to adult partner violence, childhood physical abuse and sexual molestation, post-traumatic stress disorder (PTSD), and partners' substance use on poor women's use of addictive substances. The study found a history of intimate partner violence to be strongly predictive of women's subsequent drug, but not alcohol, use. Women with a history of adult partner violence had nearly three times the odds of using illegal drugs during the subsequent study years than women who had not experienced partner violence. Reverse causation (i.e., that women's substance use increases the likelihood that they will become involved in physically violent relationships), did not account for the strong association. Adjusting for past drug use did not eliminate the observed association and it was much stronger among women with no history of drug use at baseline. Intimate partner violence had an independent effect when in a model together with sexual molestation and PTSD, indicating that sexual molestation does not completely confound the partner violence-drug use link, nor does PTSD strongly mediate that link. Partner substance use was also strongly related to women's subsequent drug use controlling for the other factors, indicating that it poses a risk for subsequent drug use independent of partner violence. The only significant predictor of a woman's subsequent alcohol use was her partner's alcohol use at baseline. The article reviews the implications of study findings for programs and public policies.

The Relationship Between Intimate Partner Violence and the Use of Addictive Substances in Poor and Homeless Single Mothers

Despite the proliferation of research on violence by intimates over the past twenty years (Gelles & Conte, 1990), basic information on the impact of violence on poor women's lives is startlingly absent (see Browne & SS Bassuk, 1997, for review). Very limited research exists that explores the impact of trauma on poor women's social roles and economic well-being (Browne et al., 1999). One important aspect of this broader question is the relationship between violence and poor women's use of addictive substances. As society demands that low-income single mothers join the workforce after limited stays on public assistance, efforts to support those least likely to succeed, including women with substance abuse disorders, require an informed response.

Furthermore, increasing alcohol and drug use among women has had devastating consequences for poor families and society. Drug involvement among young women is a major contributor to their increased rates of incarceration over the past 15 years. The number of incarcerated women has nearly tripled (Beck & Gilliard, 1995); 70% of women serving federal prison sentences in the late 1990s were in on drug related charges (Finkelstein, 1998). Economic deprivation (Maher, 1992), health risks such as HIV and AIDS (Brown et al., 1994), dual diagnosis and psychological disorders including depression and PTSD (EL Bassuk et al., in press), loss of child custody (Packard, 1999), and mounting stigma (Blume, 1992) characterize the short- and long-term consequences of substance use for women. In addition, victimization, poverty, and the use of addictive substances among low-income single mothers can have profound effects on the children in their care (SAMSHA, 2000; Packard, 1999).

This study explores the complex relationship between adult partner violence and substance abuse in extremely poor and homeless women. It builds on a literature that has documented strong associations between interpersonal violence and substance abuse, while neither fully clarifying causal relationships nor testing more nuanced explanatory theories. Using a longitudinal dataset of extremely poor and homeless women, most on public welfare, this study examines the independent and joint contributions of exposure to adult partner violence, childhood physical abuse and sexual molestation, post-traumatic stress disorder (PTSD), and partners' substance use on poor women's use of addictive substances. Since interpersonal violence is prevalent among poor women (Browne & SS Bassuk, 1997), better understanding its impact on women's use of substances is critical. This is especially true since the use of addictive substances potentially has enormous impact on women's health, well-being and ability to parent.

Interpersonal violence in poor women's lives

A growing body of research has begun to document the prevalence and severity of violence in the lives of low-income women, especially women on public welfare (Allard et al., 1997; Browne & SS Bassuk, 1997; Lloyde & Taluc, 1997; Brandwein, 1998). Although women in all socioeconomic groups are victimized by intimate partner violence, poverty has been shown to be strongly associated with such violence (Belle, 1982; Stark & Flitcraft, 1988; Hotaling & Sugarman, 1990; Straus & Gelles, 1990).

Recent research on welfare recipients documents remarkably consistent lifetime rates of intimate partner violence among poor women, with approximately six out of ten having experienced partner violence at some point in their lives (Washington State Institute for Public Policy, 1993; Curcio, 1997; Allard et al., 1997). Similarly, in the study of homeless and poor housed single mothers in Worcester, Massachusetts that serves as the dataset for this report, 61%

of the combined sample, most on public welfare, reported at least one episode of severe partner violence (EL Bassuk et al., 1996). These figures compare to 22% found in a national probability survey of 8,000 women age 18 and older (P. Tjaden, Center for Policy Research, Denver, personal communication, February 19, 1997).

The information available on the prevalence of childhood abuse histories in poor single mothers also presents a disturbing picture. The Family Income Study in Washington State, based on telephone and face-to-face interviews of women on public assistance, reported that 38% had been sexually abused as children, compared to rates of 20 to 27% in community-based representative samples of women (Roper & Weeks, 1993; Finkelhor, 1994). In one of the first studies to use comprehensive violence measures comparing homeless (N=50) with poor housed welfare mothers (N=50), 60% of homeless mothers reported child physical abuse histories and 42% histories of child sexual molestation (Goodman, 1991). Researchers with the Worcester Family Research Project reported similar findings. Of the 436 women in the combined homeless and poor housed sample, 63% had histories of severe physical violence by childhood caretakers, and 42% histories of child sexual molestation (Browne & SS Bassuk, 1997). Furthermore, when examining childhood risk factors for adult partner violence, the Worcester study researchers found that child sexual molestation was the strongest predictor of later intimate partner violence for poor and homeless women (EL Bassuk et al., submitted).

The lifetime rates of interpersonal violence among poor women are extraordinarily high. In the Worcester study, for example, when researchers combined all family/intimate violence across the lifespan, more than eight out of every 10 women had experienced some form of severe violence. This lifetime rate is even more troubling when one considers the average age of the sample was only 27 years old.

Violence and substance abuse

Over the past twenty years, a growing body of research has explored the immediate and long-term psychological effects of interpersonal violence for women and children (see Browne, 1992, 1993; McCauley et al., 1997; Polusny & Follette, 1995 for reviews). Substance abuse figures prominently in this research as strongly associated with both childhood and adult exposure to interpersonal violence (Dutton, 1992; Kilpatrick et al., 1985; Herman, 1992; Browne & Finkelhor, 1986; Carmen et al., 1984; Bryer et al., 1897; Herman et al., 1989; Miller et al., 1993; Wilsnack et al., 1997; Downs et al., 1992; Polusny & Follette, 1995; Rohsenow, Corbett, & Devine, 1988; Singer et al., 1989; Straus & Kantor, 1994; Windle et al., 1995).

Researchers have documented high rates of interpersonal violence across the life span in clinical samples of substance users as well as high rates of substance use in samples of battered women. For example, Miller et al. (1993) found that women in treatment for alcohol abuse were significantly more likely to have histories of child sexual abuse than women in a general household sample. The first general population survey of women that included detailed questions about child sexual abuse supported these clinical sample findings. Women with histories of child sexual abuse were significantly more likely to report problem drinking and use of illicit drugs (Wilsnack et al., 1997). Other research provides evidence that women who are victims of partner violence are also at increased risk for abusing alcohol, illicit drugs and prescription medications (Galenter, 1997; Stark & Flitcraft, 1988). In one of the few studies including predominently poor and minority women, Amaro et al. (1990) found that victims of adult partner violence during pregnancy were more likely to be users of alcohol and drugs.

While such associations have been repeatedly documented, the directionality of the relationship remains unclear. Much of the literature on partner violence and substance abuse has

focused on the use of addictive substances, especially alcohol, by the aggressive male partner and its role in accompanying abuse (Lipsey et al., 1997). One of the few longitudinal studies addressing the directionality of the relationship between violent assault (including stranger violence) and substance use in women found that the use of drugs, but not alcohol, increased the odds of subsequent violent assault among a national probability sample of 3,006 women (Kilpatrick et al., 1997). Reciprocally, after a new assault, the use of both drugs and alcohol significantly increased.

While a second generation of research has begun to be published, limited studies are available that provide more nuanced information about the pathways between these variables or their causal relationships, especially for women (Epstein et al., 1998; Chilcoat & Breslau, 1998; Lipsey et al., 1997; Kilpatrick et al., 1997). Despite assumptions about causal links, the actual evidence remains unclear, largely due to various limitations in study samples and designs (Lipsey et al., 1997; Kaufman Kantor & Asdigian, 1997; Roizen, 1993). A number of theories have emerged, however, that attempt to explain the connection between interpersonal violence and subsequent substance use in women.

Childhood abuse confounds the association between partner violence and women's substance use

Kaufman Kantor & Asdigian (1997) conclude a review of the role of women's intoxication in husband-to-wife violence by posing a number of alternative theories that may explain the intoxication-victimization effect, including that childhood experiences of abuse impact both the woman's excess drinking and her victimization. A number of studies identify childhood abuse as a risk factor for adult partner violence, suggesting an intergenerational transmission of violence both for perpetrator and victim (Wyatt et al., 1992; Urquiza & Goodlin-

Jones, 1994; EL Bassuk et al., submitted). In addition, as reviewed above, evidence also indicates that women who have experienced childhood abuse, especially child sexual abuse, are more likely to abuse substances later in life. Thus, a history of childhood abuse could account for the relationship between adult partner violence and substance use, without there necessarily being a causal link between the latter two variables.

PTSD mediates the relationship between violence and substance use

Another prominent explanatory model posits that the pathway from violence to substance abuse in women is through emotional distress and that women use substances to self-medicate that distress (Cappell & Greeley, 1987; Stark & Flitcraft, 1988; Epstein et al., 1998). A number of recent empirical studies appear to support this theory.

In a study of childhood rape and alcohol use in women, Epstein et al. (1998) posit that if the self-medication hypothesis were correct, women who have experienced child sexual abuse and its consequent emotional distress would be at especially high risk for substance abuse. They explain that childhood sexual assault is a traumatic event that often produces symptoms of avoidance or numbing, increased arousal and re-experiencing of the traumatic events—all qualifying symptoms for a diagnosis of PTSD (see DSMIIIR, American Psychiatric Association, 1987). Indeed, the majority of child sexual abuse survivors develop PTSD (Saunders et al., 1992). Epstein et al. (1998) demonstrated significant pathways connecting childhood rape to PTSD symptoms as well as PTSD symptoms to alcohol use. These results suggest that PTSD may affect the later development of alcohol abuse in women.

PTSD is also prevalent in samples of adult victims of partner violence. Nearly two-thirds of the battered women seeking help in two different programs met diagnostic criteria for PTSD (Saunders, 1994). Chilcoat (1998) found that PTSD predicted increased risk of drug abuse or

dependence, while finding no evidence that preexisting drug abuse or dependence increased the risk for PTSD or subsequent traumatic events.

Substance use by male partners confounds the relationship between partner violence and women's substance use

A theoretical approach derived from the "relational model" of treatment for women substance abusers suggests that searching for "connections" in relationships may lead some women to the use of substances (Finkelstein, 1993; Finkelstein, 1996). Noting that a significant number of substance-dependent women are involved in intimate relationships with other alcoholics or drug users, proponents hypothesize that the substance abuse problems of the batterers may contribute both to the violence and to the woman's substance abuse problems (Jasinski & Williams, 1998).

The literature profiling abusive men implicates substance use as a risk marker for violence (Fagan, 1990; Goldstein et al., 1989). In a recently completed study on the frequency and correlates of intimate partner violence in a clinical population of 1401 women, alcohol and/or drug use by the *male* partner was the strongest correlate identified (Coker et al., 2000). Kaufman Kantor and Asdigian's review of the literature (1996) concluded that violent victimization is more closely related to the partner's use of alcohol rather than the victim's. Jasinski and Williams (1998) point out that future research must disentangle this relationship since women's substance abuse may be highly correlated with their partner's abuse.

Utilizing a sample of extremely poor and homeless single mothers followed longitudinally for two years, this study explores the relationship between adult partner violence and substance use. The study addresses two questions: 1) Do poor women who experience intimate partner violence have increased odds of subsequently abusing alcohol or illicit

substances?, and 2) What role, if any, do childhood victimization, adult PTSD, and partners' use of substances have in the relationship between adult partner violence and subsequent substance use in poor women?

METHODS

Setting

Unlike most prior studies of homeless and extremely poor women conducted in large urban centers like Chicago (Lloyd & Taluc, 1997), Boston (Bassuk & Rosenberg), Los Angeles (Koegel, Burnam & Farr, 1998), and New York (Shinn, Knickman & Weitzman, 1991), this data set was collected in Worcester, Massachusetts—the state's second largest city with a population of 169,000. At the time of data collection, approximately 15% of Worcester's residents lived below the federal poverty level. Worcester's job base had eroded from its early stature as an important industrial center; its housing prices had seen sharp escalation; state-wide welfare benefits had been stagnant for nearly a decade; and the city had experienced a recent influx of Latino families. As such, Worcester provides a useful composite of the issues facing small to midsized postindustial cities in the US.

Respondents

The Worcester Family Research Project (EL Bassuk et al., 1996) used an unmatched case-control design to recruit homeless and low-income housed female heads of households. Homeless mothers (n=220) were randomly enrolled from all nine of Worcester's emergency and transitional shelters and its two welfare motels (3.2% of the sample) between August 1992 and July 1995. All homeless women who had been in shelter at least seven consecutive days and were pregnant or had custody of at least one dependent child under 17 years of age were asked to participate in the study. Of the homeless mothers approached, 72% agreed to be interviewed.

