THE RELATIONSHIP OF ABUSE TO WOMEN'S
HEALTH STATUS AND HEALTH HABITS

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The present study examined the relationship between exposure to abuse and women's health status and health behaviors in a sample of rural women. One hundred forty-eight women visiting a community health care center completed survey packets that included measures that assessed exposure to abuse, adoption of a negative psychological perspective, identified physical and mental health problems and health behaviors, and the extent of health care usage. The results indicated that exposure to abuse was positively and significantly related to the adoption of a negative psychological perspective, which in turn was negatively correlated with physical and mental health, as well as with the practice of healthy behaviors. Results also indicated that women who have been exposed to abuse engage in less healthy behaviors and utilize more health care resources than do women with no such exposure. Implications for improving the assessment and treatment of abuse in health care settings were discussed.

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Table of Contents

	Page
Abstract.....	3
List of Tables.....	5
List of Figures.....	6
Introduction and Overview.....	7
Prevalence of Abuse.....	8
Effects of Abuse on Health Status.....	17
Effects of Abuse on Health Behaviors.....	27
Approaches to Assessment of Abuse.....	34
Present Study.....	35
Method.....	37
Results.....	44
Discussion.....	51
References.....	60
Appendix A: Consent Form.....	68
Appendix B: Health Care Questionnaire (HCQ).....	70
Appendix C: Descriptive Characteristics for HCQ.....	72
Appendix D: Abuse Disability Questionnaire (ADQ).....	74
Appendix E: 12-Item Short Form Health Survey v.2 (SF-12v2).....	76
Appendix F: Health Habits Inventory (HHI).....	78
Appendix G: Recruiting Script.....	79
Appendix H: Instructions to Participants.....	80
Appendix I: IRB Letter.....	81

List of Tables

Table	Page
1. Prevalence Rates of Abuse by Study.....	16
2. Psychological Measures and Subscales.....	42
3. Types of Abuse Experienced by Level of Severity.....	45
4. Descriptive Characteristics of Psychological Measures.....	46
5. Model Summary for Factors Predicting Psychological Impairment.....	47
6. Coefficients for Final Model.....	48

List of Figures

Figure	Page
1. Health Care Usage by Exposure to Abuse.....	49
2. Health Habits by Exposure to Abuse.....	50

Introduction and Overview

Extensive research has been conducted on physical, mental, and sexual abuse and the related deleterious effects on women's health. Prevalence studies have been conducted on a wide array of samples, the results of which suggest that abuse is a severe problem in the U.S. and Canada (e.g., Moffitt & Caspi, 1999; Thompson, Saltzman, & Johnson, 2001). Numerous studies have been conducted linking abuse with poor health status in women, and results have shown that the negative health consequences of abuse extend beyond the impact of acute trauma injuries (e.g., Lesserman et al., 1997; Hathaway et al., 2000). Abuse has been shown to be associated with lasting detrimental health conditions, affecting women's global health status as well as mental health status (e.g., Walker et al., 1995; Hathaway et al., 2000). There is also a small area of research that indicates abuse negatively affects women's health behaviors, such that those who experience abuse engage in more risky health behaviors and fewer health-promoting behaviors (e.g., Young & Katz, 1998; McNutt et al., 2002).

Despite the abundance of published research linking abuse and negative health status in women, few studies have examined abuse's effects on women's psychological perspective of the world and this construct's relationship to health status. The current study has three aims: (1) to explore the relationship between the experience of physical, mental, and sexual abuse to psychological impairment; (2) to explore the relationship between psychological impairment associated with exposure to abuse and women's overall level of physical and mental health; and (3) to examine the relationship between

psychological impairment associated with exposure to abuse and women's health behaviors, including the use of health care resources.

Prevalence of Abuse

Injuries are a leading cause of death for females in the United States, and abuse is one of the most common causes of injury in women (Thompson, Saltzman, & Johnson, 2001). A common form of abuse that many women face is intimate partner violence, which is typically defined as including forced sex and other acts of physical violence accompanied by psychological oppression (Campbell, 2002). According to the National Crime Victimization Survey conducted between 1992 and 1996, violence inflicted by intimate partners (defined here as spouses, ex-spouses, boyfriends, and ex-boyfriends) amounts to one fifth of all violent crimes experienced by women in the U.S. (Moffitt & Caspi, 1999), and approximately 30% of all females murdered in both the U.S. and Canada are killed by their male partners (United States Center for Disease Control, 2001). Results from this survey also indicate that approximately 25% of women reported being raped or physically assaulted by their current or former spouse (United States Center for Disease Control, 2001). Of these victims, 39% report being injured (United States Center for Disease Control, 2001). Intimate partner violence only accounts for about 37% of abuse experienced by women, however, indicating that other forms of abuse are also important to study (National Center for Health Statistics, 2001.)

Unfortunately, only about one third of abused women openly discuss this problem with their health care provider, and although numerous health care institutions including

the American Medical Association, the American Academy of Family Physicians, and the American College of Emergency Physicians encourage screening for abuse during routine physical examinations (Tollestrup et al., 1999), most health care providers rarely do so (Coker, Smith, & King, 2000). The issue is a serious one, yet remains relatively unexplored by healthcare providers (Tollestrup et al., 1999).

Several studies have examined the prevalence of abuse in different settings. Dearwater et al. (1998) investigated the prevalence of partner violence in community hospital emergency departments. They assert that the emergency department is often the first and sometimes the only contact that abused women have with health care professionals, making it an important focus for researchers in this area. Community hospitals were chosen for the study because they typically serve a lower income population, can be found in numerous geographic areas, do not treat many severe trauma cases, have no residency programs, and have social service programs available (Dearwater et al., 1998). Six community hospitals in Pennsylvania and five in California were randomly selected to participate in an evaluation of a national training program for improving emergency department response to abused women.

