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Health Related Quality-of-Life Effects of Intimate Partner Violence

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Abstract

Intimate partner violence is well established as a public health issue. Because the documented health effects associated with IPV are so varied, addressing the underlying risk factor of abuse provides the opportunity and challenge to positively impact many aspects of women's health. Some weaknesses in the application of the public health paradigm to the problem of IPV, however, are that mechanisms linking abuse and adverse health outcomes have rarely been empirically tested, and that evaluations of intervention programs have generally not included measures of health in their long-term outcomes. Two ways that studies may begin to address these deficits are to measure health outcomes using a standardized quality-of-life measure (facilitating longitudinal comparisons), and to examine the effects of varying kinds of abuse. Results from the Women's Health Study demonstrate that experiencing IPV significantly increases one's chances of having poor health-related quality-of-life, comparable to the effect of other chronic diseases. In addition, in this study, non-physical abuse was the most important predictor of poor health status, for physical as well as for mental health. Finally, poor quality-of-life persisted even for those whose abuse had ended over one year prior to the study.

Health Related Quality-of-Life Effects of Intimate Partner Violence

Over the last three decades, public and professional views of intimate partner violence (IPV) have undergone dramatic shifts in the United States. Beginning in the late 1960's and early 1970's, the modern women's movement helped to foster recognition that this previously "private" matter was in fact a social issue; its proponents began establishing safe shelters for battered women and advocating for them (Rothman, 1998; Gelles, 2000). Women's advocates brought class-action suits against police and prosecutors for failure to provide equal protection, and many of these suits were settled by consent decrees criminalizing partner violence and promoting policies to arrest the abuser (Gelles, 2000; Worden, 2000). Partner violence had become an issue for the criminal justice system. In the eighties, the scope of the issue widened again, and IPV began to be recognized as an issue for healthcare providers and researchers, in light of both the severe health problems associated with abuse as well as the potential for intervention in the healthcare setting (Marwick, 1986; Cron, 1986). In 1985 Surgeon General C. Everett Koop led a Workshop on Violence and Public Health, in which he stated that violence was the main health problem facing women in the United States (Koop, 1985).

Koop and subsequent Surgeon Generals have suggested that the strengths of the public health framework in dealing with large-scale problems, such as motor vehicle crashes and epidemics, might likewise be applied to the problems of violence (Rothman, 1998). The goals of the public health profession have generally been to identify modifiable risk factors for various health problems, to implement intervention programs

to reduce these risks, and in turn to prevent future problems and positively impact the health and well-being of entire communities (Breslow, 1978). One notable success using this paradigm was the recognition that smoking is a risk factor in many diseases, such as lung cancer and cardiovascular disease, and the use of widespread and relatively successful educational campaigns designed to decrease smoking in the United States (Matarazzo, 1982). A common problem with research adopting this approach, however, is that the ultimate outcome—health—is often not measured in evaluations of the effects of interventions; typically they focus only on whether the risk factor itself has been modified (Kaplan, 1984). This may be because the type of prospective, longitudinal study needed to document such changes tends to be very expensive to conduct. However, rigorous testing of whether public health efforts have been effective in a given area requires that health status be evaluated over time, as most risk factors have only a probabilistic relation to disease.

In this context, partner violence is conceived of as a risk factor in a variety of health outcomes. Many studies have documented that IPV is indeed associated with specific mental and physical health problems (see, eg., Dutton, Haywood, & El-Bayoumi, 1997; Bohn & Holz, 1996; Koss & Heslet, 1992; Plitchta, 1992, or Resnick, Acierno, & Kilpatrick, 1997 for detailed reviews). Interventions have been established in a variety of healthcare settings, most notably hospital emergency departments (eg. Randall, 1991). In these research and clinical domains, the public health framework is well implemented. However, evaluations of interventions for IPV also share the major failing of public health evaluation research in general: health outcomes are rarely measured longitudinally. While the lessening or ending of abuse in a woman's life is undoubtably a critical

outcome in its own right, it has been emphasized to the exclusion of her mental and physical health. This paper reviews how far public health research of partner violence has brought us, makes some suggestions regarding future research directions that might be more informative, and documents the results of a study conducted in an urban emergency department that took some of these considerations into account.

The Health Outcomes of Intimate Partner Violence

The health problems associated with IPV are numerous and not limited only to injuries (Dutton, Haywood, & El-Bayoumi, 1997). Physical problems can generally be categorized as either acute or chronic, where physical assault is implicated in most acute effects, such as bruises, lacerations, abrasions, burns, fractured bones, choking, head injuries, internal abdominal injuries, injuries from firearms or other weapons, and death (Bohn & Holz, 1996). Injuries may also result from attempts to escape or avoid attack, as in the case of a fall or car crash when fleeing from the abuser, or they may be the result of a woman trying to fight back (Dutton, Haywood, & El-Bayoumi, 1997). The chronic physical outcomes of IPV include both the long-term effects of assault, such as chronic pain at site of old injuries, hearing loss, visual impairment, disfigurement, brain damage, paralyses, and other disabilities (Bohn & Holz, 1996), as well as those which have been theoretically linked to the effects of living in a high-stress environment, such as frequent communicable diseases (Kerouac, Taggart, Lescop, & Fortin, 1986) and somatic symptoms such as sleep disorders, gastrointestinal disorders, muscle tension, headaches, palpitations, hyperventilation, and choking sensations (Koss & Heslet, 1992).