The comparison group of low-income housed mothers (n=216) was randomly selected from women who visited Worcester's Department of Public Welfare office either to redetermine their welfare eligibility or to discuss other issues with their caseworker. To be eligible for enrollment, comparison-group women had to have no history of homelessness -- defined as having spent more than seven consecutive nights in a shelter, car, public park, abandoned or nonresidential building, or other nondwelling (McKinney Homeless Assistance Act, 1987); be pregnant or have custody of at least one dependent child under 17 years of age; and be currently receiving Aid to Families with Dependent Children (AFDC).

Some data were collected on the 141 homeless and 178 mothers who refused to participate or did not complete all sittings of the baseline interview. No significant differences were found between those women and the final sample in age, marital status, education, number of children, and welfare use, although Puerto Ricans were somewhat more likely to refuse or drop out than members of other ethnic groups.

Of the 436 women in the baseline study, 356 were reinterviewed between May 1994 and November 1996 (follow-up 1), and 327 were again reinterviewed between September 1995 and August 1997 (follow-up 2). In this report, we focus on the 278 women who completed all interviews and had no missing data on the variables described below. There was no relationship between completion status and the following baseline variables: age, marital status, and lifetime history of partner violence. However, non-Puerto Rican women and women who were housed at baseline were more likely to complete all interviews.

Representativeness of Sample

The study's comparison group reflects Worcester's AFDC population with respect to ethnicity and age (Worcester Department of Public Welfare, 1990). When compared to women receiving

AFDC in the U.S., the comparison group is similar with respect to age, education, and number of children, but has a higher proportion of Hispanics (42% vs. 18%) and a lower percentage of blacks (10% vs. 45%) (U.S. Bureau of the Census, 1995). The homeless sample is similar in age and number of children to sheltered homeless families nationally (Rog et Al., 1995). However, the sample has a greater percentage of Hispanics and fewer blacks.

Measures

A structured interview consisting of original question sets as well as existing instruments was used to obtain detailed information across several domains, including demographic characteristics, history of violent victimization, mental and physical health, and substance use. Criteria for instrument selection included prior use with people of color and with low-income or homeless populations; ease of administration in the shelter setting; and demonstrated validity and reliability.

The entire protocol was translated into Spanish and reviewed by bilingual and bicultural translators. Because of the expected high proportion of Puerto Rican families and the clinical nature of the interview, the translation team consisted of a Puerto Rican translator and clinician. All participants were given the opportunity to take the interview in either English or Spanish. Highly trained female interviewers, including bilingual interviewers for women choosing to complete the interview in Spanish, administered the baseline protocol in face-to-face interviews carried out over three to four sessions of approximately two hours each.

For homeless respondents, shelters provided private interview spaces. Housed respondents were interviewed in their homes or at a community-based project office. Women were given vouchers redeemable for food or merchandise at local stores as compensation for their participation. Questions about physical and sexual victimization and substance use were

asked toward the end of the second or third interview session; this was done to maximize the rapport between respondent and interviewer and minimize the possibility of underreporting of sensitive material. Follow-up interviews were conducted in women's homes or at the community-based project office. Where feasible, respondents were interviewed by the same interviewer who conducted the baseline interview. Follow-up interviews lasted approximately two hours.

Outcomes

Frequent illegal drug use was defined as the use of any illegal drug with a frequency of three to four times per month or greater in the two-year interval between the baseline and second follow-up interview. Respondents were asked questions regarding the frequency with which they used cocaine, heroin, amphetamines, barbiturates and "other" drugs. Women who responded affirmatively to the "other" item were asked to name the specific drug or drugs used; these responses were reviewed and coded for the presence of illegal drugs. Respondents were also asked about frequent illegal drug use (cocaine, heroin, amphetamines, barbiturates, marijuana or quaaludes) in the two years prior to the baseline interview.

Problematic alcohol use was assessed with two items, one which asked about the frequency of drinking and the other about the typical number of drinks consumed per day during episodes of drinking. Problematic alcohol use was defined as drinking four or more drinks per day at least two to three times per week during the two-year period between the baseline and second follow-up interview, or consuming 6 or more drinks on at least one occasion during the month prior to the first or second follow-up interview. Respondents were also asked about problematic alcohol use in the two years prior to the baseline interview.

Predictors

The physical aggression scale of the Conflict Tactics Scales (CTS; Straus, 1979, 1990) was used to obtain data on physically violent actions by intimate male partners in adulthood and by childhood caretakers. A widely used measure of physical violence, the CTS has been shown to possess adequate reliability, validity and independence from social desirability effects (Straus, 1990). Items present behavioral descriptions of physically aggressive acts, with a yes/no or a frequency response for each item.

Severe physical violence by intimate male partners since age 17 or since the respondent was "on her own" (whichever was earlier) was defined as the occurrence of at least one of the following prior to the baseline interview: being slapped six or more times; being kicked, bit, or hit with a fist; hit with an object; beaten up; choked, strangled, or smothered; threatened or assaulted with a knife, gun, or automobile; or having one's life threatened in some other manner. Intimate male partners were defined as men with whom the respondent had a "serious relationship that lasted for at least three months."

Severe physical violence by childhood caretakers occurring prior to age 18 was defined similarly to violence by intimate male partners, except that "being slapped six or more times" was not included and "burned or scalded" replaced "being choked, strangled, or smothered." Respondents were queried about three categories of potential perpetrators: primary female caretaker, primary male caretaker, and other adult members of the childhood household. Although the latter category may contain people who were not routinely (or at all) involved in caretaking, the term "childhood caretakers" is used for brevity's sake.

Childhood sexual molestation was defined as the occurrence, before age 18, of "any kind of sexual advance or unwanted sexual experience" by any individual older than the respondent.

Lifetime history of post-traumatic stress disorder (PTSD) was assessed using the Structured Clinical Interview for DSM-III-R-Non-Patient version (Spitzer et al., 1990).

At baseline, respondents were asked to report on the alcohol and drug use of their current or most recent intimate male partners. *Partner drug use* was assessed with the following item: "During the time you were with him [the partner], about how often did he use other [non-prescription] drugs such as cocaine, heroin, speed, etc.?" Partners who were reported to use these drugs "about once per week" or more were considered drug users. *Partner alcohol use* was assessed similarly, with the question "During the time you were with [your partner], did he ever use alcohol?" Affirmative answers were followed up with an item asking the frequency with which the partner became intoxicated. Partners reported as being intoxicated at least two to three times per week were considered alcohol users.

Demographic characteristics included *age*, *marital status* (never vs. ever married), *race/ethnicity* (white, black, Puerto Rican, or other), *educational level*, and *housing status* at baseline (homeless vs. housed).

Analysis

Chi-square tests were used to assess the statistical significance of the crude relationship between a history of intimate partner violence and subsequent substance use. We also used this technique to examine relationships between these variables and other categorical covariates. Odds ratios and Wald tests from logistic regression modeling were used to estimate the association and test the significance of the relationship between a history of partner violence and subsequent illegal drug and alcohol use while controlling for potential confounders and examining mediation. These adjustments were done through series of models that offered insight into the robustness of the relationship between partner violence and substance use. Because

preliminary analyses revealed very different results for drug and alcohol use, we modeled the two outcomes separately. Standard diagnostic tests (cf. Hosmer & Lemeshow, 2000) revealed that models provided a good fit to the data.

RESULTS

Sample characteristics

The average age of the respondents was 27.4 years (standard deviation=7.9). As shown in Table 1, 42% were non-Hispanic white, 32% were Puerto Rican, 19% were black, and 8% were of other ethnic backgrounds. Nearly half of the sample (48%) had been homeless at baseline. Over half (55%) had graduated from high school or earned a general equivalency diploma (GED). About two-thirds (69%) had never married.

Correlates of physical violence by male partners

At baseline, 62% of women reported a history of physical violence by male partners. Demographic factors associated with a decreased likelihood of reporting partner violence include Puerto Rican ethnicity, never having been married, and being housed (vs. homeless) at the baseline interview (**TABLE 1**). Women who had experienced partner violence were far more likely to have experienced physical violence by caregivers or sexual molestation in childhood than women who had not experienced partner violence. They were also more likely to have a history of PTSD and to report that their partners used drugs or alcohol. Victims of physical violence were far more likely to report subsequent use of illegal drugs themselves but were not more likely to report subsequent alcohol use.

Predictors of illegal drug use

During the 2-year follow-up, 17% of the respondents reported frequent illegal drug use. Table 1 shows predictors of respondents' drug use during follow-up. Blacks were somewhat

more likely and Puerto Ricans somewhat less likely than whites to report drug use. High school graduates were somewhat less likely than those with fewer years of education to report drug use. Women who were homeless at baseline were more likely than housed women to report subsequent drug use. The association between a lifetime history of partner violence and subsequent drug use was strong; women who had ever experienced partner violence were over 4 times more likely to use illegal drugs during the follow-up period. A history of child sexual molestation was also strongly associated with drug use during follow-up, as was a PTSD diagnosis and partners' problematic drug use at baseline. A history of physical violence by childhood caregivers was not significantly predictive of respondents' drug use.

Predictors of problematic alcohol use

During the 2-year follow-up, nearly one-quarter (23%) of the sample reported problematic alcohol use. Table 1 shows predictors of respondents' alcohol use during follow-up. Women who had never been married were somewhat less likely to report alcohol use than ever married women. Somewhat surprisingly, a lifetime history of partner violence was not significantly associated with respondents' subsequent alcohol use. Although women who had experienced partner violence at some point in their adult lives were approximately 40% more likely to report subsequent alcohol use than women who had not experienced such violence, this association did not reach statistical significance ($p=0.24$). However, partners' alcohol use was strongly predictive of respondents' own alcohol use. Women who at baseline reported that a male partner's alcohol use was problematic had more than twice the odds of problematic alcohol use during the follow-up period. A history of child physical violence, child sexual molestation, and PTSD were each unrelated to respondents' likelihood of reporting subsequent alcohol use.

Multivariate relationship between physical violence by male partners and subsequent drug use

Demographic characteristics associated with a history of physical violence by male partners and/or respondents' subsequent drug use may confound the relationship between partner violence and respondents' drug use, and psychosocial variables could either confound, mediate, or moderate this relationship. To control for potential confounding of the violence-drug use relationship by demographic characteristics and to examine whether selected psychosocial variables mediate or moderate the violence-drug use relationship, we next analyzed the data using a series of logistic regression models. In the first step, we estimated the relationship between each psychosocial factor of interest and subsequent drug use while adjusting for the influence of demographic variables (**TABLE 2, MODELS 1a-f**). Controlling for age, ethnicity, education, marital status, and housing status at baseline, physical violence by male partners remained significantly associated with respondents' subsequent drug use. Child sexual molestation, PTSD, partners' drug and alcohol use, and respondents' own drug use at baseline were also each associated with respondents' drug use at wave 1 or wave 2 after adjustment for demographic factors. Physical violence by childhood caregivers was not associated with drug use in adulthood, so we did not consider it further.

Given the strong association between child sexual molestation and PTSD (demographic-adjusted odds ratio (OR) =6.53, 95% confidence interval (CI) 3.70-11.52, p=0.0001) and also between physical violence by male partners and PTSD (OR=3.28, 95% CI 1.83-5.88, p= 0.0001), we next examined whether a history of PTSD mediates or moderates the relationship between victimization history – both sexual molestation in childhood and physical violence by male partners in adulthood – and subsequent drug use. In a main-effects only model, the association

between child sexual molestation and subsequent drug use was substantially weakened after adjusting for PTSD (OR=1.28, 95% CI 0.60-2.74, p=0.52); the association between PTSD and subsequent drug use remained strong but fell just short of statistical significance after adjusting for child sexual molestation, (OR=1.99, 95% CI 0.94-4.23, p=0.07). However, there was a striking interaction between child sexual molestation and PTSD; that is, the effect of each factor on subsequent drug use depended strongly on the presence of the other factor (**MODEL 2**).

Among those with a history of PTSD, victims of child sexual molestation had more than 3 times the odds of using drugs than women who had not experienced child sexual molestation (OR= 3.68, 95% CI 0.96-14.20; p=0.06). Similarly, among those reporting child sexual molestation, women with a history of PTSD had much greater odds of subsequent drug use than women without PTSD (OR= 3.94, 95% CI 1.31-11.81, p=0.01). On the other hand, there was no association between either child sexual molestation or PTSD and subsequent drug use among women with only one but not both of these factors. That is, among those with no history of PTSD, there was no association between child sexual molestation and drug use (OR=0.69, 95% CI 0.23-2.10, p=0.51); among those not reporting child sexual molestation, there was no association between PTSD and subsequent drug use (OR=0.74, 95% CI 0.19-2.89, p=0.66).

A review of the crude data helps to clarify these findings further. Of the 127 women reporting child sexual molestation, the 76 with PTSD had a drug use rate of 30% whereas the 51 without PTSD had a drug use rate of 10%. Of the 151 women not reporting child sexual molestation, the 30 with PTSD had a drug use rate of 10% whereas the 121 without PTSD had a drug use rate of 12%.

Controlling for the interactive effect of child sexual molestation and PTSD, violence by male partners remained strongly predictive of subsequent drug use (OR=3.92, 95% CI: 1.47-

10.49, p=0.006) (**MODEL 3**). There was no interaction between partner violence and PTSD. We also tested for interaction between child sexual molestation and physical violence by male partners and found no evidence for such an interaction -- i.e., there was no evidence to suggest that the presence of either factor magnified or diminished the other factor's relationship to subsequent drug use.