The Patient Satisfaction and Safety Survey, developed by the authors, was administered to women 18 years or older entering the emergency department at the eleven sites. Within this questionnaire were four questions taken from the Abuse Assessment Screen (Soeken, Parker, McFarlane, & Lominak, 1998), a self-report measure used to screen for the presence of abuse from an intimate partner. The questions regarded past and present abuse and were presented in a yes-or-no format. Medical

records were also examined to extract demographic information and diagnosis at discharge. A total of 3455 women agreed to participate in the study and completed the survey.

Of the 3455 women, 2.2% reported coming to the emergency department due to injuries from physical abuse, and 12.6% reported experiencing physical abuse from an intimate partner within the past year. An additional 36.9% reported either being physically or emotionally abused in an intimate relationship during their lifetime.

While the above study examined community health settings, Tollestrup et al. (1999) conducted a study to estimate the prevalence rates of partner violence among members of a managed care organization (MCO). While the literature presents varying rates of partner violence, the authors assert that none of them necessarily are accurate for the population of women who are members of an MCO, whom they believe are more economically advantaged (Tollestrup et al., 1999). This study was aimed at estimating the prevalence of partner violence in an insured population as well as identifying health indicators that could help to identify women who are at high risk of partner violence.

The authors took a sample of 5,000 women from the Lovelace Health Plan, a health care provider with approximately 150,000 members. The names and phone numbers of the women in the sample were given to a commercial survey firm, who completed 2,418 telephone surveys. Both verbal and physical aggression were screened for using the Conflict Tactics Scale (Straus, 1979), which is designed to assess the number and level of psychological and physical attacks in which intimate partners engage (Tollestrup et al., 1999). A questionnaire developed by the authors was used to examine various health

indicators (i.e. use of alcohol, attitude towards nutrition, and exercise frequency). The health questions were adapted from nationally validated surveys including the 36-Item Short-Form Health Survey (SF-36; Ware & Sherbourne, 1992). Demographic data were also collected.

The overall prevalence of major verbal aggression for this sample was 12.8%, and the prevalence of physical aggression was 6.1%. Upon analysis of the demographic data, it was found that age of the woman and household income were both negatively correlated with verbal and physical aggression, and that number of children in the home was positively correlated with verbal and physical aggression.

Upon examination of the health data, Tollestrup et al. (1999) found that physical aggression was positively correlated with the number of days that a woman felt sad, a woman's inability to handle stress, and the average number of alcoholic drinks that a woman consumes per sitting. Surprisingly, physical aggression was not related to the participant's perception of general level of health. No explanation for this was posited by the authors.

Although lower than rates found elsewhere (e.g., Dearwater et al., 1998; Coker et al., 2000), the authors concluded that there is a significant prevalence of partner violence among female members of an MCO, occurring across all races, ages, incomes, and education levels. One explanation given for the low prevalence of partner violence in this sample is that women who experience violence and end the relationship may lose their insurance coverage if it was provided through their partner's job. Therefore it is possible that women who had recently experienced partner violence may not have been in

the sample. However, the literature reports that about half of all women who attempt to leave an abusive relationship eventually return to it (Griffing et al., 2002). Furthermore, others have discovered that women who are economically dependant on their partner are even more likely to return to him than are those with steady employment. Given the above, further research into the validity of the referent explanation is needed.

In an effort to accurately estimate the frequency of partner violence and to determine its correlates, Coker et al. (2000) conducted a study that simultaneously investigated physical assault, sexual assault, battering, and perceived emotional abuse in patients from two family practice clinics in Columbia, South Carolina. The authors state that primary care settings are important for researching partner violence since abusive men are often very controlling of their partner, and it may provide the only opportunity to gain a representative sample. To differentiate battering from physical abuse, the researchers adopted the definition of battering used by Smith, Danis, and Helmik (1998), which labels battering as, “a process whereby one member of an intimate relationship experiences psychological vulnerability, loss of power and control, and entrapment as a consequence of the other member’s exercise of power through the patterned use of physical, sexual, psychological and/or moral force.” (p. 2) Their main hypotheses were that past partner violence would be correlated with current partner violence, and that those who were currently victims of both physical and sexual assault would report more severe violence than those who were victims of physical assault alone.

The research team interviewed 1443 women who were seeking medical care in one of two family practice clinics. Their ages ranged from 18 to 65, and all were insured either

through Medicaid or another managed care provider. Potential participants were excluded if they had not been involved in an intimate relationship with a man for at least 3 months during their lifetime. After excluding these women, 1401 eligible women remained. Participants were then interviewed individually for 5 to 10 minutes by a female graduate student regarding the presence of violence in their intimate relationships. Physical violence was screened for using a shortened version of the Index of Spouse Abuse – Physical Scale (Hudson, 1991), which measures the severity of various physically violent experiences a woman reports having.

Results indicated that 20% of the sample had been exposed to some form of abuse in a current or recent relationship, with almost half of these experiencing physical assault. The lifetime prevalence rate for any type of partner violence was over 55%, and the lifetime rate for physical assault was over 37%. As expected, they found that having a history of partner violence was correlated with violence in later relationships. They also found support for their second hypothesis. Women who were currently experiencing physical and sexual assault reported greater severity of violence than did those experiencing physical assault alone. Those experiencing psychological abuse only had the lowest violence ratings.