Women experiencing IPV are also more likely to experience problems during pregnancy. Approximately half of all battered women who become pregnant are abused during pregnancy (Bohn, 1990). They are also more likely to be struck in the abdomen (Stark, Flitcraft, & Frazier, 1979), which can result in placental separation, antepartum hemorrhage, fetal fractures, rupture of the uterus, preterm labor, and low birth weight (Parker, McFarlane, & Soeken, 1994). In addition, women who are abused have been found to be twice as likely to delay prenatal care into the third trimester, compared to those who were not abused (McFarlane, Parker, Soeken, & Bullock, 1992; Parker, McFarlane, & Soeken, 1994). Finally, battering has been linked to a greater likelihood of using tobacco, alcohol, and drugs during pregnancy (Amaro, Fried, Cobral, & Zuckerman, 1990), which may be because abused women use chemicals to cope with the stress of battering and a potentially unwanted pregnancy (Bohn, 1996). Indeed, Amaro and colleagues (1990) reported that IPV victims had more depressive symptoms during pregnancy, were less happy about being pregnant, and received less emotional support for the pregnancy. One may speculate that abused women may also use alcohol and drugs to cope with the fear that their newborn child will also be abused.

Of all the psychological problems that have been linked to abuse, depression is by far the most common (Gleason, 1993; Hathaway, Mucci, Silverman, Brooks, Mathews, & Pavlos, 2000), followed by disorders involving anxiety and fear, such as panic disorders, phobias, and post-traumatic stress disorder (PTSD) (Trimpey, 1989). PTSD involves a cluster of symptoms which follow an extremely traumatic stressor that evokes intense fear, helplessness, or horror. Symptoms include persistent reexperiencing of the traumatic event (through, for example, flashbacks, intrusive thoughts, or dreams),

psychological numbing, avoidance of stimuli related to the trauma, and indications of increased arousal such as persistent anxiety, irritability, insomnia, hypersensitivity, and hypervigilance (American Psychiatric Association, 1994).

Researchers have suggested a variety of possible mechanisms by which the health effects associated with partner violence may actually be related to it. Of particular interest are those effects that go beyond injuries due to acute trauma. For example, one common assertion is that a stress-related lowering of immune response may be used to explain the increased number of communicable diseases experienced by victims of abuse. There is ample evidence to support the claim that elevated stress levels can in general lead to lowered immune functioning and greater chance of disease (Cohen & Williamson, 1991; Cohen & Herbert, 1996). Stress has not yet been empirically tested as a mediator of the effect of IPV on health, however (Campbell & Lewandowski, 1997). It may also be that IPV impacts health by tending to change women's health-related risk behaviors, due to lowered self-esteem and self-care, unhealthy coping strategies, or the partner's controlling behavior. For example, victimized women report smoking more (Hathaway et al., 2000), using seatbelts less frequently (Koss, Koss, & Woodruff, 1991), and having greater problems with alcohol (Miller, Downs, & Gondoh, 1989). The article by Miller demonstrated that spousal abuse scores were the greatest predictor of alcoholism in women, when also controlling for income, history of family violence, and spouse's alcohol abuse (1989). Severely abused women are also more likely to be physically threatened by partner when they ask to use condom (Wingood, DiClemente, & Raj, 2000). Thus, the risk factor of abuse may be mediated through other known behavioral risk factors. Finally, some have also speculated that the increased symptom reporting of

abused women may be linked to chronic overarousal as seen in those experiencing PTSD, leading to heightened focus on internal sensations. For this or other reasons, abused women may also tend to seek care more often (Coker, Smith, Bethea, King, & McKeown, 2000), leading to higher numbers of physician visits and more diagnoses.

A better understanding of how various other factors impact the relationship between abuse and health might suggest strategies for intervention to maximize the benefit to a battered woman's health (Campbell & Soeken, 1999), but to this point, few of these mechanisms have been explicitly examined in any research documenting the health effects of violence. Several studies which begin to take this approach are described below.

Campbell and Soeken used structural equation modeling to test the viability of a model including the effects of abuse severity and self-care agency on health (1999). Self-care agency includes self-esteem as well as perceived ability to care for one's self. A volunteer community sample of women completed a series of questionnaires measuring each of these variables, as well as age and income. They found that the model that fit the data best contained pathways between abuse and health directly, as well as between abuse and health mediated through self-care agency as a protective factor. However, without having done a prospective study, the authors note that the direction of the link between abuse and self-care agency could also go in the opposite direction; it could be that self-care agency protects women from battering as well as protecting their health.

Another way in which one can begin to explore the mechanisms by which abuse effects health is to pay particular attention to what type of abuse each participant is experiencing. Examining the particular symptoms experienced by women enduring

various combinations of types of abuse (for example, physical and psychological compared to psychological "only") can shed some light on what pathways might be possible for each effect.

Coker and her colleagues found that psychological IPV (*without* physical or sexual abuse) was associated with a similar array of outcomes previously seen when looking at those with physical abuse, including disability preventing work, arthritis, chronic pain, migraine or frequent headaches, stammering, sexually transmitted diseases, stomach ulcers, spastic colon, frequent indigestion, diarrhea, and constipation (Coker et al., 2000). Physical abuse was associated with hearing loss, angina, other circulatory problems, frequent bladder or kidney infections, having a hysterectomy, and gastric reflux. Another study comparing women experiencing sexual abuse in addition to physical abuse to those experiencing solely physical abuse indicated that the addition of sexual abuse was associated with greater likelihood both of having had multiple sexually transmitted diseases as well as having been diagnosed with an STD in the past 2 months (Wingood, DiClemente, & Raj, 2000).