Factors such as partners' drug and alcohol habits may be responsible for the observed association between violent victimization by partners and respondents' subsequent drug use. Indeed, there is a strong association between a history of physical violence by partners in adulthood and partners' substance use as well as between partners' substance use and respondents' drug use. We examined whether violent victimization by male partners is associated with women's subsequent drug use independently of partners' drug and alcohol habits (**MODEL 4**). Partners' use of drugs and alcohol were both significant predictors of respondents' drug use and were therefore combined into one variable – substance use -- for modeling purposes. Controlling for partners' drug and alcohol use, women reporting partner violence remained more likely to report subsequent drug use (OR=3.47, 95% CI 1.28-9.42; p=0.01). After adjustment for partner violence, women with substance-using partners were also more likely to report that they themselves were subsequent drug users (OR=2.79, 95% CI 1.34-5.79, p=0.006). Thus, both violent behavior and substance use by male partners appear to be independently associated with respondents' subsequent drug use. There was no interaction between partner violence and partner substance use on respondents' subsequent drug use. The interaction between child sexual molestation and PTSD remained significant; respondents reporting both child sexual molestation and PTSD were more likely to report subsequent drug use than women without such a history.

It is possible that a woman's use of addictive substances may leave her vulnerable to violent victimization by an intimate partner, rather than, or in addition to, the other way around. To reduce the likelihood that the strong association between a history of partner violence and substance use measured over the two-year follow-up period could be accounted by this reverse pathway, we controlled for respondents' own prior drug use – i.e., drug use occurring in the two-year interval prior to the baseline interview -- in a fifth and final step (**MODEL 5**). While associations were somewhat attenuated, women who experienced partner violence still had three times the odds of subsequent drug use as women without violent partners (OR=2.98, 95% CI: 1.08-8.23, p=0.04). The full model, including demographic covariates, is shown in **TABLE 3.** It is worth noting that in the full model ethnicity does not independently predict increased odds of drug use; white and black respondents had nearly identical odds while Puerto Rican respondents appeared somewhat less likely to use drugs, but not at a statistically significant level.

To examine more closely the association between partner violence and subsequent drug use among women who did and did not report drug use at baseline, we stratified the sample by drug use at baseline. There was a strong positive association between partner violence and subsequent drug use among women who had not used drugs in the two years prior to the baseline interview (Fisher's exact test, $p<0.0001$). In this group, none of the 91 women without a history of partner violence at baseline reported drug use in the subsequent two years; by contrast, 15% of 117 women who had experienced partner violence reported such drug use. On the other hand, among women who had used drugs in the two years prior to baseline, there was no association between partner violence and subsequent drug use (OR=1.15, 95% CI: 0.36-3.61, p=0.82). These data suggest that a history of partner violence strongly predicts the onset of new drug use rather than promoting the continuation of old drug habits.

In addition, because of the complexity of the finding on the interaction of child sexual abuse and PTSD, and because it was of only marginal statistical significance in the full model, we ran a final model (not shown here) that dropped the interaction between child sexual molestation and PTSD. In the sample as a whole, neither child sexual molestation nor PTSD predicted subsequent drug use (child sexual molestation: OR=1.28; 95% CI:0.56-2.92; p=0.56; PTSD: OR=1.29; 95% CI: 0.56-2.96; p=0.55). However, parameter estimates for intimate partner violence and other variables remained essentially unchanged. For example, women with a history of intimate partner violence were far more likely to report subsequent drug use (OR=3.00; 95% CI: 1.09-8.27; p=0.03), and women whose partners used drugs or alcohol were also at increased risk of drug use (OR=2.25; 95% CI: 1.05-4.79; p=0.04).

Multivariate relationship between physical violence by male partners and subsequent alcohol use

Controlling for demographic variables, none of the following variables were associated with women's subsequent alcohol use: physical violence by childhood caregivers, childhood sexual molestation, physical violence by male partners, and PTSD. Partners' alcohol use was significantly predictive of respondents' subsequent alcohol use (OR=2.30, 95% CI: 1.21-4.37; p=0.01), although partners' drug use was not predictive of respondents' subsequent alcohol use (OR=1.13, 95% CI 0.59-2.16, p=0.71). Further modeling was not undertaken.

DISCUSSION

This study contributes to a better understanding of the complex relationship between adult partner violence and the use of addictive substances in the lives of poor women. We found strong evidence that intimate partner violence is predictive of subsequent drug, but not alcohol, use. After adjustment for demographic and psychosocial characteristics associated with a history

of physical violence and/or respondent's drug use, women with a history of adult partner violence had four and a half times the odds of using illegal drugs during the subsequent study years than women who had not experienced partner violence as adults. When we examined the joint and independent contribution of childhood factors, PTSD and partner substance use to subsequent drug use, our findings supported elements of each of the three theories outlined above (Kaufman Kantor & Asdigian, 1997; Cappell & Greeley, 1987; Stark & Flitcraft, 1988; Epstein et al., 1998; Finkelstein, 1994). However, they also suggest limitations to the theories and the need for further research.

Consistent with previous research (EL Bassuk et al., submitted; Browne et al., 1999), women who were victimized by violent partners were more likely to have a history of child sexual molestation and to meet diagnostic criteria for PTSD. Supporting the theory that childhood abuse could confound the association between adult partner violence and women's substance use, we also found that women with histories of child sexual molestation were nearly twice as likely to later develop drug abuse. Supporting the theory that PTSD mediates that relationship, we found that PTSD is a major link from childhood sexual molestation to drug use.

However, our data suggest that a history of child sexual molestation and PTSD together is far more toxic with respect to later drug use than a history of child sexual molestation or PTSD alone. One should also note that the co-occurrence between child sexual molestation and PTSD was quite high; 60% of respondents who reported child sexual molestation also had PTSD, whereas only 20% of respondents who did not report child sexual molestation had PTSD. This fact, combined with the relatively sparse data on drug use among women with one but not both of these risk factors (only 3 of 30 women with child sexual molestation but no PTSD reported drug use, as did only 5 of 51 women with PTSD but no child sexual molestation), suggests that

these findings be replicated in a larger sample before concluding that the interactive effect between child sexual molestation and PTSD is stronger than the main effect of each on later drug use.

An interaction did not exist between adult partner violence and PTSD, nor did PTSD have a strong mediating effect on the relationship between adult partner violence and later drug abuse. Rather, adult partner violence remained independently predictive of later drug use, regardless of child sexual molestation or PTSD history. Thus, neither child sexual molestation, PTSD, nor their interaction is the sole mechanism by which partner violence and subsequent drug use are linked.

One potential explanation for this association, supporting the relational model theory outlined above, might be that women in violent relationships are more likely to have substance-using partners who introduce or encourage the women to use substances. In our sample, women with histories of partner violence were indeed significantly more likely to have had at least one drug-and alcohol-using partner. However, in multivariate analyses, partners' substance abuse and a history of partner violence were both independent predictors of women's later drug use. Thus, the relationship between partner violence and women's subsequent drug use cannot entirely be accounted for by the relational model either.

Our data suggest that reverse causation -- i.e., that women's substance use increases the likelihood that they will become involved in physically violent relationships – also cannot account for the findings. Adjusting for past drug use in modeling the relationship between partner violence and future drug use did not eliminate the observed association between these two variables. The association between partner violence and subsequent drug use was in fact

much stronger among women with no history of recent drug use at baseline than among women with such a history.

These findings suggest complex and multiple pathways from adult partner violence to poor women's substance use. A history of childhood sexual abuse coupled with PTSD appears to be a strong predictor of later drug use. However, PTSD does not appear to be the primary mediator of the relationship between adult partner violence and drug or alcohol use. Moreover, the presence of a substance-abusing partner is an independent risk factor for women's subsequent drug and alcohol use. In fact, partner's alcohol use is the only one of the psychosocial variables examined that was significantly predictive of a woman's subsequent alcohol use. This finding underscores the importance of research on the role of alcohol in the course of partner violence.

Since women in abusive relationships remained nearly three and one-half times more likely to subsequently abuse drugs after adjustment for all these variables, the study also suggests that some other unexamined variables may account for this relationship. We confined our analysis to PTSD, for example, while future research might explore other indicators of emotional distress potentially associated with both partner violence and substance use, such as depression, anxiety or helplessness. The relationship between women's health problems associated with trauma and substance abuse is another potentially fruitful area for future research. Although this study looked exclusively at illicit drug use, the use and abuse of prescription drugs, especially as they relate to health and mental health consequences, including later illicit drug use, should also be examined. While the findings contained in this study help assess the relative roles of the three correlates examined, they highlight the importance of further research examining more complex theoretical models.

This study also focused exclusively on the impact of partner violence on *later* substance use. It did not explore the impact of substance abuse on later partner violence or the contemporaneous interplay of physical force and substance use in violent relationships. Although we asked women about all past experiences with partner violence, we asked about the drug and alcohol habits of only the current or most recent partner at baseline. Thus, it is possible that substance-using partner and the violent partner are not the same person. Experience with violent partners may have preceded experiences with substance-using partners, eliminating our ability to explore whether these experiences, occurring contemporaneously, have a synergistic effect on women's likelihood of substance use.

Despite these limitations, the study findings have important implications for programs and public policies. Programs serving substance-abusing women need to better understand the impact of trauma on health and mental health. Treatment may be compromised if issues related to childhood abuse, its interaction with PTSD, and adult partner violence are not identified (Kovach, 1986; Brown, 1991; Rose, 1991; Finkelstein, 1993). In addition, a woman and her child's safety may be intimately connected with this healing. Treatment providers remind us that safety and sobriety often go hand in hand.

Study findings also underscore the importance of addressing the contribution of partner's drug and alcohol use to victimized woman's subsequent use of substances. Treatment strategies for substance-abusing women must include work on acknowledging violence and developing healthy, nondestructive relationships (Finkelstein, 1994). Work with the offending partner may be appropriate, especially if the partner is to continue to be a part of the woman's life. Substance abuse may make it more difficult, however, for a woman to leave an abusive relationship because of her more limited resources, financial dependence and compromised level of

functioning. Lack of recognizing and addressing violence by caregivers may contribute to women's sense of helplessness, despair and potentially increasing violence (Finkelstein et at., 1990). Finally, caregivers need to better support women's roles as mothers. It is critical that treatment programs understand the way in which both substance abuse and violence affects their clients' view of themselves as mothers and their relationship to their children. Research findings that have identified childhood victimization as a significant risk factor for adult substance use suggest the importance of preventive initiatives that begin in early childhood and demand targeted treatment for child victims.

On the policy level, the complex interaction and contribution of the correlates discussed above to later substance use suggest the need for complex solutions. Multiple systems including health, mental health, substance abuse, battered women's services, criminal justice and child welfare must be brought together to develop and fund preventive strategies and integrated interventions. Improved coordination and trauma informed cross-system training is critical to increased awareness of the role of partner violence and childhood sexual molestation/PTSD in the etiology of drug abuse, and to the development of more comprehensive services that meet families real needs.

TABLE 1.Characteristics of sample, and correlates of physical violence by male partners, illegal drug use, and problematic alcohol use.

Characteristic	n	%	Lifetime physical violence by male partners (%)	p	Follow-up illegal drug use (%)	p	Follow-up prob. alcohol use (%)	p
Age								
<20 years	55	19.8	52.7	0.31	18.2	0.48	18.2	0.60
20-<30 years	129	46.4	62.8		18.6		24.8	
30+ years	94	33.8	65.9		12.8		24.5	
Ethnicity								
White	116	41.7	66.4	0.001	17.2	0.08	27.6	0.27
Black	52	18.7	78.9		26.9		28.9	
Puerto Rican	88	31.7	48.9		10.2		17.0	
Other	22	7.9	45.5		13.6		18.2	
Education								
High school	152	54.7	57.2	0.11	13.2	0.09	20.4	0.20
< High school	126	45.3	66.7		20.6		27.0	
Marital status								
Never married	192	69.1	58.3	0.10	18.7	0.14	20.3	0.07
Ever married	86	30.9	68.6		11.6		30.2	
Housing status								
Homeless	132	47.5	66.7	0.09	23.5	0.003	23.5	0.97
Housed	146	52.5	56.9		10.3		23.3	
Severe physical violence by childhood caregivers								
Yes	182	65.5	70.3	0.001	18.7	0.19	23.1	0.87
No	96	34.5	44.8		12.5		24.0	
Sexual molestation in childhood								
Yes	127	45.7	79.5	0.001	22.0	0.02	26.0	0.35
No	151	54.3	46.4		11.9		21.2	
Lifetime physical violence by male partners								
Yes	171	61.5			23.4	0.001	25.7	0.24
No	107	38.5			5.6		19.6	
PTSD								
Yes	106	38.1	77.4	0.001	24.5	0.005	25.5	0.52
No	172	61.9	51.7		11.6		22.1	
Drug use by male partner								
Yes	71	25.5	76.1	0.004	25.4	0.02	25.4	0.65
No	207	74.5	56.5		13.5		22.7	
Alcohol use by male partner								
Yes	64	23.0	78.1	0.002	28.1	0.004	37.5	0.002
No	214	77.0	56.5		13.1		19.2	
Follow-up illegal drug use								
Yes	46	16.5	87.0	<0.001			50.0	0.001
No	232	83.5	56.5				18.1	
Follow-up alcohol use								
Yes	65	23.4	67.7	0.24	35.4	0.001		
No	213	76.6	59.6		10.8			

Table 2. Predictors of illegal drug use, adjusted for demographic factors.