Coker et al. (2000) found many correlates of partner violence. The strongest of these was alcohol use by the male partner, followed closely by drug use by the male partner. They reported that marital status and lower income were also associated with physical assault. Compared to married women, divorced women were about twice as likely to report past or current physical violence, and separated women were two to three times as

likely to report physical violence than were married women. Unemployment of either partner was related to physical and sexual abuse. Over 33% of the sample who had experienced either of these types of abuse had a disability that prevented them from working, which is double the rate of non-abused women. Since unemployed men were twice as likely to have drug or alcohol problems, these data may be confounded, because as stated above, alcohol use by the male partner was the strongest correlate found. Having an abusive father also increased women's risk for experiencing violence in intimate relationships. No racial differences were found for any type of abuse.

This study is similar to the one conducted by Tollestrup et al. (1999) because its sample consisted of women with some form of medical insurance. Since Coker et al. (2000) include women who are insured through Medicare, their sample presumably has a lower mean income, and therefore may be representative of a different population.

In addition to demographic variables, there are other factors that lead to an increased risk of partner violence. Marcus and Swett (2002), for example, suggest length of a relationship is a risk factor for violence. They state that as a relationship develops, the couple becomes more emotionally involved in the relationship, and so the partners feel a greater freedom to express their positive and negative emotions. And while the expression of emotion often strengthens a relationship, in some instances it can promote violence. According to this model, risk for partner violence increases as the length of the relationship increases due to a perceived freedom to express negative emotions. Emotions that promote violence are labeled risk emotions. According to Marcus and

Swett, (2002), the four strongest risk emotions are anger, negative affect, rage and rejection sensitivity, and insecurity and jealousy in men.

In order to test this hypothesis, the authors conducted a study involving undergraduates from one of two unnamed state universities. The sample included 134 males and 149 females, all of whom were involved in a relationship with a member of the opposite sex. Participants were given a questionnaire about their current relationship, which included questions regarding the length of the relationship, the number of times they engaged in a physical fight with their partner in the past year, and the severity of the injuries they had suffered (if any) as a result of the fight. They also completed the Interpersonal Record Form – Intimacy (Prager & Buhrmester, 1998) to rate the last experience they had with their partner that lasted longer than five minutes.

Results indicated that of the sample, over 12% had fought with their partner at least once in the past year, with almost 12% of the participants reporting an injury. Duration of the relationship was positively correlated with number of fights reported in the past year at the .01 level of significance, confirming that duration is a risk factor for violence in relationships.

While the preceding studies provide important data on the prevalence of abuse in the United States, none have cataloged the negative physical consequences due to experienced abuse. The next section discusses findings on the health status effects of partner violence.

Summary

Physical, sexual, and emotional abuse are serious problems in the United States and Canada. Abuse is one of the leading causes of injury in women, yet remains relatively undetected by health care providers. In an effort to better assess the scope of this problem, researchers have attempted to estimate the prevalence of abuse toward women in various settings. Partner violence prevalence estimates range from about 6% for physical abuse to over 55% for any lifetime abuse experiences. Study-specific prevalence rates are presented in Table 1. Risk factors for violence have also been identified. They include low household income, alcohol and drug use by either partner, unemployment of either partner, being in a long-term relationship, and having a history of violent relationships.

Table 1.

Prevalence Rates of Abuse by Study

Authors	N	Physical Abuse	Any Abuse*
1. Dearwater et al. data	3455	12.6%	36.9% ¹
2. Tollestrup et al. data	2418	6.1%	N/A
3. Coker et al. data	1433	11.4%	55.1% ¹
4. Marcus & Swett data	283	11.7%	N/A

*Lifetime prevalence of physical, sexual, or emotional abuse.

Effects of Abuse on Health Status

Although there are a growing number of studies that examine the health impact of physical abuse, most have focused on the psychological rather than the physical consequences of abuse, or have concentrated on sexual abuse alone. One such study was conducted by Walker et al. (1995). It is well documented that sexual victimization is correlated with many psychological symptoms, including posttraumatic stress disorder, low self-esteem, anxiety, depression, eating disorders, sexual dysfunction, and alcohol and drug abuse (e.g., Koss, Woodruff, & Koss, 1991). Walker et al. (1995) conducted a study on the physical correlates of lifetime sexual abuse. It was hypothesized that, compared to women with no sexual victimization history, women with such histories would have more medically unexplained physical symptoms, higher rates of psychological disorders, and a greater extent of physical, social, and emotional disability.

The study was conducted at a tertiary medical facility in Seattle, Washington. All English-speaking women 18 years of age and older who presented with either irritable bowel syndrome or inflammatory bowel disease were considered eligible for participation in the study. The selection of these two diagnoses was the result of research done on women with chronic pelvic pain. In an earlier study, Walker et al. (1992) found that of 100 women presenting with chronic pelvic pain at a gynecology clinic, those with higher rates of sexual victimization also had higher rates of depression, panic disorder, and drug abuse, as well as a greater number of medically unexplained physical symptoms. They also assert that one-third to one-half of all women with chronic pelvic pain may have a history of either irritable bowel syndrome or inflammatory bowel disease. Therefore,

these two disorders were chosen for examination. Campbell and Lewandowski (1997) note that roughly 40% to 45% of all abused women are raped by their intimate partner, which they theorize results in the high incidence of pelvic disease, vaginal and anal tearing, and bladder infections that abused women experience.

Upon examination, the gastroenterologist decided if the women were eligible for the study and then asked patients if they would be willing to participate. This procedure yielded a total of 111 patients who were individually interviewed using the NIMH Diagnostic Interview Schedule (Robins et al., 1981). Results from this survey generated DSM-III-R diagnoses. Participants also completed a number of self-report instruments, including the SF-36 (Ware & Sherbourne, 1992), which measures perceived physical and mental health, and functional disability.