The Need for Intervention in Healthcare Settings

No matter what the mechanism, the fact that abuse is a risk factor for a variety of health problems has implications for healthcare costs, in that abuse survivors are disproportionately frequent users of healthcare (Bohn & Holz, 1996; Reno, Marcus, Leary, & Samuels, 2000). Findings from the recent National Violence Against Women Survey, a national poll conducted by the Department of Justice, indicate that of the estimated 4.8 million intimate partner rapes and physical assaults annually,

approximately 2 million result in injury, and 552,192 are treated medically (Reno et al., 2000). This figure does not include visits due to chronic problems, but research indicates that many of these medical treatments are not isolated incidents; rather, an estimated 53% of IPV victims present repeatedly (6 or more times) with trauma-related injuries (Stark Flitcraft, & Frazier, 1979). Kernic and her colleagues found that in the year before filing a protection order, women experiencing abuse were significantly more likely than non-abused women from the same population to be hospitalized with any diagnosis, as well as with the specific diagnoses of a psychiatric problem, injury or poisoning, digestive system disease, assault, or attempted suicide (Kernic, Wolf, & Holt, 2000). Finally, a recent study of HMO patients found that on average, $1775 more was spent annually for IPV victims compared to a randomly selected group of women using the plan (Wisner, Gilmer, Saltzman, & Zink, 1999).

Such findings indicate another role of public health in addressing the needs of women experiencing IPV—educating healthcare providers and coordinating intervention programs. Ideally, use of medical facilities by abused women would be viewed as an opportunity to address the underlying risk factor of abuse in addition to the immediate problem. Working in a profit driven healthcare delivery system, however, medical staff may view addressing these issues as being too time-consuming (Bohn & Holz, 1996). They may also fear offending the patient, or be uncertain of what to do after identifying a case of abuse (Sugg & Inui, 1992). Failure to establish intervention programs that address these concerns may lead to cases in which repeated visits by patients are viewed as failures to respond to appropriate medical treatment. The ultimate goal of early intervention is to stop the cycle of violence in a relationship before it escalates, the

assumption being that reducing or eliminating this risk factor will, in addition to increasing her safety, also benefit a woman's health and possibly reduce her long-term healthcare costs.

Medical providers often represent an entry-point for patients, not only to the medical establishment, but also to the social services available to victims of IPV (Hendricks-Matthews, 1993). Adopting such an orientation has been urged by a variety of medical organizations and government agencies, including the American College of Obstetrics and Gynecology, the American Medial Association, the American College of Emergency Physicians, and the Centers for Disease Control and Prevention, all of whom have recommended routine screening for cases of IPV (Dutton, Haywood, & El-Bayoumi, 1997).

This call to action has, to a large degree, been heeded. For example, many emergency departments have instituted screening and intervention programs for IPV, in which emergency department staff are trained to identify battered women and immediately refer them to a supportive advocate on call (eg., Randall, 1991). Such programs are especially well-positioned to identify women experiencing IPV, given that the emergency department may constitute the only access to healthcare for many women (Larkin, Weber, Derse, 1999), and that between 2.2% and 35% of female patients being treated in the emergency department are estimated to be there as a direct or indirect result of abuse (Abbott, Johnson, Koziol-McLain, & Lowenstein, 1995; Dearwater, Coben, Campbell, Nah, Glass, McLoughlin, & Bekemeier, 1998; Ernst, Nick, Weiss, Houry, & Mills, 1997; Goldberg & Tomlanovich, 1984). Different estimates may be related to varying operationalizations of abuse, ranging from having undergone immediately

preceding trauma (Dearwater et al., 1998) to answering "yes" or "unsure" to one or both of the questions "Are you here today for injuries from your husband or boyfriend?" and "Are you here today because of illness or stress related to threats, violent behavior, or fears from your husband or boyfriend?" (Abbott et al., 1995)

Such programs have also begun to appear in clinics and family practices, in response to recognition that many women being treated there may also be victimized by their partners. One study of 394 women seeking medical care from a community practice found that 23% reported having been physically assaulted by their partner in the past year (Hamberger, Saunders, & Hovey, 1992). Indeed, the diverse health effects of IPV imply that healthcare providers in many fields of medicine are in a unique position to identify victims of violence, some have said second only to law enforcement (Randall, 1991).

The ability of law enforcement to intervene in cases of partner violence, however, is viewed fairly negatively by women currently experiencing it. The National Violence Against Women Study found that, of the approximately three quarters of physical assaults that go unreported to police, the overwhelming reasons given by respondents for their nondisclosure were that police couldn't do anything, endorsed by 99.7% of female respondents, or that the police wouldn't believe their story, endorsed by 61.3% of female respondents (Reno et al., 2000).

In contrast, to the extent that abused women view healthcare professionals as supportive and able to help, they may consider seeking help in a medical setting a more viable option than calling the police. Seeking medical care may also occasionally coincide with or even bring about "turning points" in a woman's relationship with her abusive partner. For instance, it may facilitate the realization that the abuse is affecting

her in a way that is no longer tolerable, or provide evidence that her partner is unlikely to change. Thus, interventions in a healthcare center may reach certain women at a particularly receptive time. In particular, for women who are unaware of the effects abuse may be having on their health (for instance, in cases where ill health may be due to the body's response to stress or unhealthy coping strategies), advocates in a medical setting may be able to suggest this possibility (Dutton, Haywood, & El-Bayoumi, 1997). More research is needed, however, on how battered women actually view healthcare providers in terms of supportiveness and ability to help; in a recent study, a group of African-American IPV victims were less likely to report feeling respected and accepted during an encounter with a primary care giver, and they gave lower ratings of quality of communication with the provider than did non-abused women from the same population (McNutt, van Ryn, Clark, & Fraiser, 2000).

The Role of Quality-of-Life Measures in Basic IPV and Evaluation Research

As documented above, the trend throughout most research examining the health effects of IPV has been to examine diagnoses of disease and/or injury in patient populations which have been divided into abused and nonabused groups for comparison, or to examine the percentage of those with a given diagnosis who have been or are currently being abused. Such prevalence and incidence statistics describing those currently seeking care, however, are limited in the amount of information they convey regarding the impact of abuse on health, especially in terms of health related quality-of-life. Measures that take into account a woman's own perceived health and well-being, her functional ability, or her specific symptoms, for example, could be useful to healthcare

providers and researchers for several reasons. First, their potentially greater descriptiveness could lead to greater understanding of women's responses to abuse. This would be helpful both in identifying and advocating for abuse victims.