Predictor	Models 1a-f*			Model 2			Model 3			Model 4		
	OR †	95% CI§	P	OR	95% CI	P	OR	95% CI	P	OR	95% CI	p
Child physical violence	1.24	0.58-2.64	0.58									
Child sexual molestation	1.89	0.96-3.74	0.07	0.69	0.23-2.10	0.51	0.55	0.18-1.70	0.30	0.62	0.20-1.94	0.41
PTSD	2.31	1.17-4.57	0.02	0.74	0.19-2.89	0.66	0.57	0.14-2.32	0.44	0.43	0.10-1.83	0.25
Child sexual molestation-by-PTSD interaction				5.36	0.94-30.68	0.06	5.80	0.99-34.04	0.05	6.72	1.11-40.72	0.04
Physical violence by male partners	4.57	1.79-11.68	0.002				3.93	1.47-10.49	0.006	3.47	1.28-9.42	0.01
Partner drug/alcohol use	3.04	1.53-6.06	0.002							2.79	1.34-5.79	0.006
Respondent's baseline drug use	6.21	2.93-13.14	0.0001									

Predictor	Model 5†		
	OR	95% CI	P
Child physical violence			
Child sexual molestation	0.66	0.21-2.11	0.49
PTSD	0.48	0.11-2.10	0.33
Child sexual molestation-by-PTSD interaction	4.97	0.79-31.31	0.09
Physical violence by male partners	2.98	1.08-8.23	0.04
Partner drug/alcohol use	2.32	1.08-4.99	0.03
Respondent's baseline drug use	4.62	2.08-10.26	0.0002

* Models 1a-e: Each predictor is individually modeled.
† OR= odds ratio
§ CI = confidence interval

Table 3. Predictors of illegal drug use, final model.

Predictor	OR	95% CI	P
Age			
<20 y	1.10	0.31-3.77	0.88
20-<30 y	1.56	0.62-3.93	0.35
30+	1.00		
Ethnicity			
White	1.00		
Black	1.01	0.38-2.65	0.99
Puerto Rican	0.56	0.20-1.56	0.27
Other	1.41	0.30-6.68	0.66
High school graduate/GED	0.47	0.21-1.07	0.07
Never married	2.05	0.79-5.30	0.14
Homeless	1.60	0.72-3.57	0.25
Child sexual molestation	0.66	0.21-2.11	0.49
PTSD	0.48	0.11-2.10	0.33
Child sexual molestation-by-PTSD interaction	4.97	0.79-31.31	0.09
Physical violence by male partners	2.98	1.08-8.23	0.04
Partner drug/alcohol use	2.32	1.08-4.99	0.03
Respondent's baseline drug use	4.62	2.08-10.26	0.0002

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Chapter Three

The Impact of Recent Partner Violence on Poor Women's Capacity to Maintain Work

The Better Homes FUND
Help for Homeless Families

REPRINT

The Impact of Recent Partner Violence on Poor Women's Capacity to Maintain Work

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The Impact of Recent Partner Violence on Poor Women's Capacity to Maintain Work

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Recent changes in welfare policy that require women to work have been particularly controversial for survivors of partner violence. This article explores the relationship between partner violence and work through time in an ethnically diverse longitudinal sample of 285 extremely poor women. Controlling for a variety of factors, women who experienced physical aggression/violence by male partners during a 12-month period had only one third the odds of maintaining employment for at least 30 hours per week for 6 months or more during the subsequent year as did women without these experiences. The study has important implications for welfare-to-work programming and public policy.

Recent interest in research on partner violence in the lives of poor women has been spurred in part by the shift in public policy reflected in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). Replacing a 60-year federal commitment to income support for poor single mothers with dependent children, the new law gives states sweeping authority

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to determine eligibility and provide assistance. Putting women to work is at its core. It establishes time limits that mandate work after 2 years or, in some states, 2 months, and creates a lifetime cap of 5 years for receiving public assistance. These changes have been especially controversial for survivors of partner violence. Battered women's advocates early on raised the concern that the new law might keep some women from leaving violent situations, encourage others to return to dangerous intimates, and penalize women for circumstances that they did not have the power to change. In addition, controversy over the potential impact of the new law raised practical questions about the number of women victims in the welfare caseload, their unique psychosocial characteristics and needs, and the relationship between partner violence and women's capacity to work. Despite the proliferation of research on violence by intimates in the last 20 years (Gelles & Conte, 1990), there remains a critical need for basic information about the impact of violence in poor women's lives.

VIOLENCE BY INTIMATES AGAINST WOMEN LIVING IN POVERTY

It has been assumed that women living in poverty are exposed to higher levels of physical threat and victimization than are women in more economically secure circumstances. Only recently have empirical researchers documented the prevalence and severity of violence against low-income populations. Although there has been an explosion of knowledge on the victimization of women and children that began with the rediscovery of child abuse in the 1960s (Gil, 1970; Kempe, Silverman, Steele, Droegemueller, & Silver, 1962; Steele & Pollock, 1968) and the rape and battered women's movements in the 1970s (Schechter, 1982), researchers were slow to focus on impoverished women and children. Until the mid-1990s, almost no inquiries focused on the prevalence of physical and sexual assault in community-based populations of low-income women (see Browne & Bassuk, 1997, for a review). This is a serious gap in our knowledge base because physical and sexual violence may be one of the most serious traumas women in poverty face. A recent report by the Bureau of Justice

Statistics states that women living in households with annual incomes below $10,000 are four times more likely to be violently attacked, most often by intimates, than women in households above this income level (Kaplan, 1997).

The best sources of national data on violence by intimates against women and children living in poverty are the National Family Violence Surveys (NFVS). Although physical abuse of women and children was found at all socioeconomic levels, the prevalence of assault and severe assault was higher for women and children living below the federal poverty line. For example, in the 1985 NFVS, the rate of severe violence toward children was 47% higher in households with incomes of less than $10,000 than in households with higher annual incomes (Wolfner & Gelles, 1993). In addition, although women in higher socioeconomic categories experienced similar levels of "minor" assaults (such as pushing and slapping) from intimate male partners, women whose male partners had less socioeconomic security or who were unemployed were at greater risk of severe assaults from those intimates (Hotaling & Sugarman, 1990). Although these findings document an elevated lifetime risk of severe victimization for low-income women and children, only 11% of the sample were living below the poverty level. Most other data on women and children in households have been based only on officially-reported cases (e.g., the U.S. Department of Health and Human Services [1996]) or used very limited measures of violent behaviors (e.g., the U.S. Department of Health and Human Services [1995]).

Recent comprehensive research on trauma histories among extremely poor single mothers suggests that lifetime rates of severe physical and sexual victimization are even higher than previously assumed. For example, a recent study of 216 housed low-income single mothers and 220 homeless single mothers in a midsized Northeastern city was conducted between August 1992 and November 1995 (the Worcester Family Research Project, WFRP) (Bassuk et al., 1996). Because homeless families in Worcester rarely live on the streets, homeless mothers were recruited from all the city's emergency and transitional family shelters as well as from the two welfare motels used to house homeless families. The comparison group of low-income housed mothers was randomly

selected from women who visited the Department of Public Welfare. *Severe physical violence* was defined as the occurrence of at least one of the following: being kicked; slapped six or more times (for partner violence); bitten or hit with a fist; hit with an object; beaten up; burned or scalded (for parental violence); choked, strangled, or smothered (for partner violence); threatened or assaulted with a knife or gun; or having one's life threatened in some other manner.

On average, women in this sample were 27 years old. Approximately 39% of the women were non-Hispanic White, 37% of the women were Puerto Rican, and 17% of the women were African American. Although faced with so many crises that violence was often not the first thing they mentioned when questioned about difficult circumstances, about two thirds (63%) of both housed and homeless single mothers had experienced severe physical assault by parents or other caretakers while growing up. More than 40% had been sexually molested at least once before reaching adulthood, and 60% had experienced severe physical violence by an intimate male partner as adults. Nearly one third of all respondents had been severely physically attacked by their current or most recent partner. In addition to the physical violence, about one fifth of all women in the sample had been threatened with death by their current or most recent intimate partner; more than one fifth reported that their current or most recent partner had threatened to commit suicide (Browne & Bassuk, 1997). For many respondents, categories of victimization overlapped with different types of experiences and assailants in their lives. The majority of women in both groups had experienced only brief periods of safety. Although homeless mothers have been considered to be at special risk for victimization when compared to housed mothers struggling with poverty, the lifetime experiences of severe victimization faced by low-income housed women placed them in virtually the same risk category. In the combined sample, only 16% of the women had *not* been severely physically attacked or sexually assaulted in their lifetime. These housed mothers were not drawn from an unusual population of low-income women; their only distinguishing characteristic was that they received Aid to Families with Dependent Children (AFDC).

PARTNER VIOLENCE AGAINST WOMEN ON WELFARE AND ITS IMPACT ON THEIR CAPACITY TO WORK

A small but growing body of research on partner violence against women welfare recipients has developed in tandem with recent public momentum for reforming the welfare system. Beginning in the mid-1990s, a picture of the pervasiveness of partner violence in the lives of welfare recipients began to emerge through reports from grassroots, welfare-to-work, and job training providers (e.g., Curcio, 1997; Raphael, 1995, 1996) and more recently through empirical research (Allard, Albelda, Colten, & Cosenza, 1997; Browne & Bassuk, 1997; Curcio, 1997; Lloyd & Taluc, 1997; Salomon, Bassuk, & Brooks, 1996). These data supported the high rates of violence found in the WFRP. For example, Lloyd and Taluc (1997), in a random survey of 824 women in a low-income neighborhood in Chicago (average income $18,000), found that although rates of current partner violence (past 12 months) were high for the entire neighborhood sample (12%), they were nearly three times as high for recipients of AFDC (31%). A University of Massachusetts statewide random sample of 734 welfare recipients reported current rates of intimate partner violence at 20% and lifetime rates at 64% (Allard et al., 1997). Although a study conducted by the Passaic County Board of Social Services found lower rates of current physical abuse (14.6%), possibly due to respondent reluctance to divulge abuse to a state social services agency, the lifetime rate—57.3%—was comparable to rates in other studies (Curcio, 1997).

In addition to documenting extremely high rates of partner violence in the lives of AFDC recipients, recent research has focused on the relationship between partner violence and a woman's capacity to obtain and maintain work. Early qualitative research by the Taylor Institute compiled anecdotes about the impact of violence on women's capacity to participate in job training programs or to maintain employment. Obstacles presented by threatening partners included sabotage (e.g., destroying work, educational materials, or clothing, or bruising the woman's face), stalking, menacing the work site, traumatic aftereffects of violence, and even two documented murders when battered women neared financial independence (Raphael, 1996). Similar to this, both the Passaic County Study (Curcio, 1997) and the University

of Massachusetts study (Allard et al., 1997) found that women who are current victims of partner violence report substantially more interference with work or training programs by male intimates than did women who are not victims.

Recent in-depth research has begun to paint a more textured picture of the complex relationship between partner violence and women's work. For example, Lloyd and Taluc's (1997) cross-sectional study found that women who reported partner violence did not differ significantly on current employment status from those who reported no partner violence. However, they were more likely to (a) miss days of work, (b) have been unemployed in the past, and (c) report mental and physical health problems that could affect job performance and employment status. After supplementing the original survey data with later interviews, Lloyd and Taluc concluded that some women worked less because of partner violence or stayed home to protect their children, but others increased their work hours in an attempt to reduce their reliance on abusive partners and to escape the relationship (Lloyd & Taluc, 1997). In cross-sectional analyses, Salomon and her colleagues (1996) found that women who cycled on and off AFDC were more likely to have worked in the past and to have extremely high levels of violence in their lives than women who had been on AFDC for one time only. In addition, they found a strong association between long-term welfare use (5 years or more) and lifetime experiences of partner abuse (Salomon et al., 1996). These data suggest that the pervasiveness of violence in the lives of women on AFDC interferes with some women's capacity to remain financially independent over time, and it may contribute to the need to return periodically to some form of public assistance. However, to date, no cross-sectional empirical studies of work patterns in extremely poor women's lives have documented a relationship between current or recent partner violence and ability to maintain work (Brooks & Buckner, 1996; Lloyd & Taluc, 1997; Salomon et al., 1996).

Studies of demonstration programs within the Job Opportunities and Basic Skills Training Program (JOBS) and state waiver experiments provide some information on possible effects of work requirements (see Besharov, Germanis, & Rossi, 1997, for a review of existing studies). Although these evaluations provide very limited data on violence as a barrier to work, they do suggest

that current strategies that (a) impose strict time limits on benefits, (b) require speedy entry into the workforce, and (c) impose tough sanctions for noncompliance, will not be effective for all recipients, especially those with a diverse set of personal and family challenges (Pavetti, Olson, Nightingale, Duke, & Isaacs, 1997). For example, in Minnesota where penalties for noncompliance with work requirements were a feature of its waiver, a review of recipients' characteristics revealed that sanctioned families were twice as likely to report family violence, twice as likely to report mental health problems, three times as likely to report family health problems, and four times as likely to report substance abuse as families who maintained compliance (Minnesota Department of Human Services, 1996).