Results indicated that 41% of the participants had experienced severe sexual victimization, and the remaining 59% had experienced less severe or no victimization. Severe victimization was defined as involving penetration of any part of the woman with a penis or other object, and less severe was defined as unwanted sexual contact that did not involve penetration. Rates of major depressive disorder, dysthymic disorder, somatization disorder, generalized anxiety disorder, obsessive-compulsive disorder, and alcohol abuse were significantly higher in the group of women who had suffered severe sexual victimization. This group also had a higher rate of medically unexplained physical symptoms. Results from the SF-36 (Ware & Sherbourne, 1992) did not indicate a difference between groups with respect to functional disability except in the area of

emotional functioning, where the severe victimization group showed greater deficits in function.

Lesserman et al. (1997) also studied women with gastrointestinal (GI) disorders. They focused on women with either a history of “‘contact’ sexual abuse” (Lesserman et al., 1997, pg. 153), defined as either rape or touch, or with a history of life-threatening physical abuse. A life-threatening attack was defined as one in which the intent of the assailant was to seriously harm or kill the victim. The goal of their study was to determine what specific aspects of abuse led to a poor overall level of health.

Their sample comprised 121 female patients of a gastroenterology clinic at the University of North Carolina who had a history of either contact sexual abuse and/or of life threatening physical abuse. Abuse history was determined by a structured interview developed by the authors. Health status was determined on the basis of results from six different measures. Included were a pain severity measure, the number of non-gastrointestinal physical symptoms reported over the past six months, the number of days the patient was bed-ridden due to illness over the past three months, the number of surgeries the patient underwent in their life, the amount of psychological distress one experienced determined by the Global Symptom Index of the Symptom Checklist-90 (Derogatis & Spitz, 2000), and the level of functional disability one experienced determined by the Sickness Impact Profile (Bergner, Bobbitt, & Carter, 1981).

It was found that overall level of health was poorest in women who had suffered serious injury during the physical attack, who had been attacked by several assailants, and who experienced numerous life threatening physical attacks. These findings are

important because they interrelate the health impact of specific factors of abuse instead of simply reporting on its presence or absence.

More recently, Thompson, Saltzman, and Johnson (2001) studied risk factors for physical health symptoms due to abuse exposure. Their data came from the Canadian Violence Against Women Survey (Statistics Canada, 1994) carried out in 1993. A random-digit dialing method was used to contact women by telephone, which resulted in a sample of 12,300 women. From this sample, the authors used a subset of 1,946 women who reported having experienced physical or sexual assaults by a male since the age of 16.

Forty three percent of this sample reported being physically hurt during an assault, 76% of which had suffered minor injuries, and 24% of which had suffered severe injuries. The most common injuries reported were cuts, bruises, scratches, burns, and broken bones.

Three types of risk factors were investigated: background variables, assault context variables, and emotional abuse variables. The results indicated that these three types of variables were significantly related to risk of injuries. It was found that women were at a higher risk of injury if a woman or her assailant had a family history of abuse, if the abuse began before the woman became married, if children were present during the assault, if the assailant had been intoxicated during the assault, if the woman was victimized on multiple occasions, if the woman reported fearing for her life at any time due to abuse, and if her assailant had also engaged in emotional abuse. Knowing what

factors put women at risk of injury is important to health care professionals and researchers so that they may better combat this problem.

Knowing that abuse is strongly associated with negative health status, it is important to examine the health care usage patterns of abused women. Hathaway et al. (2000) conducted a population-based study on the health status and health care use of women experiencing partner violence. The purpose of the study was to examine the link between partner violence and various mental and physical health problems, and to examine the pattern of health care usage in a population-based sample of Massachusetts residents. The Massachusetts Department of Public Health included a section regarding partner violence in their 1998 Massachusetts Behavioral Risk Factor Surveillance System (MBRFSS). The MBRFSS is a random-digit-dial telephone survey of adults over the age of 18 that aims to collect information on a variety of health issues. It included 3 questions that screened for partner violence as well as questions regarding corollary violence-related health issues.

The survey included 2043 women over the age of 18. About 6% of the sample reported having experienced some form of partner violence during the course of the past year, and almost 3% reported being physically assaulted by their intimate partners during the past year. Of those who experienced abuse, one third reported attending some form of counseling and one sixth reported seeking medical attention due to the abuse. These women were more than three times as likely to report feeling depressed than those who had not reported any type of abuse. The abused group also reported a significantly higher number of injuries and physical and emotional disabilities. Twice as many abused

women reported smoking as compared to non-abused women. Thirty nine percent of abused women reported having an unwanted pregnancy in the past 5 years, compared to only 8% of non-abused women.

Similarly, Brokaw et al. (2002) conducted a study in order to identify health variables associated with partner violence. They recruited participants from a large urban emergency department in Albuquerque, NM. Thirty five shifts were randomly assigned to trained recruiters who screened all non-critical female patients between 18 and 50 years old entering the emergency department during the recruiting shifts. Those who agreed to participate were interviewed privately. Abuse was screened for by asking, “Have you ever been hit, kicked, punched, slapped, or physically threatened by a husband, ex-husband, boyfriend, or ex-boyfriend?” (Brokaw et al., 2002, pg. 32) Patients were then labeled potential participants and placed into one of three study groups: acute partner violence (occurring within the past year), history of partner violence (occurring over 1 year ago), and no partner violence. Potential participants were then scheduled for a 2-hour appointment, which included a one-on-one interview, a pelvic examination, and urine and blood tests to assess nutrition, screen for sexually transmitted diseases, and to screen for drug use. Interview questions were based on the National Health and Nutrition Examination Survey III. A section regarding demographic data was also included.