The second advantage is related to measuring the impact of healthcare centered interventions for IPV. Again, one of the assumptions of the public health approach is that reducing risk factors such as abuse will eventually lead to better health outcomes. Because current abuse victims suffer greater prevalence of certain mental and physical health problems and make greater use of medical care, it makes sense that interventions to prevent or end abuse in women's lives would impact their health in a positive way. However, most program evaluations do not measure health longitudinally, making it difficult to substantiate this claim. In addition, it should also be noted that relationship status and physical health outcomes might not always be immediately related. For instance, one study showed the biggest increases in medical utilization occurring in the second year following victimization (Koss, Koss, & Woodruff, 1991). Likewise with mental health, some studies show that depression declines over time once abuse ends, while others show continuing depression (see Dienemann, Boyle, Baker, Resnick, Wiederhorn, & Campbell, 2000, for a review). Thus, to the extent that interventions are designed to impact a woman's health in addition to the status of her relationship, it is important to have a way of measuring changes in health over time.

Measures of quality-of-life and individual symptoms may be especially well-suited to this purpose. For one, they are more sensitive to change than is one's status on a dichotomous variable such as disease categorization, and they may therefore be more likely to show the effect of a given intervention. These scales may also be more reliable

than physician ratings of health, especially if a woman sees different physicians over time. Thus, these measures provide a standardized way to measure health longitudinally, one that is both sensitive and reliable. They also give policy-makers a way of comparing abuse outcomes across a wider range of disorders and diseases.

Finally, a health related quality-of-life approach shifts the emphasis of research and intervention from being focused on the practitioner and the healthcare system to being focused on the patient. Outcomes relevant to the medical community may not always coincide with those the patient herself considers relevant. Kaplan argues that what is most important to the patient are functional outcomes and quality-of-life, and that specific diseases and disabilities are only important because of their effects on mortality and morbidity—in other words, how long one lives, and how well (1990).

In order to use quality-of-life measures in longitudinal research, their outcomes should first be examined using cross-sectional studies of abuse victims to determine the appropriateness of each measure for this population, as well as what type of improvement might be considered clinically relevant. A few studies of IPV have included quality-of-life measures in their outcomes, and their results are suggestive. In a cross-sectional, nationally-representative telephone survey, Plichta (1996) found that women with abusive partners were significantly more likely than other women to define their health as fair or poor. Another national random survey also showed similar findings of poor to fair health (Gelles & Straus, 1990). It also revealed that severely battered women had almost twice the number of days sick in bed due to illness than did other women.

A study by Conway and colleagues used the SF-20, a quality-of-life measure that has been used widely in other disciplines (Conway, Hu, Warshaw, Kim, & Bullon, 1995)

This study documented the health effects of violence in general. Patients presenting at an urban walk-in clinic over a one-week time span, as well as a convenience sample of visitors, were categorized according to whether they had ever been a victim of serious physical violence of any kind. Patient victims had the lowest means on all six subscales of the SF-20, representing poor health in areas including bodily pain, limitations in one's social roles due to poor mental or physical health, overall perceptions of one's health, and mental health problems. The strongest association between violence and any subscale score, based on the prevalence odds ratios of scoring below the mean for each subscale, was between violence and mental health. In addition, comparing these results to the results of large-scale surveys of those with various health problems using the SF-20, the researchers found that the overall effect found was similar to or exceeded that associated with other chronic conditions.

The study reported here involved using a similar scale, the SF-36, as well as a symptom checklist for mental health, to examine the types of responses given by those women experiencing different types of partner violence either presently or at least one year in the past. Thus, it allows comparisons in terms of quality-of-life both between different types and timeframes of abuse, as well as overall comparisons between the effects of abuse and the effects of other chronic health problems.

Methods

The Women's Health Study was designed to examine the effect of abuse and other psychosocial factors on women's health. It was a cross-sectional survey conducted from April, 1997 to March, 1998 in an inner-city, Level 1 trauma and burn center. Study

researchers screened women patients for IPV during randomly selected 4 hour time blocks between the hours of 10 am and 10 pm, using the DSA-R, a screening measure that consists of questions regarding a woman's sense of safety at home, her experiences of physical, emotional, and sexual abuse, and her mental health (Salber & Taliaferro, 1995). Abuse was defined in this study answering affirmatively to at least two of the questions on the DSA-R. A woman did not have to currently be experiencing physical abuse. Enrolled women were grouped into one of three categories: currently experiencing IPV (within the past three months), experienced IPV in the past (over 1 year ago), and controls (experienced no IPV ever). Thus, there was an exclusion window of 3-12 months. This exclusion criteria was based on the opinions of workers at a local women's shelter, who stated that one year free from violence could serve as a good indication of when the abuse had truly ended. For instance, they knew of instances in which women who had left their partners were still being stalked by them six months later. In order to avoid contamination effects, subjects were also excluded if in the past year they had experienced some other major trauma unrelated to partner abuse, such as a mugging.

All participants gave demographic information, completed a series of questionnaires, were interviewed for mental health symptoms, and had blood drawn. Of interest to this study were only three questionnaires, the Index of Spouse Abuse, SF-36, and SCL-90, described in the next section.

Because the number of "pasts" and "controls" had exceeded target enrollment by mid-study, whereas not enough "currents" had been enrolled, researchers went on call continuously during the 10 am to 10 pm time frame, and all victims of IPV identified by

hospital staff as part of already existing screening procedures (using the DSA, an earlier version of the DSA-R) were recruited for enrollment. At the end of the study, 165 participants had completed useable data. Sixty-seven women were currently abused by their partners, 46 had been abused by a partner at least one year prior, and 52 control women had never been abused by a partner.