In sum, the combination of early empirical research with anecdotal information compiled by the Taylor Institute has heightened concerns that welfare reform legislation might transform welfare from a program that intends to protect women and children into a program that provides neither adequate protection nor the support necessary to obtain and maintain work (Bassuk, Browne, & Buckner, 1996; Handler & Hasenfeld, 1997; Wilson, 1996). The PRWORA addressed this concern in two ways. It incorporated a hardship exemption, allowing 20% of a state's caseload to be exempted from time limits. The definition of *hardship* included battering and extreme cruelty (PRWORA, 1996, Sec. 103-Sub. Sec. 408, (7)(C)(1) and (iii)). In addition, the Family Violence Option (FVO) provided states an opportunity to require certain standards and procedures, including screening welfare recipients for current danger from a violent intimate; referral to counseling and support services; and exemptions of requirements such as time limits, residency, child support enforcement, and family cap provisions when compliance jeopardized escape from a violent partner or unfairly penalized victims (Institute for Women's Policy Research, 1997). At the time of this article, 31 states have adopted the FVO; an additional 9 states have provisions for violence programs and services in their welfare plans. Ten states are working on an implementation plan (Raphael, 1999, this issue). Because states are given considerable latitude in implementing the amendment, it is not yet clear whether the FVO will achieve its aim of securing the time and services women with violent partners need to transition successfully from assistance to work.

GOALS OF THE PRESENT STUDY

The studies completed thus far suggest some of what is needed to respond effectively. However, research has not been done on the impact of partner violence on poor women's capacities to maintain work over time while controlling for other relevant domains that may also affect work (e.g., resources such as education, child care, and transportation; and mental and physical health). Such research is critically needed. The analyses reported here begin to fill this gap, taking advantage of a longitudinal research study with comprehensive data across multiple domains in the lives of an ethnically diverse sample of impoverished single mothers. The analyses reported here were designed to (a) determine the 12- and 24-month prevalence of violence by intimate partners in extremely poor women's lives; (b) describe bivariate relationships between demographic characteristics, resources related to work, mental and physical health, and work and violence in a 12-month period; and (c) examine longitudinally the relationship between recent or current partner violence and women's ability to obtain and maintain work in a 12-month period, controlling for variables with significant relationships to work and/or violence in bivariate analyses. The research question is whether there is an association between recent partner violence and work among extremely poor women. More specifically, Are extremely poor women at recent risk of partner violence less likely to maintain work than extremely poor women without recent experiences of partner violence?

METHOD

SETTING

Data for these analyses are drawn from the WFRP (Bassuk et al., 1996). The WFRP was a comprehensive inquiry into the lives of 220 homeless and 216 low-income housed (never homeless) mothers and 627 of their dependent children in Worcester, Massachusetts. Most prior studies of homeless and extremely poor mothers were conducted in large urban metropolises such as Boston (Bassuk & Rosenberg, 1988; Bassuk, Rubin, & Lauriat, 1986; Friedman, Hayes, McGah, & Roman, 1997), Chicago (Lloyd &

Taluc, 1997), Los Angeles (Koegel, Burnam, & Farr, 1988), and New York (Shinn, Knickman, & Weitzman, 1991)—cities not necessarily representative of smaller-sized cities and towns. Located in central Massachusetts, Worcester is the state's second-largest city, with a population of 169,000. An important industrial center in the 19th- and early 20th-centuries, Worcester's job base has eroded. Typical of U.S. cities of this size, 15% of Worcester's residents now live below the federal poverty level. Thus, Worcester in the 1990s provides a useful composite of problems facing low-income female-led households in small or midsized postindustrial U.S. cities.

The WFRP was longitudinal in design, with two follow-up interviews at approximately 12 and 24 months after the baseline interviews. Total interviewing time for the baseline interview with each mother was 10 to 12 hours. Follow-up interviews each took about 2 hours to complete.

RESPONDENTS

The project used an unmatched case-control design to recruit a sample of homeless single heads of families and a comparison group of low-income housed female heads of households. Because of our selection criteria, the majority of respondents—94%—were receiving AFDC at the time of enrollment. A total of 220 homeless families were recruited from all nine of Worcester's emergency and transitional shelters and its two welfare motels (3.2% of the sample) between August 1992 and July 1995. All homeless women who had been in shelter for a least 7 days and were pregnant or had custody of at least one dependent child younger than age 17 were asked to participate in the study. Worcester's maximum shelter capacity is approximately 70 families. Additional families were enrolled as they became homeless.

Project staff notified women about the purpose and procedures for the study at house meetings, through flyers, and in informed consent forms. Women were told they had the right to leave the study at any time and that they could refuse to answer any question or section of the interview. They were also informed that participation in the study had no bearing on their receipt of benefits, shelter, or services. Enrollment was conducted in person by inter-

viewers on site, providing an additional opportunity to allow women to ask any questions they might have about the study or their participation. Of the homeless mothers approached, 72% agreed to be in the study. Three quarters of the 220 homeless families interviewed had spent less than 18 weeks in shelter at the time of enrollment (median: 8 weeks). For more than 75% of the families, this was their first experience of homelessness.

The comparison group of low-income housed mothers was randomly selected from women who visited Worcester's Department of Public Welfare Office either to redetermine their welfare eligibility or to discuss other issues with their caseworker. Project staff enrolled the comparison group by approaching women directly at the Department of Public Welfare office, with enrollment efforts staggered over days and times to ensure the broadest selection of respondents; 62% of women approached agreed to participate. Once again, in-person enrollment provided an opportunity for the project staff to inform participants of their rights and to answer any questions they might have about the study purposes and procedures.

To be eligible for enrollment, mothers had to have no history of homelessness, which was defined as having spent more than 7 consecutive nights in a shelter, car, public park, abandoned or nonresidential building, or other nondwelling (McKinney Homeless Assistance Act, 1987); be pregnant or have custody of at least one dependent child younger than 17 years of age; and be currently receiving AFDC. The comparison group resided in both public and private housing.

Some data were collected on the 141 homeless and 178 housed mothers who refused to participate in the study or who did not complete the multiple baseline interview sessions. No differences were found between those women and the baseline sample in terms of age, marital status, education, number of children, or welfare use. Mothers in both the homeless and housed groups are comparable to Worcester's broader AFDC population in terms of age, race, and ethnicity. However, when contrasted with women receiving AFDC throughout the United States, the proportion of Hispanics in the WFRP was much greater (42% vs. 18%) and the number of Blacks much lower (10% vs. 45%) than the national average (U.S. Bureau of the Census, 1994).

LONGITUDINAL STUDY

Of the 436 women in the baseline study, 356 were reinterviewed between May 1994 and November 1996 (Follow-up 1), and 327 were again reinterviewed between September 1995 and August 1997 (Follow-up 2). In this report, we focus on the 285 women who completed both follow-up interviews and who had no missing data on the two domains of interest—partner violence and work history. Comparisons were made between these 285 completers and the 151 women who did not complete both longitudinal follow-up interviews with no missing data on the variables of interest. There was no relationship between completion status and the following baseline variables: age, marital status, yearly income, number of children, lifetime history of partner violence, and having worked at all during the past 5 years. Women who were homeless at baseline, Puerto Ricans, and those with less than 12 years of education were less likely to be completers than initially housed women, non-Hispanic Whites, and high school graduates, respectively.

PROTOCOL AND SETTING

A structured interview consisting of original question sets as well as existing instruments was used in each time period to obtain detailed information across multiple domains including education, work, income and entitlements, and housing history; family composition and early life experiences; histories of physical and sexual victimization; mental and physical health; and service utilization and needs. Criteria for instrument selection included prior use with people of color and with low-income or homeless populations, ease of administration in shelter settings, and demonstrated validity and reliability. The entire protocol was translated into Spanish and reviewed by bilingual and bicultural translators. Because of the high percentage of Puerto Rican Spanish-speaking participants and the clinical nature of many of the protocols, the translation team consisted of a Puerto Rican clinician and Puerto Rican translators. If a Spanish translation already existed for an instrument, project translators reviewed it for appropriateness for Puerto Rican respondents. All participants were provided an opportunity to choose whether to com-

plete the interview in English or Spanish. Bilingual interviewers were available for those respondents who wished to complete the interview in Spanish.

Because of the sensitive nature of many of the questions, all interviews were conducted by highly trained women professionals. Each shelter provided a private interviewing space for interviews of homeless mothers at baseline; housed women were interviewed either at home or in a project office, depending on privacy considerations. The majority of the respondents were interviewed at the follow-up stage by the same interviewers who conducted their interviews at baseline.

MEASURES

Physical Aggression/Violence

The physical aggression scale of the Conflict Tactics Scales (CTS) (Straus, 1979, 1990) was used to obtain data on physically violent actions by intimate male partners in adulthood. Items present behavioral descriptions of physically aggressive acts, with a yes/no or a frequency response for each item. Developed in the United States in 1971, the CTS has since been employed in hundreds of studies, including two national surveys of more than 8,000 respondents. Numerous indicators of reliability, construct and criterion validity, and independence from social desirability effects have been demonstrated in research by Straus (1990) and others. Contextual questions on injury, need for medical intervention, and post-assault outcomes were also asked for violence by intimate male partners.

Following other researchers (Lloyd & Taluc, 1997; Straus, 1979, 1990), data were analyzed using both a more general definition of aggression and a restricted definition. *Physical aggression* by male partners was defined as the occurrence of one more of the following: being pushed, grabbed, or shoved; slapped; kicked, bit, or hit with a fist; hit with an object; beaten; choked, strangled, or smothered; threatened or assaulted with knife, gun, or automobile; or forced to have sex or perform sexual acts against one's will. *Physical violence*—the more restrictive definition—was defined similarly, except that "pushed, grabbed, or shoved" was not included. This

report focuses on physical aggression/violence by male partners occurring during the 12 months that preceded the first follow-up interview, hereafter referred to as "recent" aggression/ violence.

Work

A detailed battery of questions concerning employment history in the years between the baseline and each of the follow-up interviews was asked, using a modified version of the Personal History Form (Barrow et al., 1985). The Personal History Form, an instrument designed for use with homeless and low-income people, was administered to gather information pertaining to housing, income, jobs, and service utilization. For purposes of these analyses, work histories have been quantified along two dimensions: total number of months per year worked and hours per week worked. The time frame of focus in this report is the 12-month period between the first and second follow-up interviews.

Covariates

Covariates were selected based on evidence from earlier empirical literature of a relationship between these variables and violence (Bassuk et al., 1996; Browne, 1993a, 1993b) and/or these variables and work (e.g., Brooks & Buckner, 1996; Olson & Pavetti, 1996). The following variables were examined as potential confounders of the relationship between recent physical aggression/violence (i.e., physical aggression/violence occurring between baseline and the first follow-up interview) and subsequent work patterns (i.e., employment status between the first and second follow-up interviews). Except as noted, variables were measured at the first follow-up interview.

Sociodemographic Factors

Sociodemographic factors included housing status at baseline, respondent's age, ethnicity/race (White/Black/Puerto Rican/ other), educational level (high school degree or general equivalency diploma [GED] vs. none), marital status (never vs. ever married), number of children at baseline, monthly income, and

employment history prior to the baseline interview. The latter variable was assessed by asking whether the respondent had worked at least 10 hours per week for at least 3 months during the 5 years preceding the initial interview.

Mental Health

Current psychological distress was measured with the Brief Symptom Inventory (BSI) (Derogatis, 1993). The BSI measures psychiatric symptomatology in the past week across nine dimensions: somatization, obsessive-compulsive traits, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The Global Severity Index (GSI) is a summary score for the BSI reflecting the number of symptoms and intensity of perceived distress. Mental health service utilization was assessed by asking whether the respondent had spoken with a medical or mental health professional about nerves or emotions in the past 6 months or had been hospitalized for a mental health problem in the past year.

Substance Use

Problematic alcohol use was defined as four or more drinks per day at least two to three times per week over the past year or six or more drinks on at least one occasion during the past month. Illegal drug use was defined as any use of cocaine, heroin, amphetamines, or barbiturates in the past year (marijuana was excluded). Alcohol/drug problems were defined as the occurrence of either problematic alcohol use or any use of illegal drugs. Respondents who had spoken with a medical or mental health professional about alcohol/drug problems in the past 6 months, had an alcohol/drug-related hospitalization in the past year, had undergone alcohol/drug detoxification, or had participated in a residential alcohol/drug program were coded as having received substance-related services.

Physical Health

The Physical Functioning Scale of the Short-Form Health Survey (Ware, Snow, Kosinski, & Gandek, 1993) was used to detect

compromised physical functioning. This 10-item scale asks whether on a typical day, routine activities such as climbing a flight of stairs or carrying groceries are curtailed due to health reasons. Following Ware et al., respondents scoring below a standardized score of 60 on the scale were considered to have physical limitations due to poor health. Respondents also were asked whether they had had an accident or injury requiring medical attention, had visited an emergency room, had a scheduled outpatient visit, or had been hospitalized for a nonmental health reason in the year prior to interview.

Resources Necessary to Obtain or Keep Work

Respondents were asked whether they had received the following services in the year prior to interview: child care, transportation, job training, job placement services, or additional education.

Sources of Income

Respondents were asked whether they had received benefits from each of the following government programs in the last year: AFDC; food stamps; Women, Infants, and Children (WIC) program; Supplemental Security Income (SSI); and housing subsidy or child care subsidy. In addition, receipt of financial support from a family member or partner (including child support) was assessed.

Childhood Experiences

At baseline, respondents were asked about childhood experiences, including whether they had ever experienced an out-of-home placement. *Out-of-home placement* was defined as having been placed in foster care, an adoptive home, an institution, or being sent to live with other relatives. *Physical violence by childhood caretakers* was assessed with the CTS and was defined as the occurrence of at least one of the following before age 18: being kicked, bitten, or hit with fist; hit with an object; beaten; burned or scalded; threatened or assaulted with a knife or gun; or having one's life threatened in some other manner. *Childhood sexual moles-*

tation was defined as the occurrence, before age 18, of "any kind of sexual advance or unwanted sexual experience" by any adult or other individual older than the respondent. (For more detail on the definition of child physical violence and child sexual molestation, see Browne & S. Bassuk, 1997).