Over 47% of the 421 women initially screened for partner violence reported having a history of abuse. Over 25% of these stated that the most recent assault had occurred in the past year, 73% reported that the most recent physical assault by their intimate partner had occurred more than 1 year ago, and 1% of the women did not specify when the most

recent assault took place. Of these 421 women, 110 completed the examination as outlined above.

Results from the demographic data indicated that the acute partner violence group did not differ significantly from the history of partner violence group in terms of mean income, but both groups had a significantly lower mean income than women in the no violence group. Fifty nine percent of the acute group had never been married, while 47% of the history of violence group reported being divorced, separated, or widowed.

After controlling for age, ethnicity, and income, those who used cocaine were five times as likely to be in the acute group than those who have never used cocaine. Over half of the acute and history of partner violence groups tested positive for a sexually transmitted disease (STD), whereas less than one-fourth of the no partner violence group tested positive for an STD. However, the number of sexual partners one had did not differ by group. Campbell and Lewandowski (1997) note that roughly 40% of all physically abused women are raped by their male partners, and that protection is not used in two thirds of these incidents. They suggest this fact can explain the high rate of STDs in abused women, given they have roughly the same number of sexual partners as do non-abused women in this study. While both acute and history of violence women were more likely than the non-abused women to report having nightmares on a weekly basis and more likely to have suicidal ideation, the acute group was also significantly higher than the history of violence group in both of the preceding categories.

Unlike the study conducted by Hathaway et al. (2000), the above study assessed a sample of hospital patients as opposed to the general population. This is an important

difference because it solely examines women who have a physical problem, and allows the researchers to determine what percentage of women with acute physical trauma also experience abuse. Based on the above information an inference concerning the amount of health care resources that are allotted to women who experience abuse can be made. Another major strength of the study is that it included a physical examination of its participants, as opposed to relying solely on self-report data. However, a severe limitation of the study is that it did not ask about the severity of the abuse that the women suffered. Women who may have been involved in a single incident were included in the same category as women who may have been severely beaten on multiple occasions, thus possibly tainting the integrity of the groups. Perhaps this could help explain the difference between this study's reported level of abuse and levels that have been reported in similar studies. It is also unfortunate that heroin use was not examined, since needle sharing is a risk factor for STDs and may have been able to explain the differing rates of STDs found in abused and non-abused women. However, its results clearly indicate that women who experience abuse in their lives greatly differ from those who do not.

As discussed in several of the above studies, having a lower level of income appears to be related to abuse experience. However, poverty is also associated with many negative health consequences (Feinstein, 1993). Therefore health status data collected on abused women living in poverty may be invalid. Sutherland, Sullivan, and Bybee (2001) conducted a study to determine if women's health status was affected by abuse, poverty, or a combination of the two factors. They placed four ads in a free newspaper in order to recruit participants. The first two ads were aimed at women who had experienced abuse

by an intimate partner, and the last two were aimed at women who had not. One of the ads in each category targeted low-income women, whereas the other targeted middle-income women. This procedure resulted in a total of 397 participants who were then categorized into one of four groups: low-income women with abuse exposure, low-income women with no exposure, middle-income women with abuse exposure, and middle-income women with no exposure. A modified version of the Conflict Tactics Scale (Straus, 1979) was used to determine the amount of abuse that the participant had experienced over the last six months. Income level was determined by adjusting the woman's household income for the number of adults and children in the house, and then expressed as a percent of the U.S. Census Poverty Threshold Index. Physical health was determined through use of a modified version of the Cohen-Hoberman Inventory of Physical Symptoms (Cohen & Hoberman, 1983). Modifications were made to account for symptoms often reported by victims of abuse.

Physical symptomatology was significantly related to physical abuse. Of the 205 women in the abused group, they reported that their partner physically attacked them two to three times a month, on average. This group was significantly more likely to report having physical symptoms, the most common of which were sleep difficulties, headaches, muscle tension, and fatigue. A moderate negative correlation was also found between income and physical symptomatology. Also, women with lower incomes reported a significantly higher rate of abuse. The authors concluded that even though women with lower incomes were at an increased risk for experiencing physical health symptoms, victims of abuse who had higher incomes were found to be at risk for

experiencing health symptoms as well. Therefore, abuse was found to significantly affect women's health, even when accounting for income.

Clearly, it is a well-established fact that exposure to abuse is associated with numerous negative health consequences. These ill effects extend beyond acute injuries that are directly related to physical violence. Koss, Koss, and Woodruff (1991) have proposed several theories as to how abuse could affect one's overall level of health. They believe that victims of abuse may misattribute emotional responses to abuse as symptoms of a physical disease. Secondly, they believe that legitimate preexisting physical conditions could be aggravated by abuse, or that one's tolerance for dealing with physical conditions may be reduced due to the increase in stress that accompanies abuse. A third theory they posit is that the body's immunological resistance to disease may be lowered due to increased stress, thus making one more susceptible to disease. They validate this by citing literature documenting the association between increased stress and illness (e.g., Kiecolt-Glasser & Glasser, 1987). However, these theories have yet to be scientifically explored.

While the preceding section discusses health status, it does not examine how abuse affects the way in which women take care of their health. The next section will discuss the impact of abuse on women's health habits.

Summary

It has been established that abuse is associated with negative health consequences. Psychological symptoms of abuse include posttraumatic stress disorder, low self-esteem, anxiety, depression, eating disorders, obsessive-compulsive disorder, sexual dysfunction,

and emotional disability. There are also many physical symptoms that are commonly experienced by abuse victims. While acute injuries such as cuts, scratches, bruises, burns, and broken bones result directly from abuse, there are other common ills that can be considered secondary effects of abuse. These include gastrointestinal disorders such as inflammatory bowel disease and irritable bowel syndrome, nightmares, headaches, tension, and lack of energy. One possible mechanism by which these secondary symptoms occur is the misattribution of emotional responses as physical symptoms. Another explanation is that abuse impairs the immune system's ability to function, creating a susceptibility to illness. Neither of these theories have been empirically tested.