As part of a separate study, women currently being abused were randomized to receive two different types of intervention, and a subset of participants completed a similar set of measures four to six months later.

Measures

Demographics

Women were asked for their age, race, religion, marital status, highest level of education, and income, as well as the length of time they had been with their current partner, and how many children they had.

Index of Spouse Abuse

The Index of Spouse Abuse (ISA) assesses women's agreement with 30 abuse-related assertions about her partner. It is designed to measure the magnitude of both physical and nonphysical abuse via two separate subscales, and each question is weighted by a measure of severity of the item (Hudson & McIntosh, 1981). Scores on each subscale range from 0 to 100. The ISA has been shown to be internally consistent and have construct validity, and to distinguish between abused and non-abused women (Hudson & McIntosh, 1981; Attala, Hudson, & McSweeney, 1994). In this study,

slightly different wording of Index of Spouse Abuse was given to the different abuse groups (current abuse, past abuse, and non-abused controls). Specifically, current victims and controls were asked to answer the questions in regards to their current partner, whereas past victims were asked about the partner in their previously abusive relationship. Scores on the ISA can thus be thought of as a "severity" variable, whereas group categorization can be thought of as a "recency" variable.

SF-36

The MOS 36-Item Short-Form Health Survey (SF-36) is a self-report measure of health and well being designed to assess eight health concepts. These are given by the scale designers as "1) limitations in physical activities due to health problems, 2) limitations in social activities because of physical or emotional problems, 3) limitations in usual role activities because of physical health problems, 4) bodily pain, 5) general mental health (psychological distress and well-being), 6) limitations on usual role activities because of emotional problems, 7) vitality (energy and fatigue), and 8) general health perceptions" (Ware & Sherbourne, 1992). Each concept has its own subscale, and scoring was designed to facilitate comparisons to national norms for the United States; each subscale has a mean of about 50 and standard deviation of about 10 in the general population (Ware & Sherbourne, 1992).

The SF-36 can also be scored to produce two overall summary measures of health, the Mental Component Summary (MCS) and Physical Component Summary (PCS) (Ware, Kosinski, & Keller, 1994). The interpretation of these summary measures

is similar to that of the subscales; lower scores indicate worse health and a score of 50 is about average.

SCL-90-R

The SCL-90-R is a 90 item inventory of self-reported symptoms related to mental health (Derogatis, 1992). It was originally designed to reflect psychological symptom patterns in psychiatric and medical patients, so its applicability to IPV populations is still in question. It has considerable face validity; each of its nine subscales correspond to symptoms from defined psychiatric disorders. There are somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism subscales, although this analysis focuses on scores from a single overall summary measure of number and severity of symptoms, the Global Severity Index (GSI). Scores on the GSI can range from 0 to 5, where a 5 indicates that one is reporting experiencing severe distress from all 90 symptoms.

Data Analysis

First, the equivalency of the current abuse, past abuse, and control groups in terms of demographic variables was examined using the relevant test statistics. When overall tests indicated a difference between groups, contrasts were performed to determine the nature of these differences.

To check that the control group did in fact differ in experienced abuse when compared to the past and current abuse groups, and to see how the two abuse groups were different in terms of severity of abuse, one-way ANOVAs were performed, comparing

group means on both the physical and nonphysical abuse subscales of the Index of Spouse Abuse. To facilitate comparisons of the separate effects of physical and non-physical abuse in subsequent analyses, participants were also categorized according to whether they experienced only physical abuse, only non-physical abuse, both, or neither. More specifically, each participant was classified according to whether or not her physical abuse score on the ISA fell above the cutoff given by Hudson and McIntosh (1981), and likewise whether or not her mental abuse score fell above the corresponding cutoff. These cutoff points were 10 for physical abuse and 25 for nonphysical abuse. Note that this categorization ignores when the abuse actually occurred.

Analysis of the effect of abuse on self-reported quality-of-life on the SF-36 consisted of three parts. First, group status (past abuse, current abuse, or control) was examined as a predictor of scores on the Mental Health and Physical Health Components (MCS and PCS) of the SF-36 using a one-way ANOVA. Then, to provide a better picture of the impact of ongoing abuse and abuse that has ended in terms of effect size, odds ratios were calculated for each of the eight SF-36 subscales, comparing the odds of scoring below one standard deviation less than the national average (scoring below 40) for each abuse group compared to controls. These results were further refined by including abuse status (past and current versus controls), age, and smoking in a logistic regression model. This yielded adjusted odds ratios for the effect of abuse in general. Finally, using the dichotomized variables of having ever experienced non-physical abuse, and having ever experienced physical abuse (according to ISA cutoffs), the effects of each type of abuse were analyzed using two-way ANOVAs to again predict MCS and PCS scores.

Likewise, scores on the Global Severity Index (GSI) of the SCL-90 were compared using a one-way ANOVA based on abuse status (past, current, or control), and a two-way ANOVA based on both physical and non-physical abuse. Odds ratios were not calculated, due to the lack of an accepted cutoff point for individual scales (Derogatis, 1992).

Results

Demographics

Demographic variables for the three groups and tests for significant differences are summarized in Table 1. Contrast t-tests comparing controls to the two abuse groups showed that control participants were, if married, on average married longer (contrast $t = 3.279$, $p = .003$), and that in general control participants had fewer children (contrast $t = -2.764$, $p = .006$), whereas the two abuse groups did not differ significantly from each other. The other significant effect that emerged was that the distribution of religion across groups was not even; currently abused women were more less to be Catholic, when compared to the other two groups. Because the study was conducted at an inner-city Catholic hospital, it is possible that Catholicism in this sample was associated with other, unmeasured variables that also happened to be associated with abuse status, or it may be that Catholic beliefs, such as greater disapproval of divorce, are impacting these results.