ANALYSIS

Twelve- and 24-month physical aggression/violence prevalence estimates are presented for the total sample of extremely poor women, as well as by subsequent employment history estimates. Chi-square and Fisher's exact tests were used to assess the statistical significance of the crude relationship between violence and employment history. We also used these techniques to examine the relationship between violence and other categorical covariates and between work and other categorical covariates. The relationship between violence and work and continuous or ordinal covariates was assessed with *t* tests. Odds ratios and Wald tests from logistic regression modeling were used to estimate the association and test the significance of the relationship between recent violence and subsequent work patterns while controlling for potential confounders. Demographic, psychosocial, and health variables that were significantly associated at $p < .10$ with recent partner violence and/or subsequent employment history were considered to be potential confounders of the violence-work relationship and were therefore included in the multivariate model.

RESULTS

CHARACTERISTICS OF THE SAMPLE

Women in this sample were fairly young, with an average age of 29. Of the sample, 42% were non-Hispanic White, 32% were Puerto Rican, 17% were Black, and 8% were of other ethnic backgrounds. Nearly half of the sample (47%) had been homeless at baseline. More than half (58%) had graduated from high school or earned a GED. Respondents had an average of two children; 67% had never married.

PREVALENCE OF PHYSICAL AGGRESSION/VIOLENCE

For the 24-month period from the initial baseline interview through Follow-up 2, more than 40% of this sample of extremely poor mothers experienced physical aggression by a male partner (see Table 1). Using the more restrictive definition of physical violence, nearly 30% had experienced at least one severe physical attack or threat during the 2-year time frame. Although earlier analyses of baseline data revealed no significant differences between homeless and housed women in the prevalence of physical violence by intimate male partners (Browne & Bassuk, 1997), some differences were found at Follow-up 1, Follow-up 2, and in the combined 24-month follow-up period. In all comparisons, mothers who had been homeless at baseline were significantly more likely to experience physical aggression and somewhat more likely to experience physical violence than mothers who had been housed at baseline.

RECENT PHYSICAL AGGRESSION/VIOLENCE AND SUBSEQUENT EMPLOYMENT STATUS

To investigate the relationship between physical aggression/violence by male partners and women's capacity to obtain and maintain work, a lagged analysis was conducted, using violence histories in the first 12-month follow-up period to predict employment status during the subsequent 12-month period. A lagged analysis was chosen to ensure that experiences with physical aggression/violence preceded the work experiences. Because differences were not strong between housed and homeless women at Follow-up 1 (with respect to the more restrictive physical violence definition at the center of our inquiry), data were collapsed across housing status in subsequent analyses. All data were analyzed both for physical aggression and physical violence. Multiple definitions of work experience also were considered in these analyses, due to our a priori hypothesis that aggression/violence might more strongly affect women's ability to maintain consistent employment over time at some minimum number of hours per week.

In accordance with our prediction, the strongest relationships between physical aggression/violence during Follow-up 1 and

TABLE 1
Prevalence of Physical Aggression/Violence
by Baseline Housing Status at 12 and 24 Months

Time Period	*Overall* (n = 285) %	*Homeless* (n = 135) %	*Housed* (n = 150) %	p
12 months between baseline interview and Follow-up 1				
Physical aggression	24.6	30.4	19.3	.03
Physical violence	17.2	20.7	14.0	.13
12 months between Follow-up 1 and Follow-up 2				
Physical aggression	28.9	36.3	22.0	.008
Physical violence	20.0	24.4	16.0	.08
24 months between baseline interview and Follow-up 2				
Physical aggression	41.4	51.1	32.7	.002
Physical violence	29.5	35.6	24.0	.03

work status during Follow-up 2 were observed for more consistent work histories (see Table 2). Stronger relationships were generally found for work histories spanning 6 months or more for at least 20 hours per week (totals for months and hours per week worked are cumulative and may represent a variety of jobs held during that time). Compared to women who had not experienced partner aggression during Follow-up 1, women who had experienced recent physical aggression/violence were less than half as likely to work at least 30 hours per week for 6 months or more during the following year. The effect was even more pronounced for women holding full-time jobs (40 hours per week); women who had experienced recent physical aggression or violence were only about one fifth as likely to work full-time for 6 months or more during the following year as were women who had not experienced partner aggression/violence in the previous 12 months.

CHARACTERISTICS OF RESPONDENTS BY RECENT HISTORY OF PHYSICAL AGGRESSION/VIOLENCE

Although the bivariate analyses reported above suggest a relationship between recent physical aggression/violence by male

TABLE 2
Bivariate Relationships Between Recent Physical Aggression/Violence[a] and Subsequent Employment Status[b]

Employment Status in Past Year	Physical Aggression			Physical Violence		
	Yes (n = 70) %	No (n = 215) %	p	Yes (n = 49) %	No (n = 236) %	p
Work at all	61.4	58.6	.68	61.2	58.9	.76
Work						
> 10h/wk, 1+ month	58.6	57.7	.90	57.1	58.1	.91
> 20h/wk, 1+ month	52.9	52.6	.97	51.0	53.0	.80
> 30h/wk, 1+ month	45.7	45.1	.93	44.9	45.3	.96
> 40h/wk, 1+ month	38.6	31.2	.25	40.8	31.4	.20
Work						
> 10h/wk, 3+ months	51.4	47.4	.56	49.0	48.3	.93
> 20h/wk, 3+ months	45.7	43.7	.77	42.9	44.5	.83
> 30h/wk, 3+ months	37.1	35.4	.79	34.7	36.0	.86
> 40h/wk, 3+ months	31.4	25.6	.34	30.6	26.3	.53
Work						
> 10h/wk, 6+ months	24.3	37.2	.05	24.5	36.0	.12
> 20h/wk, 6+ months	20.0	33.0	.04	20.4	31.8	.11
> 30h/wk, 6+ months	12.9	28.4	.009	12.2	27.1	.03
> 40h/wk, 6+ months	4.3	21.4	.0005	4.1	19.9	.005
Work						
> 10h/wk, 9+ months	20.0	23.7	.52	22.5	22.9	.95
> 20h/wk, 9+ months	14.3	21.9	.17	14.3	21.2	.27
> 30h/wk, 9+ months	11.4	19.5	.12	12.2	18.6	.28
> 40h/wk, 9+ months	2.9	13.5	.01	4.0	12.3	.12
Work						
> 10h/wk, 12 months	8.6	15.4	.15	8.2	14.8	.26
> 20h/wk, 12 months	4.3	12.1	.07	2.0	11.9	.04
> 30h/wk, 12 months	2.9	10.2	.08	2.0	9.8	.09
> 40h/wk, 12 months	1.4	7.4	.08	2.0	6.8	.32

a. Between baseline and first follow-up interview.
b. Between first follow-up and second follow-up interview.

partners and reduced capacity in women to maintain consistent employment over time, it is possible that other factors could be responsible for the observed relationship. Thus, we examined cross-sectional associations between recent physical aggression/violence and multiple potential confounding variables.

As shown in Table 3, women with a recent history of physical aggression/violence were significantly more likely to have never married. They were more likely to have a variety of medical and mental health problems, including having had an accident or

injury requiring medical attention and having been medically hospitalized in the year prior to the first follow-up interview. Also, they were more likely to report higher levels of psychological distress on the BSI, and to have spoken to a clinician regarding mental health problems in the 6 months prior to the first follow-up interview. In addition, women with a recent history of physical violence were more likely to report alcohol and drug problems. Early experiences with severe physical violence by childhood caretakers and sexual molestation in childhood were also more common among those with recent experiences with physical aggression/violence by male partners. This was especially true when the less restrictive definition of physical aggression was used. As might be expected, past experiences with violence by male partners (occurring before the baseline interview) were more common among those women who had experienced recent partner aggression or violence. Previous work history—that is, employment status in the 5 years prior to the baseline interview—was not significantly related to recent partner aggression or violence.

CHARACTERISTICS OF RESPONDENTS BY EMPLOYMENT STATUS

As a next step in examining potential confounders, we assessed the relationship between the covariates listed in Table 3 and employment status in the 12 months between Follow-up 1 and Follow-up 2. Table 4 reports the bivariate results in which work is defined as being employed for a minimum of 30 hours per week for at least 6 months during that year. In these analyses, ethnicity was a significant predictor of maintaining work, with Blacks being much more likely than non-Hispanic Whites or Puerto Ricans to work at this level. Housing status at baseline (homeless or housed) was not significantly related to work. Two health variables were significantly and negatively associated with work: a high level of psychological distress (as measured by the BSI) and having spoken with a clinician about mental health problems in the past 6 months. Having received child care, job training, job placement services, and a previous work history all were highly predictive of working at least 30 hours per week for a minimum of

TABLE 3
Demographic, Health, and Psychosocial Characteristics of Respondents by Recent History of Physical Aggression/Violence

Characteristic	Physical Aggression			Physical Violence		
	Yes	No	p	Yes	No	p
Demographic						
Age (y), mean	26.6	29.7	.005	27.3	29.3	.10
Race/ethnicity						
White	50.0	39.5	.32	51.0	40.0	.16
Black	18.6	16.7		22.4	16.0	
Puerto Rican	25.7	34.4		22.4	34.3	
Other	5.7	9.3		4.0	22.4	
High school graduate/GED	52.9	60.0	.29	55.1	58.9	.62
Never married	75.4	61.4	.04	79.2	61.9	.02
Number of children, mean	1.8	1.1	.002	1.9	2.3	.08
Employed during the 5 years prior to baseline interview[a]	52.9	53.5	.93	59.2	52.1	.37
Mental health						
BSI GSI, mean	1.10	0.66	.0001	1.23	0.68	<.0001
Spoke to clinician about nerves in past 6 months	47.8	35.5	.07	47.9	36.6	.14
Mental health hospitalization in past year	8.2	2.6	.07	10.0	1.4	.003
Substance use						
Problematic alcohol use	20.0	13.5	.19	22.4	13.6	.11
Illegal drug use	11.4	5.6	.10	16.3	5.1	.005
Alcohol/drug problems	27.1	16.7	.06	32.6	16.5	.009
Substance-related service utilization	10.0	16.2	.20	10.2	15.7	.33
Physical health						
Limited physical function	15.7	18.1	.64	20.4	17.0	.56
Accident/injury requiring medical attention in past year	21.1	12.7	.005	30.6	13.3	.003
Emergency room visit in past year	17.1	12.6	.33	14.3	13.6	.89
Had scheduled outpatient visit in past year	41.4	47.0	.42	49.0	44.9	.60
Nonmental health hospitalization in past year	12.9	7.9	.21	18.4	7.2	.01
Resources necessary to obtain/keep work received in past year						
Child care	58.6	45.6	.06	57.1	47.0	.20
Transportation	24.3	20.5	.50	20.4	21.6	.85
Job training	14.3	18.1	.46	12.2	18.2	.31
Job placement services	8.6	13.0	.32	10.2	12.3	.68
Additional education	32.9	31.2	.79	24.5	33.0	.24
Monthly income ($), mean	868	984	.06	863	975	.10

(continued)

TABLE 3 continued

Characteristic	Physical Aggression			Physical Violence		
	Yes	*No*	p	*Yes*	*No*	p
Income received in past year,						
Government benefits						
AFDC	94.3	97.7	.16	91.8	97.9	.03
Food stamps	94.3	93.0	.71	93.9	93.2	.87
Women, Infants, and Children program	64.3	57.2	.30	63.3	58.0	.50
Supplemental Security Income	11.4	11.6	.96	10.2	11.9	.74
Housing subsidy	50.0	46.1	.57	49.0	46.6	.76
Child care subsidy	28.6	25.6	.62	28.6	25.9	.69
Private source of revenue						
Family/friends/partners (including child support)	51.4	46.0	.43	46.9	47.5	.95
Childhood experiences						
Out-of-home placement	41.4	39.5	.78	38.8	40.3	.85
Foster care	16.2	12.6	.45	14.6	13.3	.81
Severe physical violence by childhood caretaker(s)	81.4	61.5	.002	77.6	64.1	.07
Sexual molestation	57.1	40.9	.02	57.1	42.3	.06
Adult experiences with violence						
Severe physical violence by intimate male partner occurring prior to baseline interview	72.5	58.2	.03	75.0	59.0	.04
Physical/sexual assault by nonintimates	23.5	18.0	.32	25.5	18.1	.24

NOTE: Values are in percentages unless otherwise indicated. GED = general equivalency diploma; BSI GSI = Brief Symptom Inventory, Global Severity Index; AFDC = Aid to Families with Dependent Children.
a. Worked at least 10 hours per week for at least 3 months in the 5 years preceding the baseline interview.

6 months. Similar to this, women who received financial support from family members and women who received government child care subsidies were more likely to work at this level. Childhood experiences with physical violence by parental caretakers, childhood sexual abuse, and prior experiences with severe violence by male partners were not directly associated with the capacity to maintain work. The above analyses were replicated, defining work as a minimum of 20 hours or 40 hours per week for at least 6 months during that year, and similar results were obtained (data not shown).