Effects of Abuse on Health Behaviors

The literature concerning the effects of abuse on women's health behaviors is relatively sparse. Health behaviors refer to practices that can affect one's overall level of health. These include behaviors that are likely to increase one's health, such as exercising, and unhealthy behaviors, such as smoking. Petersen, Gazmararian, and Andersen-Clark (2001) conducted a study to assess the mental health, health behaviors, and health care use of women who experience partner abuse. A random sample of 392 participants was selected from women living in Memphis, Tennessee, and who were enrolled in the TennCare managed care health plan. Potential participants were first contacted by telephone, and for those from whom consent was obtained, an in-person interview was scheduled at the participant's home. Exposure to abuse was determined by asking the sole question, "During your lifetime, have you experienced physical assault or

abuse by a partner?” (Petersen, Gazmararian, & Andersen-Clark, 2001, pg. 118) Mental health was assessed across three constructs: depression, self-esteem, and experiences of daily stressors. Depression was measured using an abridged version of the Centers for Epidemiologic Studies Depression Scale (Kohout, Berkman, Evans, & Cornoni-Huntley, 1983), and the latter two constructs were measured using scales developed by the authors. Health care use was measured by self-reported number of outpatient visits to a health care facility. The health behaviors assessed were amount of exercise and the use of cigarettes and alcohol. Exercise was labeled as any physical activity engaged in during the past month for a minimum of 15 minutes at a time. Participants were deemed to use cigarettes if they reported any amount of smoking at the time of the interview. Participants were deemed to use alcohol if they reported consuming at least one alcoholic drink during the past month.

Upon analysis of the data, it was found that 28% of the sample reported having experienced some form of partner violence. As was expected, women reporting a history of violence were significantly more likely to report depression, poor self-esteem, and had significantly more daily stressors. Women who experienced abuse were also more likely to utilize more health care services.

However, no differences were found in regard to health behaviors by experience of abuse. This may be due to a number of reasons. Firstly, abuse was assessed with only one yes-or-no question. Therefore, women who had a few slightly violent experiences were categorized with those who had multiple extremely violent experiences, which may have confounded the validity of this group. Secondly, the question asked about women’s

lifetime abuse history (excluding experiences before the age of 18) without indication of the last violent experience. Women who have not recently experienced partner violence may differ from those who have with respect to their health practices. Were this true, the validity of this group would be further confounded. The last major limitation that possibly affected the results deals with the assessment of the health behaviors. Women who reported any smoking were all categorized as smokers. Future research should separate infrequent smokers from heavy smokers, because frequency of cigarette use has been found to be positively related to health risk (Lebowitz & Burrows, 1977). Similarly, all women who reported consuming an alcoholic drink were categorized as using alcohol. Future research should be careful about making the distinction between casual drinkers and heavy drinkers. For example, Tollestrup et al. (1999) operationally defines an alcohol user as one who typically consumes three or more drinks per sitting. Using more stringent definitions such as this could significantly affect the results.

In contrast, Young & Katz (1998) found that victims of sexual abuse were at a significantly increased risk of engaging in a number of unhealthy or “risky” behaviors. Theirs was a sub-study of a project intended to assess the prevalence of human papillomavirus, and did not incorporate all of the data collected, nor all of the original participants. Women were recruited from a community health center in an impoverished section of Winnipeg, Canada. All women who entered the center in order to receive a Papanicolaou test were considered eligible for the study. Once consent was obtained, participants underwent a clinical examination, laboratory tests to detect STDs, and a one-on-one interview regarding sexual history and current practices. Out of the total number

of participants, 843 answered a question about their sexual abuse history. Reported results are from this set of participants.

It was found that almost 37% of the sample reported a history of sexual abuse, with the majority of those (74%) having been abused only as a child. It was found that women who have been sexually abused engage in significantly more risky sexual practices than do non-abused women. Abused women were significantly more likely to engage in voluntary sexual intercourse for the first time before they were 12 years old. Abused women also had a significantly higher amount of sexual partners during the past year, and were more than 3 times as likely than non-abused women to have had more than 20 sexual partners during their lifetime. Hence, it is no surprise to find that abused women in this study were more likely to have an STD.

Although the study performed by Brokaw et al. (2002; see section II) found no difference between abused and non-abused women with respect to the number of reported sexual partners, Young and Katz (1998) provide strong evidence that women who have been victims of sexual abuse do in fact significantly differ in their sexual practices from those who have no such history. There are key differences between the two studies that may explain the conflicting results. The former only inquired into participants' physical abuse history, while the latter only screened for sexual abuse. Neither team of researchers excluded women who had experienced other forms of abuse. However, given that recent physical and sexual abuse are highly correlated (e.g. McNutt et al., 2002), it is doubtful that this could explain the difference. Another way the studies differ is that Young and Katz (1998) had a sample of women who, for the most part, had experienced

childhood sexual abuse. It is possible that experiencing such abuse before a certain age leads to the development of abnormal beliefs and practices which are carried out throughout life. Whether or not the aforementioned set of risky sexual behaviors is consistent with a history of childhood sexual abuse victims only or if they apply to recent sexual abuse victims as well must be further investigated.