Index of Spouse Abuse

The past abuse, current abuse, and control groups differed on both the physical and non-physical subscales of the Index of Spouse Abuse. On the non-physical abuse

scale, the control group had mean 7.35 (SD 13.23), the past abuse group had mean 35.95 (SD 33.49), and the current abuse group had mean 43.08 (SD 24.38), a statistically significant difference overall ($F = 31.916$, $p < .001$). Pairwise contrasts showed no difference between current and past abuse groups (contrast $t = -1.50$, $p = .136$), indicating that abuse victims had roughly comparable severity of abuse, whether occurring currently or in the past; however the two abuse groups combined did differ significantly from the controls (contrast $t = -7.65$, $p < .001$).

Likewise, on the physical abuse scale, the control group had mean 2.84 (SD 8.49), the past abuse group had mean 28.86 (SD 32.31), and the current abuse group had mean 34.48 (SD 24.55), an overall difference significant at the .001 level ($F = 27.54$). Again, the difference between current and past abuse groups was not significant (contrast $t = -1.233$, $p = .219$), whereas the two abuse groups combined were significantly different from the controls (contrast $t = -7.164$, $p < .001$).

Physical and non-physical abuse were highly correlated in this sample ($r = .807$, $p < .001$). Sixty-three participants (46.7%) reported experiencing neither type of abuse, according to Hudson and McIntosh's (1981) cutoff scores. Fifty-six (41.5%) reported both, while only 11 (8.1%) reported physical without non-physical abuse, and 5 (3.7%) reported non-physical abuse without physical abuse.

SF-36

Means and standard deviations for the MCS and PCS subscales by abuse group (past, current, or control) appear in Table 2. Overall F-tests showed significant differences between groups on scores for both mental and physical health (MCS: $F =$

11.633, $p < .001$; PCS: $F = 3.399$, $p = .036$). Pairwise contrasts between each group showed that all groups differed significantly from each other on the MCS ($p < .05$ for all), indicating that past abuse victims had significantly worse mental health than did controls, and that the mental health of current abuse victims was even worse. Similar trends were found for physical health, although the only significant contrast was found for those currently experiencing abuse compared to the control participants (contrast $t = 2.495$, $p = .014$).

Odds ratios comparing each abuse group to the control group on each of the eight SF-36 subscales are given in Figure 1. This graph shows the relative increase in the odds of scoring below 40 (one standard deviation below the population mean) on each subscale, given that participants experienced abuse either in the past or in their current relationship. If abuse had no effect on the component of health measured by a particular subscale, we would expect the observed odds ratio to be close to 1. Higher odds ratios indicate *worse* health for that group, compared to the controls. Odds ratios that were significantly different from 1 (at the .05 level) are also indicated by an asterisk. The most noticeable effects were on the Bodily Pain, Social Functioning, and Mental Health, Role Physical, and Role Emotional subscales. Comparisons *between* abuse groups can also give some indication of the duration of each effect. For example, the odds ratios for current and past abuse victims on the Bodily Pain scale are both about 5, indicating worse health among both abuse groups. On the other hand, the Mental Health odds ratio of participants currently experiencing abuse is higher than those whose abuse ended more than a year ago. These differences should only be treated as trends, however. The odds

ratios comparing past and current abuse groups were mainly nonsignificant, although for Mental Health the effect approached significance ($\chi^2 = 3.41$, $p = .076$).

The results for the logistic regression models were similar. Odds ratios for abuse overall (past and current) are shown below each subscale. In general, controlling for age and whether or not a participant smoked did not change the significance of the odds ratio, except on the Role Physical scale.

Returning to the two factor-derived summaries of overall mental and physical health, the MCS and PCS, the effect of each type of abuse (physical and nonphysical) on each scale was compared. Means and standard deviations appear in Table 3. Using mental health as a dependent variable, a two-way ANOVA showed no interaction between physical and non-physical abuse ($F = .350$, n.s.). Only the presence of non-physical abuse had a significant impact on MCS scores ($F = 6.36$, $p = .013$); physical abuse did not ($F = .319$, n. s.). The two abuse types were similarly associated with scores on the PCS. There was no interaction between the two types ($F = .017$, n.s.). Non-physical abuse was marginally significant in its effect ($F = 2.99$, $p = .086$), whereas physical abuse again was nonsignificant ($F = .199$, n.s.).

SCL-90

Means and standard deviations for the Global Severity Index (GSI) of the SCL-90, on a zero to five point scale, were 1.36 (SD 0.84) for the current abuse group, 0.91 (SD 0.85) for the past abuse group, and 0.49 (SD 0.51) for the control group, a significant difference overall ($F = 19.53$, $p < .001$). Pairwise contrasts between each group were all significant at the .01 level.

Type of abuse, as indicated by the dichotomized abuse variables, had an impact on GSI scores as well, as can be seen in Table 4. There was no interaction between the two abuse types ($F = .784$, n.s.) and no effect of non-physical abuse ($F = 1.144$, n.s.). However, in contrast to its effect on SF-36 summaries, physical abuse had a significant effect on GSI scores ($F = 9.055$, $p = .003$).