TABLE 4
Demographic, Health, and Psychosocial
Characteristics of Repondents by Employment Status

Characteristic	Work ≥ 30 hours/week for ≥ 6 months		
	Yes (n = 70)	No (n = 215)	p
Demographic			
Age (y), mean	28.3	29.1	.45
Race/ethnicity			
White	35.7	44.2	.002
Black	28.6	13.5	
Puerto Rican	21.4	35.8	
Other	14.3	6.5	
Homeless at baseline	42.9	48.8	.38
High school graduate/GED	64.3	56.3	.24
Never married	32.8	67.2	.65
Number of children, mean	2.0	2.3	.08
Employed during the 5 years prior to baseline interview[a]	70.0	47.9	.001
Mental health			
BSI GSI, mean	0.51	0.86	.0001
Spoke to clinician about nerves in past 6 months	21.4	44.1	.001
Mental health hospitalization in past year	4.2	1.4	.46
Substance use			
Problematic alcohol use	10.0	16.7	.17
Illegal drug use	5.7	7.4	.62
Alcohol/drug problems	14.3	20.9	.22
Substance-related service utilization	14.3	14.9	.90
Physical health			
Limited physical function	10.0	20.0	.06
Accident/injury requiring medical attention in past year	23.2	14.1	.08
Emergency room visit in past year	15.7	13.0	.57
Had scheduled outpatient visit in past year	41.4	47.0	.42
Nonmental health hospitalization in past year	7.1	9.8	.51
Resources necessary to obtain/keep work received in past year			
Child care	62.9	44.2	.007
Transportation	15.7	23.3	.18
Job training	42.9	8.8	.001
Job placement services	28.6	6.5	.001
Additional education	31.4	31.6	.98
Monthly income ($), mean	1,116	903	.0004
Income received in past year			
Government benefits			
AFDC	95.7	97.2	.53
Food stamps	91.4	94.0	.46

(continued)

TABLE 4 continued

Characteristic	Work ≥ 30 hours/week for ≥ 6 months: Yes (n = 70)	No (n = 215)	p
Income received in past year			
Government benefits			
Women, Infants and Children program	52.9	60.9	.23
Supplemental Security Income	7.1	13.0	.18
Housing subsidy	47.1	47.0	.98
Government benefits			
Child care subsidy	40.0	21.9	.003
Private source of revenue			
Family/friends/partners (including child support)	57.1	44.2	.06
Childhood experiences			
Out-of-home placement	42.9	39.1	.57
Foster care	10.3	14.5	.38
Severe physical violence by childhood caretaker(s)	71.4	64.8	.31
Sexual molestation	40.0	46.5	.34
Adult experiences with violence			
Severe physical violence by intimate male partner occurring prior to baseline interview	65.7	60.4	.43
Physical/sexual assault by nonintimates	23.2	18.1	.35

NOTE: Values are in percentages unless otherwise indicated. GED = general equivalency diploma; BSI GSI = Brief Symptom Inventory, Global Severity Index; AFDC = Aid to Families with Dependent Children.
a. Worked at least 10 hours per week for at least 3 months in the 5 years preceding the baseline interview.

MULTIVARIATE RELATIONSHIP BETWEEN RECENT PHYSICAL AGGRESSION/VIOLENCE AND SUBSEQUENT EMPLOYMENT STATUS

It is possible that the demographic, psychosocial, and health variables that were significantly associated with recent physical aggression/violence by male partners and/or subsequent employment history (as shown in Tables 3 and 4) could account for the observed relationship between employment status and recent experiences with aggression by male partners. To rule out this possibility, we next analyzed the data using logistic regression modeling. Using a conservative strategy, all variables exhibiting a relationship with either violence or work at a significance level of

$p < .10$ were entered into the model (see Table 5). Controlling for a variety of potential confounders, women who experienced physical aggression during the 12-month initial follow-up period had about one third the odds of working at least 30 hours per week for 6 months or more during the following year as did women who had not experienced such aggression (Model 1). Women who had experienced physical violence (the more restrictive definition) had less than one third the odds of maintaining work at this level, compared to women who had not experienced physical violence during the prior year (Model 2). As with the bivariate analyses, it was the recent (past 12 months) experiences with physical aggression/violence by male partners—rather than earlier partner violence (experiences that occurred prior to baseline)—that predicted reduced capacity to maintain work the subsequent year.

As suggested by earlier analyses, mental health variables (the BSI Global Severity Index and mental health service utilization) remained significantly and negatively associated with capacity to maintain work. Conversely, job training, use of job placement services, and past employment were strongly predictive of an enhanced work history. Somewhat surprisingly, women who reported having an accident or injury requiring medical attention were more likely to have worked. Although our data are not able to provide clarification for this finding, it is possible that women entering the workforce in entry or unskilled labor positions are at higher risk for injuries than women not involved in the workforce. It is also possible that returning to or participating in work exacerbates a male intimate's violence, leading to a higher injury rate.

Finally, it is worth noting that a similar conclusion about the relationship between partner violence and subsequent work history is obtained when a more parsimonious, empirically driven model-building procedure is employed. Using the stepwise selection algorithm in the statistical program SAS (SAS Institute, 1989; with the significance criterion for a given variable's entry into the model capped at $p = .10$ and for remaining in the model at $p = .05$), we found that physical violence by a recent partner emerged as a significant predictor of subsequent employment (odds ratio = 0.27, 95% confidence interval 0.10-0.78).

TABLE 5
Relationship Between Recent Physical Aggression/Violence and Subsequent Employment Status: Results of Logistic Regression

	Outcome: Employment status (Work ≥ 30 hours/week for ≥ 6 months)					
	Model 1: Includes Recent Physical Agression			*Model 2: Includes Recent Physical Violence*		
Characteristics	*Odds Ratio*	*95% Confidence Interval*	p	*Odds Ratio*	*95% Confidence Interval*	p
Homeless	1.31	0.58–2.99	.51	1.34	0.59–3.04	.49
Black (vs. White)	4.53	1.60–12.86	.005	4.80	1.69–13.65	.003
Puerto Rican (vs. White)	0.86	0.32–2.35	.77	0.80	0.30–2.20	.67
Other race (vs. White)	3.16	0.89–11.22	.08	3.05	0.88–10.61	.08
Age	1.03	0.96–1.12	.40	1.04	0.96–1.12	.38
Never married	0.97	0.36–2.60	.96	1.02	0.38–2.76	.97
Number of children	0.72	0.47–1.09	.12	0.73	0.48–1.11	.14
Employed during the 5 years prior to baseline interview[a]	2.24	1.00–5.03	.05	2.35	1.05–5.27	.04
Accident/injury requiring medical attention in past year	3.58	1.31–9.79	.01	3.74	1.36–10.27	.01
Nonmental health hospitalization in past year	1.69	0.43–6.67	.45	1.86	0.46–7.51	.38
Limited physical functioning	1.34	0.45–3.96	.60	1.41	0.48–4.14	.54
BSI GSI	0.56	0.27–1.16	.12	0.57	0.28–1.18	.13
Spoke to clinician about nerves in past 6 months	0.41	0.16–1.03	.06	0.38	0.15–0.95	.04

Mental health hospitalization in past year	0.96	0.08–11.49	.97	0.93	0.08–10.54	.95
Alcohol/drug problems	0.45	0.15–1.32	.14	0.46	0.16–1.37	.16
Received child care in past year	1.24	0.47–3.27	.66	1.25	0.47–3.31	.65
Received job training in past year	6.73	2.57–17.59	.0001	6.74	2.58–17.57	.0001
Received job placement service in past year	4.39	1.52–12.71	.006	4.77	1.66–13.71	.004
Received AFDC in past year	0.69	0.11–4.20	.69	0.62	0.10–3.94	.61
Received child care subsidy in past year	1.33	0.50–3.54	.57	1.34	0.50–3.57	.56
Received income from family in past year	1.82	0.83–3.99	.14	1.75	0.80–3.81	.16
Characteristics						
Severe physical violence in childhood	1.54	0.66–3.60	.33	1.47	0.63–3.45	.37
Sexual molestation in childhood	0.62	0.28–1.41	.26	0.61	0.27–1.37	.23
Previous history of physical violence by male partners (prior to baseline)	1.15	0.48–2.74	.76	1.12	0.47–2.68	.79
Recent physical aggression by male partner	0.37	0.13–1.05	.06	—	—	—
Recent physical violence by male partner	—	—	—	0.30	0.09–1.01	.05

NOTE: BSI GSI = Brief Symptom Inventory, Global Severity Index; AFDC = Aid to Families with Dependent Children.
a. Worked at least 10 hours per week for at least 3 months in the 5 years preceding the baseline interview.

DISCUSSION

To our knowledge, this is the first study that has demonstrated in a multivariate analysis the independent power of recent partner violence in predicting women's capacity to maintain work. Prior empirical studies focused either on extremely poor women's desire to work or on employment history. Most of these studies found that women victims of partner violence were no less likely to have worked in the past or to express a desire to work than women without victimization histories (e.g., Allard et al., 1997; Brooks & Buckner, 1996; Lloyd & Taluc, 1997; Salomon et al., 1996). However, past research did not define work in terms of the duration of work experiences or hours of work per week. In this study, when we asked simply whether women had worked at all in the past 12 months, there were no significant differences between women who were victims of partner aggression/violence and women without victimization experiences in the past year. It was only when the level of work was defined more specifically that the significant effects of partner violence emerged. Moreover, these effects persisted in regression analyses even when mental health and other potentially confounding variables were included.

The above findings have important implications for programming and public policy, especially in terms of recent welfare reform requirements. For example, the documented negative relationship between partner violence and women's capacity to maintain work over time suggests that 2-year cutoffs for transition from public assistance to work may be quite problematic for women who have recently experienced aggression by an intimate partner. In addition, the lag effect found in this study suggests that experiences with partner violence in the prior year seem to have ongoing negative effects that interfere with women's capacity to maintain work. For women who are unable to hold a job over time, the potential for escaping poverty through work becomes even more challenging. Low-wage entry-level work can be transformed into work that produces true economic independence only when workers are able to invest enough time in the workplace to secure promotions or to move progressively to new and higher-paying jobs.

These findings also delineate the psychosocial characteristics of women who have experienced violence within the past 12 months—an important dimension for those designing policies and services for women who might qualify for Wellstone/Murray or family violence exemptions. Even compared to other extremely poor women (many of them with trauma histories), women who have been assaulted by intimate partners during the past 12 months demonstrate significantly higher rates of emotional and medical distress, medical hospitalization, and alcohol or other drug problems. The effectiveness of policies for those states designing a response under Wellstone/Murray or family violence exemptions may well depend on the inclusion of accessible resources for recovery from these short-term effects of recent assaults. In contrast, simply exempting women from welfare-to-work requirements without stabilizing interventions may produce little progress in their readiness or capacity to sustain work.

Enabling women to work may have many positive benefits in addition to meeting current legislative requirements on participation in the workforce for impoverished single mothers. For example, independence and employment also may provide an avenue of escape for women with abusive partners. In an early Texas study, researchers found that access to independent income, child care, and transportation were primary considerations for battered women in safety planning and in making decisions about whether to leave abusive mates (Gondolf & Fisher, 1988). Although findings in our study support the need for flexible time limits for women who have experienced recent partner violence and sensitive, informed responses to their psychosocial needs, they also underscore how critical specific resources are in enhancing the ability of women to obtain or maintain work. As Lloyd and Taluc (1997) found, women with violent mates have varying needs, ranging from safe child care to protection from an abuser's harassment or stalking. Regardless of whether a woman has been recently victimized, this study also documents that practical supports—such as the availability of child care, a government child-care subsidy, job training, and job placement services—increase the likelihood that women will maintain work over time.

Multivariate analyses strengthen these conclusions. Controlling for multiple factors, a woman was about seven times more

likely to be working if she received job training and four times more likely to be working if she received job placement services. Conversely, women struggling with mental health problems had only half the odds of maintaining work as women without mental health problems, and women who had spoken to a clinician about mental health problems in the past 6 months had about one third the odds of maintaining work. These findings highlight the critical importance of creating job-related resources for poor women, as well as the need for interventions for emotional problems such as depression and posttraumatic stress disorder (see Bassuk, Brown, & Buckner, 1996) that are typically ignored in transition to work programs.

The research reported here followed women for a 24-month period, and lagged analyses were conducted to ensure that the experiences with violence included in the analyses predated the work experiences of focus. However, dates of onset and termination of each violent experience and of each work experience were not available within the 12-month periods. Future research is needed that (a) follows women for longer periods of time, and (b) is designed to date the onset and termination of all episodes of violence and employment, so that temporal relationships between violence and work can be more precisely assessed. In these analyses, the relationship between experiences with physical aggression/violence by partners in the prior 12 months affected women's ability to maintain work in the succeeding 12 months after adjustment for a number of potential confounders. However, controlling for these potential confounders—including prior work history—had very little effect on the relationship between violence and subsequent work, suggesting that the association between physical assaults by partners and difficulty maintaining employment cannot be completely explained by variables such as worse mental or physical health. Following the example of Lloyd and her colleagues, further analyses of the mechanisms by which recent partner violence affects women's ability to work should be conducted; for example, Does partner violence differentially influence women's ability to obtain work versus maintaining a job already secured? Finally, although variables related to children were examined (e.g., number of children, availability of child care, and availability of nutritional assistance for the care of infants), data were not available at the time of publication on

the characteristics of the children themselves, such as children's health or mental health status. Future research should include characteristics of children in the household in analyses of mothers' work patterns and the circumstances affecting them.

The 20-year slide of women and children into poverty in the United States and the current revision of 60 years of welfare policy make these findings of urgent concern (Browne, 1995). As we prioritize policies of cost savings in relation to the poor—and as entitlement funds are block granted to the states as a part of recent welfare reform legislation—housing, benefits for the unemployed, immigrant issues, and welfare-to-work policies dominate current discussions. An emphasis on safety for impoverished women and children—in their homes and their communities—has virtually disappeared from the national agenda. Yet, the prevalence of physical and sexual assault identified in recent studies and the impact of partner violence on women's capacity to maintain work mean that no programs or interventions designed for very low-income mothers or their children can be fully effective if they do not take into account the reality that violence is omnipresent in their lives.