McNutt et al. (2002) sought to determine the symptomalogical and behavioral differences between abused and non-abused women. Their study was conducted at two primary care facilities in the northeastern United States. Women between the ages of 18 to 44 who visited either of the two sites and who had a telephone number were considered eligible for participation in the study. Five hundred eighty four women agreed to participate and were interviewed over the phone. The five forms of abuse measured were recent physical, sexual, and emotional abuse, and past physical and sexual abuse. A ratings scale of 0 (no abuse), 1 (mild abuse), and 2 (severe abuse) was used to categorize participants. The physical aggression section of the Conflict Tactics Scale (Straus, 1979) was used to assess the level of recent physical abuse that the participants had experienced. To assess recent sexual abuse, women were asked if they were forced to have sex (2) or felt afraid during sexual relations (1) within the past year. Emotional abuse was assessed with a 7-question survey developed by the authors. Physical and sexual violence occurring more than one year ago were assessed in a similar manner. The somatization scale of the PRIME-MD (Spitzer et al., 1994) was used to measure the number of non-specific physical symptoms experienced by the participants. Finally, four

health behaviors were measured: smoking cigarettes, using alcohol, sleeping less than 7 to 8 hours daily, and not eating breakfast daily.

Out of their sample, 47% had experienced some form of recent abuse. Almost all of the women who reported recent physical or sexual abuse also reported recent emotional abuse. It was also found that as the severity of physical abuse increased, the severity of sexual and emotional abuse also increased. Women who reported having a history of any type of abuse also reported a significantly greater number of physical symptoms during the past month than did women with no history. Physical symptomatology was highest for women who experienced recent abuse. The authors note that engaging in unhealthy behaviors will certainly contribute to a poor level of health, and it was found that women who experienced severe levels of abuse were more likely to engage in a variety of unhealthy behaviors. They recommend that abuse intervention programs begin to target unhealthy behaviors, particularly smoking. But before such a strategy is implemented, further research is needed to identify a comprehensive range of unhealthy behaviors in which victims of abuse most commonly engage.

Most recently, Straight, Harper, and Arias (2003) examined the effect of psychological abuse on health status and health behaviors. For their study, 151 female college students were recruited for participation. To assess psychological abuse, an adapted version of the Psychological Maltreatment of Women Inventory was used (Tolman, 1989). Items regarding living arrangements were taken out of the instrument due to the age of the participants. Health behaviors were measured using an instrument

developed by the authors. Targeted behaviors included sleep, exercise, smoking, alcohol use, and illegal drug use. The SF-36 was used to measure health status.

Results of this study indicate that psychological abuse was significantly related to illegal drug use, but not related to any of the other health behaviors listed above. The authors assert that psychological abuse may affect only the most risky behaviors. Results also showed a significant negative relationship between psychological abuse and health status, after controlling for physical victimization and substance use. Although the results of this study partially support the hypothesis that abuse is related to engaging in unhealthy behaviors, only psychological abuse was studied. Further research must be conducted to determine if physical and sexual abuse are more significantly related to engaging in unhealthy behaviors.

Summary

To date, not much is known about the health practices of victims of abuse. In order to broaden this area of knowledge, researchers must take care to properly design studies with sufficiently sensitive variable definitions so that proper data analysis is possible. Despite the lack of literature on this topic, there does appear to be a connection between abuse and women's health practices. Some evidence exists to establish that a history of sexual victimization is associated with engaging in risky sexual behaviors, including having sexual intercourse for the first time at an early age and having multiple partners. Having experienced sexual or physical violence has also been found to be associated with other unhealthy behaviors, such as smoking cigarettes, using alcohol, maintaining an unhealthy diet, and maintaining poor sleeping habits.

Approaches to Assessment of Abuse

There are multiple approaches to assessing abuse, the most popular of which is the collection of self-report data. Of the many studies that utilize this method, some use instruments that explicitly inquire about abusive experiences, whereas others implicitly screen for abuse through indirect questions. The Conflict Tactics Scale (Straus, 1979), a popular measure of abuse, is comprised of items that inquire about specific experiences a woman may have had (being hit, kicked, punched, etc.). Because it does not directly ask participants if they have been abused, it is an implicit measure of abuse. Other studies directly ask participants if they have ever been abused (e.g., Peterson, Gazmarian, & Clark, 2001).

Acierno, Resnick, and Kilpatrick (1997) state that using explicit methods of assessment often result in lower estimates of abuse because many abused women do not identify their experiences as “abuse.” For this reason, implicit measures of abuse are more appropriate when examining the relationship of abusive experiences to health consequences. However, the present study will examine how one’s perception of one’s experiences and one’s world is related to health. McNamara and Brooker (2000) have shown that when women identify themselves as abused they are more likely to have adopted a disabling psychological perspective. The degree to which subjects have adopted a disabling psychological perspective due to being abused refers to the ways in which abuse experiences negatively affect women’s views about themselves and their ability to function in their day-to-day lives. A disabling psychological perspective can have wide-ranging consequences that include impairment in social, occupational, and

interpersonal functioning (McNamara & Brooker, 2000). Because the present study will examine how women's perceptions of abuse are related to mental and physical health, an explicit measure of abuse will be used.

Summary

Some studies implicitly assess abuse exposure while others do so implicitly. Although research indicates that implicit measures may be more accurate in estimating the prevalence of abuse, the present study will examine how one's perception of abuse is related to health. Therefore, an explicit measure of abuse will be used in the present study.

Present Study

Although there are a number of studies that have investigated the physical and mental health effects of abuse, none have examined the health effects of perceived psychological impairment associated with exposure to abuse. The present study aims to screen for physical, sexual, and emotional abuse in rural outpatient clinics as well as to measure the negative physical and psychological consequences of intimate partner violence. Furthermore, the present study will examine the relationship of abuse with women's perceived psychological impairment, and also determine its association not only with general physical and mental health status, but also with women's health habits, including the use of health care resources.