Discussion

Results from the Women's Health Study show that women experiencing abuse have significantly worse quality-of-life status, in terms of both mental and physical health, when compared to nonabused women sampled from the same patient population. Differences in mental health were larger in magnitude than those for physical health, and worse mental health compared to controls was still evident in women whose abuse had ended at least one year prior to the study. These results are consistent with prior research showing the greatest association between abuse and mental health as opposed to physical health (eg., Conway et al., 1995), The greatest impact in terms of odds ratios for each of the SF-36 subscales was seen for the Social Functioning subscale, which is not surprising given the state of isolation imposed upon their partners by many abusers. Also of note is the fact that the odds ratios on the General Health subscale, which measures overall perceptions of one's own health, were close to 1 for both abuse groups and actually tended to be slightly negative, indicating that fewer abused women in this sample perceived their health to be very poor than did the non-abused controls. What emerges is a picture of a woman who perceives her health to be about the same as that of her peers, but when asked specific questions about her quality-of-life in specific domains, actually

has greater odds of reporting poor health in these domains. Future research might attempt to replicate this result, and possibly also to explore why it might occur. Could it be that abused women are particularly motivated to view their health as being better than it really is, in order to downplay the importance of the abuse? If so, why does a similar pattern emerge for women whose experience of abuse has ended?

Scores on the MCS and PCS subscales seen here may begin to shed light on just how much of an impact partner violence implies for women's health, compared to the effect of other chronic diseases that have been measured using the same scale. Specifically, the mean PCS score for currently abused women in this sample was 46.04, which falls about midway between the measured quality-of-life impact of having allergies, for which the mean taken from general population studies is 47.44, and having cancer, for which the mean is 45.12 (Ware, Kosinski, & Keller, 1994). The mean MCS score for currently abused women in this sample was 37.52, which falls below the mean of 43.46 for those identified by a depression screener in a general population study, but above the mean of 34.84 for a population of patients who had all been diagnosed with clinical depression in the Medical Outcomes Study (Ware, Kosinski, & Keller, 1994). Because of the small sample size of the study described in this paper, however, such comparisons are merely suggestive. Scores may have also been lowered due to reasons other than abuse, because the Women's Health Study enrolled women patients in an emergency department. This would only effect comparisons to population norms, however; it would not alter the comparison between abused and non-abused women in the sample, because groups were equivalent in their seeking of treatment.

Another important finding was that the presence of non-physical abuse, as determined by cutoffs on the Index of Spouse Abuse, had a significant impact on mental and physical health. Comparing mean scores on both the MCS and PCS between those experiencing some combination of physical and non-physical abuse by their partners (both, one or the other, or neither), women who experienced non-physical abuse *without* being physically abused looked remarkably similar to those women experiencing both. This corroborates the findings illustrated by Coker and her colleagues, that there is a significant health impact of "psychological" battering (Coker et al., 2000), but whereas that study examined specific health problems, this one looked at the effect in terms of quality-of-life. These findings have implications for research and practice. First, future studies should continue to better examine the effect of both kinds of abuse and not assume that it is physical violence that is the primary culprit. Because physical and nonphysical abuse tend to be very highly correlated, however, larger overall sample sizes are needed in order to be able to examine the effects on a group of women experiencing only one type of abuse. Also, if they do not already do so, healthcare screening programs for IPV should consider including screening for non-physical abuse as well as physical, given the evidence that non-physical abuse can likewise damage a woman's health.

Results taken from the SCL-90 are harder to interpret in this study. Comparisons between past and current abuse groups and controls were as expected—the global severity of symptoms for women who had been abused at some time in the past was significantly greater than that for nonabused controls, while the severity for women currently being abused was significantly even greater than those in the past abuse group. However, when abuse was broken down into physical and non-physical categories as

before, this time it was physical abuse that had a significant relationship to this measure of psychological symptoms, whereas non-physical abuse did not. What could account for these results?

One possible explanation is that the timeframe given as a preface to the SCL-90 is different from that of the SF-36. Whereas the SF-36 asks questions in regard to the past month, the SCL-90 asks about the past week. Thus, the mental health scale on the SF-36 is not conceptually equivalent to the GSI of the SCL-90. Given that a fair number of currently abused women in the sample may have been in the emergency department as a consequence of physical assault, it may be that the SCL-90 picked up the acute psychological effects of this trauma and tended to increase GSI scores. In contrast, because the SF-36 asks about the past month, it may be a better indicator of one's day-to-day health and the chronic effects of both types of abuse. Here, the effect of non-physical abuse may predominate.

It might also be that, as the SCL-90 was designed primarily to portray the symptoms of psychiatric patients, it may also measure something different in abused women. Support for this possibility is given in that a principal factor analysis of the SCL-90 items using data from this study found that one factor accounted for the majority of the variance, instead of finding multiple factors as might be expected from a scale designed to measure symptoms of a range of different and distinct psychiatric disorders. Future research might do well to design or adapt a psychological symptom scale that is reliable in detecting symptoms of the two major categories of poor mental health outcomes abused women tend to experience, depression and anxiety. During such a task, it would be important to keep in mind that certain symptoms which are normally

indicative of psychological disorder, such as avoidance of stimuli associated with a traumatic experience, may actually be adaptive and sensible behavior when it comes to women currently dealing with an abusive partner.