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Angela Browne is a senior research scientist at the Harvard Injury Control Research Center, Harvard School of Public Health, and she is a Senior Soros Justice Fellow. Since 1979, she has published and spoken nationally on the effects of physical and sexual assault on women and children, patterns of assault and homicide in couple relationships, and the nexus of poverty, violence, and incarceration for women. Her numerous publications include When Battered Women Kill *(1987) and the American Medical Association's and the American Psychological Association's policy statements on violence against women. Since 1988, she has conducted research and trained staff at Bedford Hills, New York State's maximum security prison for women.*

Amy Salomon, Ph.D., is executive director at The Better Homes Fund, a national nonprofit organization in Newton, Massachusetts, that conducts research and designs programs benefiting homeless families and children. Salomon is a political scientist whose work has focused on disenfranchised populations, including homeless families, minority elders, people with disabilities, and women living in poverty. She has focused most recently on the interface between homelessness and family violence; the prevalence of violence in the lives of welfare recipients; and the impact of violence on women's capacity to work.

Shari S. Bassuk is a social epidemiologist and postdoctoral research fellow in the Department of Health and Social Behavior, Harvard School of Public Health. Her research specialty is geriatric psychiatric epidemiology, particularly psychosocial influences on cognitive function in the elderly. Her other areas of interest include family and social networks in relation to health and recovery from illness, family and caregiver violence, and preventive health care strategies for aged or disabled populations.

Chapter Four

The Poster Project for The Boston Police Department on Violence in the Lives of Extremely Poor Women

The Poster Project on Violence in the Lives of Extremely Poor Women

The Better Homes Fund (TBHF) and BOTEC Analysis Corporation have recently completed a research project on the effects of intimate violence against impoverished single mothers. The Project analyzed data collected from The Worcester Family Research Project, a study that followed extremely poor female-headed families over a five year period. Eighty-two percent of the sample was on welfare and half were homeless. The purpose of the research was to examine the effects of childhood abuse and family violence on the risks of later intimate partner violence, substance abuse, and the ability of women to maintain employment. The project found extraordinarily high rates of violence in the lives of poor and homeless women and that childhood and adult experiences of violence compromise women's ability to escape poverty. The results of the research have been compiled in three scholarly papers and in a poster project summarizing the findings for The Boston Police Department and its Officers.

The Poster Project for the Boston Police Department

After a focus group meeting and conversations with researchers, The Boston Police Department suggested that one method of transferring knowledge from research to the police was to develop a series of "posters" that captured the major study findings. The "posters" are an intermediate training option to be applied by the Department in ways that they feel will be productive. Because the posters are not in response to an identified training problem, their manner of use has not been fixed.

The posters could be viewed as providing a framework for what officers experience on domestic violence calls. That is, although a poster does not tell officers what to do it does give them a context within which to place domestic violence calls. Like the isobar pressure maps faxed to the Captain of the Andrea Gail in the movie *The Perfect Storm*, they didn't tell him what to do; rather, they gave him information as to why the situation was so desperate. If the information is used in this manner, it will be desirable to display it as part of a well-designed, symbolically meaningful series of wall posters developed by a graphic designer experienced with the Department environment. For example, if it is decided to display all twelve content findings, then one poster might be developed for each month of the year. This would allow the message to be sustained over a full year.

In addition, it may be desirable to distribute the posters not only to Department substations, but also distribute them to other police departments in the Boston metropolitan area. Thinking broadly, it might be productive to develop this process into a general training tool in which the managers of department use graphically attractive posters to deliver sustained messages on department priorities to line officers.

Poster Content

The following list includes twelve analytic findings that could be used as content for the posters. We have also attached the findings in single page format.

- **Violence is epidemic in the lives of poor and homeless women**: 8 out of 10 have experienced severe interpersonal violence at the hands of caretakers or partners during their lives.

- **Violence begins early for many poor and homeless women**: 60% were physically abused by caretakers while over 40% percent were sexually molested during childhood.

- **Family violence profoundly compromises the well-being of children**: Children witness violence have higher levels of depression and anxiety, often act out or become withdrawn, and develop a greater acceptance of violence as a means of resolving conflict.

- **Child sexual abuse often destroys a child's sense of safety, trust in people, and emotional stability**: Children who experience sexual abuse are three times more likely to have serious emotional problems, three times more likely to be aggressive, and three times more likely to have attention problems.

- **Physical and sexual abuse leaves emotional scars on poor and homeless women:** Rates of depression, anxiety and Post Traumatic Stress Disorder are far higher than in the general population. Over 25% have attempted suicide at least one, primarily in adolescence.

- **A history of child sexual molestation puts women at much greater risk for adult partner violence**: Poor and homeless women who experienced child sexual molestation were nearly twice as likely to be in battering relationships as adults.

- **Partner violence often repeats in the next generation**: 58% of poor and homeless battered women had mothers who were battered.

- **Low self esteem puts poor and homeless women at risk for involvement with abusive partners:** As self-esteem decreases, a woman's chance of experiencing adult partner violence increases.

- **Partner violence puts women at significantly greater risk for subsequent drug abuse**: Poor and homeless women in physically abusive relationships are four times more likely to develop drug abuse problems.

- **Women whose batterers abuse alcohol and drugs are more likely to abuse substances themselves**: the single most powerful predictor of alcohol abuse in women victims of partner violence is the batterer's abuse of alcohol.

- **Violence impacts a woman's ability to be economically independent**: Poor and homeless women in abusive relationships have only one-third the odds of maintaining stable employment.

- **Strong support systems help protect poor and homeless women against involvement in abusive relationships:** women with solid connections to friends, family and neighbors are less likely to experience intimate partner violence.

Project Collaborators

The Better Homes Fund is a national non-profit organization located in Newton, Massachusetts, whose mission is to translate research into state-of-the art programs, education and policies benefiting poor and homeless families. Most recently, TBHF's work has focused on trauma and its short- and long-term effects among low-income women. For further information contact amy.salomon@tbhf.org

BOTEC Analysis Corporation, located in Cambridge, Massachusetts is a policy research and consulting firm with expertise in the substance abuse and criminal justice fields. For further information contact bjs@botec.com

Did you know…

Violence is epidemic in the lives of poor and homeless women.

8 out of 10 have experienced severe interpersonal violence at the hands of caretakers or partners during their lives.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Violence begins early for many poor and homeless women.

60% were physically abused by caretakers while over 40% percent were sexually molested during childhood.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know...

Family violence profoundly compromises the well-being of children.*

Children who witness violence have higher levels of depression and anxiety, often act out or become withdrawn, and develop a greater acceptance of violence as a means of resolving conflict.

*The Better Homes Fund (1999). *Homeless Children: America's New Outcasts*. Newton, MA: The Better Homes Fund.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Child sexual abuse often destroys a child's sense of safety, trust in people, and emotional stability.*

Children who experience sexual abuse are three times more likely to have serious emotional problems, three times more likely to be aggressive and three times more likely to have attention problems.

*The Better Homes Fund (1999). *Homeless Children: America's New Outcasts*. Newton, MA: The Better Homes Fund.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Physical and sexual abuse leaves emotional scars on poor and homeless women.*

Rates of depression, anxiety and Post Traumatic Stress Disorder are far higher than in the general population. Over 25% have attempted suicide at least once, primarily in adolescence.

*Browne, A. &Bassuk, S. (1997). Intimate Violence in the Lives of Homeless and Poor Housed Women: Prevalence and Patterns in an Ethnically Diverse Sample. *American Journal of Orthopsychiatry. 67:* 261-278.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

A history of child sexual molestation puts women at much greater risk for adult partner violence.

Poor and homeless women who experienced child sexual molestation were nearly twice as likely to be in battering relationships as adults.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Partner violence often repeats in the next generation.

58% of poor and homeless battered women
had mothers who were battered.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Low self esteem puts poor and homeless women at risk for involvement with abusive partners.

As self-esteem decreases, a woman's chance of experiencing adult partner violence increases.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Partner violence puts women at significantly greater risk for subsequent drug abuse.

Poor and homeless women in physically abusive relationships are four times more likely to develop drug abuse problems.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Women whose batterers abuse alcohol and drugs are more likely to abuse substances themselves.

The single most powerful predictor of alcohol abuse in women victims of partner violence is the batterer's abuse of alcohol.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Violence impacts a woman's ability to be economically independent.

Poor and homeless women in abusive relationships have only one-third the odds of maintaining stable employment.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Did you know…

Strong support systems help protect poor and homeless women against involvement in abusive relationships.

Women with solid connections to friends, family and neighbors are less likely to experience intimate partner violence.

Results provided by The Better Homes Fund and BOTEC Analysis Corporation under National Institute of Justice grant 98-WT-VX-0012. For further information contact either info@tbhf.org or bjs@botec.com.

Appendix A

Project Staff Biographical Sketches

Project Staff

The Better Homes Fund

Ellen Bassuk, M.D. is the president and co-founder of The Better Homes Fund, a non-profit organization that helps homeless children and their families across America though research, program development and support, and public education. Dr. Bassuk has extensive experience in psychiatric emergency services, aftercare of severely mentally ill patients, managed behavioral health care, medication management, homelessness, and the effects of poverty and trauma on women. Dr. Bassuk co-founded and co-directed the first rape crisis center in a general hospital. In addition to authoring numerous books, articles, and research reports, Dr. Bassuk is a practicing psychiatrist and an associate professor of psychiatry at Harvard Medical School. She served for many years as Editor-in-Chief of the American Journal of Orthopsychiatry. Dr. Bassuk is the principal investigator for this NIJ secondary data analysis project.

Shari S. Bassuk, Ph.D., is a social epidemiologist and postdoctoral research fellow in the Department of Health and Social Behavior, Harvard School of Public Health. Her research specialty is geriatric psychiatric epidemiology, particularly psychosocial influences on cognitive function in the elderly. Her other areas of interest include family and social networks in relation to health and recovery from illness, family and caregiver violence, and preventive health care strategies for aged or disabled populations.

Angela Browne, Ph.D., is a senior research scientist at the Harvard Injury Control Research Center, Harvard School of Public Health, and she is a Senior Soros Justice Fellow. Since 1979, she has published and spoken nationally on the effects of physical and sexual assault on women and children, patterns of assault and homicide in couple relationships, and the nexus of poverty, violence, and incarceration for women. Her numerous publications include When Battered Women Kill (1987) and the American Medical Association's and the American Psychological Association's policy statements on violence against women. Since 1988, she has conducted research and trained staff at Bedford Hills, New York State's maximum-security prison for women.

Ree Dawson, Ph.D. is a senior statistician at Frontier Science Research and Technology Foundation, a non-profit organization headquartered in Boston, Massachusetts, that provides statistical and data management support for research on cancer, AIDS, and other social science and biomedical projects. Dr. Dawson is expert in methods for analysis of longitudinal data. Her primary research area is causal inference from observational data.

Nicholas Huntington, M.A., is a research associate at The Better Homes Fund. His previous work focused on the social context of self-conception. His current substantive interests lie in applied social psychology, particularly the social ecology of poverty and domestic violence. His current methodological interests are in case-centered methodology, partitioning techniques, and hierarchical linear models.

Amy Salomon, Ph.D. is executive director at The Better Homes Fund, a national nonprofit organization in Newton, Massachusetts, that conducts research and designs programs benefiting homeless families and children. Dr. Salomon is a political scientist, whose work has focused on disenfranchised populations, including homeless families, minority elders, people with disabilities, and women living in poverty. She has focused most recently on the interface between homelessness and family violence; the prevalence of violence in the lives of welfare recipients; and the impact of violence on women's capacity to work.

BOTEC Analysis Corporation

Bonita J. Soley, Ph.D. is responsible for design and coordination of research projects, including oversight of data collection, file construction, quantitative/qualitative analyses and writing/editing of reports. Dr. Soley has an extensive background in criminal justice and crime analysis. Her graduate work consisted of in-depth analysis and personality profiling of repeat sexual offenders and she also has extensive experience and training in domestic violence/batterer behavior. As senior research analyst at BOTEC Analysis Corporation, Dr. Soley is also involved in crime mapping projects for various police departments and has had extensive experience interacting with law enforcement professionals on various levels. She has also participated in various conferences and training seminars in crime analysis and law enforcement needs assessment. Dr. Soley holds a Ph.D. in Social/Developmental Psychology (research) from Brandeis University, Waltham, MA.

Douglas Wilson, M.P.A., Ph.D., president of BOTEC Analysis Corporation has ten years experience in government sector including three years in OS/DHHS, four years in the Office of Management and Budget (OMB/EOP), and three years in the Social Security Administration. Dr. Wilson was a senior evaluation economist in OS/DHHS and senior economist in OMB/EOP. In both positions, Dr. Wilson was responsible for evaluating the net effectiveness of several health programs within the Department of Health and Human Services as well as the leadership of interdepartmental task forces. Following his work at OS/DHHS and OMB/EOP, Dr. Wilson was the Director of Research at Risk Management Foundation where he performed policy research and presented policy recommendations to senior management and the board of directors for the malpractice insurer covering physicians at Harvard teaching hospitals. Dr. Wilson received his B.A. in political science from Drew University. He holds a Masters in Public Administration (M.P.A.) and a Ph.D. in economics from Syracuse University.