Tables and Figures

Table I. Demographic Variables by Group

Variable	Control (n=52)	Past (n=46)	Current (n=67)	Test statistic	p
Age					
Mean years (SD)	30.21 (11.27)	33.75(10.58)	31.44 (8.89)	F = 1.545	.216
Race					
Black, Hispanic, Asian	46.2%	56.5%	58.2%	$\chi^2 = 1.884$	.390
White (NonHispanic)	53.8%	43.5%	41.8%		
Religion					
Christian (NonCatholic)	48.1%	45.7%	67.2%	$\chi^2 = 13.275$	.039
Catholic	36.5%	30.4%	17.9%		
None	5.8%	19.6%	11.9%		
No preference / other	9.6%	4.3%	3.0%		
Marital status					
Single	23.1%	17.4%	20.9%	$\chi^2 = 1.428$	.964
Single but involved	42.3%	45.7%	47.8%		
Married or living together	26.9%	26.1%	20.9%		
Separated, divorced, widowed	7.7%	10.9%	10.4%		
Mean years with partner (SD)					
Unmarried participants	4.63 (4.30)	3.75 (3.66)	2.97 (3.35)	F = 1.248	.294
Married participants	17.29 (11.32)	5.12 (5.60)	8.56 (8.45)	F = 5.599	.008
Children					
Average number (SD)	1.23 (1.39)	2.02 (1.56)	1.83 (1.52)	F = 3.898	.022
Education, highest completed					
Grade 7-12	13.5%	15.2%	22.7%	$\chi^2 = 11.505$	.175
Highschool	36.5%	45.7%	45.5%		
Part college	21.2%	13.0%	13.6%		
2-year technical	11.5%	21.7%	21.1%		
College, graduate/professional	17.3%	4.3%	6.1%		
Household income per year					
$0 - $5,000	19.2%	26.7%	28.4%	$\chi^2 = 14.79$	.063
$5,000 - $10,000	19.2%	31.1%	34.3%		
$10,000 – $20,000	25.0%	15.6%	20.9%		
$20,000 - $40,000	17.3%	17.8%	14.9%		
> $40,000	19.2%	8.9%	1.5%		

Table II. MCS and PCS Scores by Abuse Status

	Mean MCS (SD)	Mean PCS (SD)
Control	47.74 (8.14)	50.91 (8.41)
Past	42.12 (12.93)	46.79 (11.46)
Current	37.52 (11.13)	46.04 (10.02)

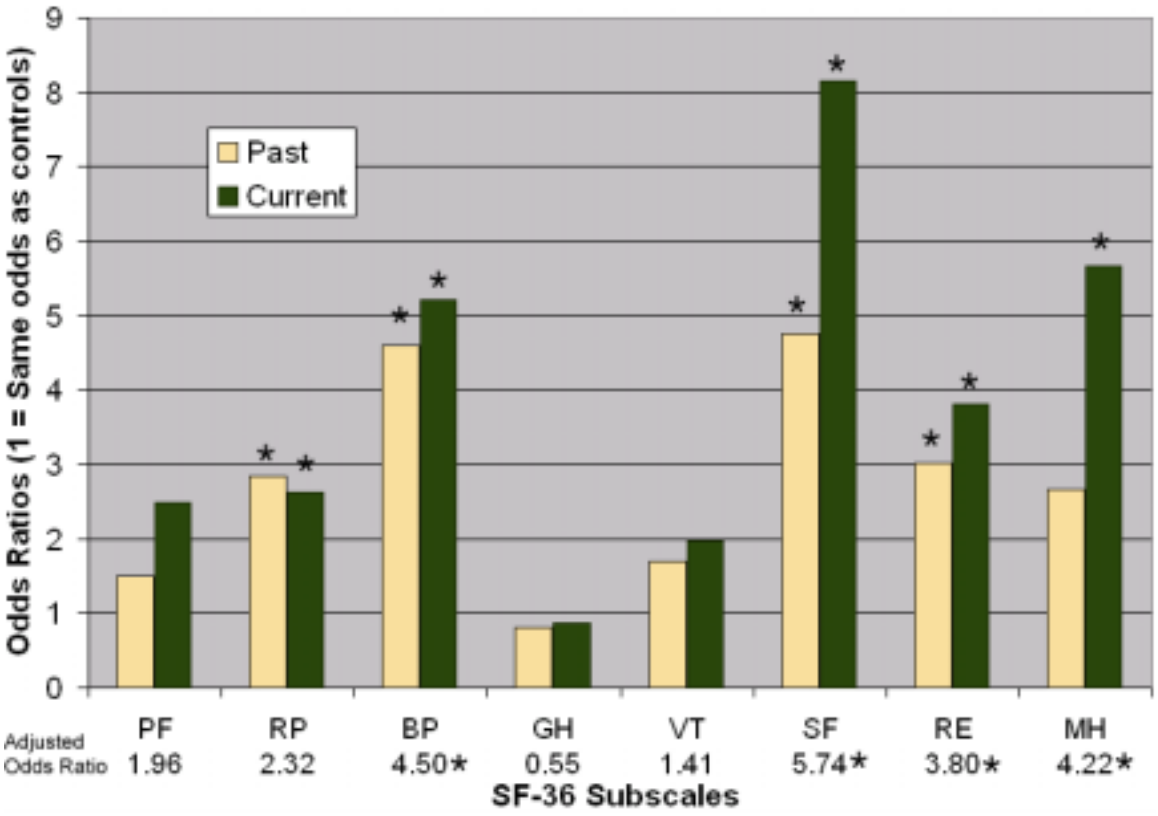
Table III. Means (and Standard Deviations) on MCS and PCS by Abuse Type

		MCS		PCS	
		Nonphysical abuse		Nonphysical abuse	
		Yes	No	Yes	No
Physical abuse	Yes	37.39 (11.12)	43.27 (11.69)	44.40 (11.36)	48.84 (8.50)
	No	37.31 (8.52)	46.80 (10.26)	45.28 (10.03)	50.44 (8.22)

Table IV. Means (and Standard Deviations) on GSI by Abuse Type

		Nonphysical abuse	
		Yes	No
Physical abuse	Yes	1.35 (.86)	1.32 (.99)
	No	.93 (.56)	.55 (.59)

Figure I. Odds Ratios of Being "Unhealthy," Compared to Control Subjects



(PF = Physical Functioning, RP = Role Physical, BP = Bodily Pain, GH = General Health, VT = Vitality, SF = Social Functioning, RE = Role Emotional, MH = Mental Health)

Odds ratios marked with an asterisk indicate a significant difference from 1 ($\alpha = .05$).

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