Hypotheses

Hypothesis 1. Research on the Abuse Disability Questionnaire (ADQ) has shown that exposure to interpersonal violence is positively correlated with the development of a disabling psychological perspective (McNamara & Brooker, 2000). It is therefore hypothesized that this relationship will be found in the present study, such that a significant positive relationship will be found between total exposure to abuse and the extent to which a perceived impairment or a disabling psychological perspective has been developed.

Hypothesis 2. Numerous studies have linked abuse exposure to mental and physical health problems (e.g., Walker et al., 1995; Hathaway et al., 2000), as well as to engaging in less healthy behaviors (McNutt et al., 2002). Because research on the ADQ has demonstrated that psychological impairment due to abuse exposure is indicative of difficulties in day-to-day functioning as well as to more chronic conditions (McNamara & Brooker, 2000), in the present study it is hypothesized that perceived psychological impairment will be significantly negatively related to mental health, physical health, and health behaviors.

Hypothesis 3. Previous studies have reported that women exposed to abuse utilize a greater amount of health care resources than do women with no abuse history (Petersen, Gazmararian, & Andersen-Clark, 2001; Ulrich et al., 2003). Therefore the current study hypothesizes that a similar pattern will be found, with abused women reporting a

significantly higher number of visits to a health care provider and taking a greater number of prescription medications than non-abused women.

Hypothesis 4. Previous research has demonstrated that abused women engage in more negative health behaviors, including higher rates of unsafe sexual practices (Young & Katz, 1998), poor dieting habits (McNutt et al., 2002), higher rates of tobacco and alcohol use, and lower rates of exercise (Petersen, Gazmararian, & Andersen-Clark, 2001). Based on this research it is hypothesized that abused women in the current study will also engage in more negative health behaviors than non-abused women.

Hypothesis 5. Lastly, past studies have linked various negative health behaviors with negative health status, including drug abuse (Walker et al., 1992), risky sexual practices (Young & Katz, 1998), smoking (Hathaway et al., 2000; McNutt et al., 2002), excessive use of alcohol (McNutt et al., 2002), and poor dieting habits (McNutt et al., 2002). Thus, it is believed that health habits will be significantly related to health status.

Method

Participants

All non-pregnant, female patients 18 years of age or older entering one of five community health clinics operated by the Ohio University College of Osteopathic Medicine were considered eligible to participate. Using a recruiting script (see Appendix F), patients were informed of the study by the front desk attendant at each clinic and

asked if they would be willing to complete a packet of surveys, which would take approximately 15 to 20 minutes to complete. Women were also informed that refusing to participate or deciding to discontinue their participation at any time would not result in any negative consequences. Patients were assured that participation would be completely voluntary, and that all information submitted would remain anonymous and confidential. Two hundred survey packets were distributed equally to 5 outpatient medical clinics in Southeastern Ohio, and 157 were returned. Nine packets were returned incomplete and therefore not included in any of the subsequent analyses. This yielded a return rate of 74%. The final sample consisted of 148 female subjects who visited a health care provider between February and March of 2003.

Measures

Health Care Questionnaire (HCQ). A short questionnaire was developed for this study to obtain relevant health care information from each subject, including the number of visits to a health care provider in the previous 6 months, the number of prescription and non-prescription drugs taken in the previous 6 months, and information regarding diet and activity level (see Appendix C). Information obtained from this questionnaire was used to understand how health care utilization relates to abuse. A health care usage score (HCU) was derived from this questionnaire by adding the number of reported visits to a health care provider and the number of prescription drugs taken.

The Abuse Disability Questionnaire (ADQ). The Abuse Disability Questionnaire measures perceived psychological impairment associated with exposure to abuse

(McNamara & Brooker, 2000; see Appendix D). It is unique from other abuse questionnaires in that it does not assess clinical psychological symptomatology, but instead measures the extent to which a, “disabling psychological perspective” has been adopted (McNamara & Fields, 2000, p. 893).

This questionnaire is segmented into three parts. The first part consists of a demographic section containing questions about age, race, education level, and marital status. The second part requires subjects to rate the extent to which they have experienced all of the following: psychological/emotional abuse, physical abuse, and sexual abuse. Ratings are made on a 5-point Likert-type scale ranging from 0 (none) to 4 (excessive). These ratings are then summed to obtain the total level of abuse that the subject has experienced. Finally, the third part comprises 30 questions that deal with the subject’s feelings and beliefs about various aspects of their lives. Subjects respond by using a 5-point Likert-type rating scale ranging from 5 (strongly agree) to 1 (strongly disagree). The total of the 30 responses represents the subject’s total impairment score.

A factor analysis conducted on the ADQ revealed eight distinct factors within the 30-question impairment section (McNamara & Brooker, 2000): (a) relationship disability, (b) life restriction, (c) psychological dysfunction, (d) health status issues, (e) substance abuse, (f) inadequate life control, (g) anxiety, and (h) concern with physical harm. All but the substance abuse factor achieved test-retest reliability at the .05 significance level (McNamara & Brooker, 2000). Internal consistency (Cronbach’s $\alpha = .88$) and two-week test-retest reliability ($r = .76, p < .002$) for the total impairment scale are high (McNamara & Brooker, 2000).

McNamara and Fields (2001) established the construct validity of the ADQ in a study conducted at two domestic shelters in Ohio. One hundred ninety nine participants were recruited from these two sites and asked to complete the ADQ the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964). Results indicated that the total impairment score of the ADQ was significantly and negatively correlated with self-esteem, showing that a high level of psychological impairment is associated with low self-esteem. A significant and negative correlation was also found between the total abuse score and the social desirability scale, showing that a high level of abuse is associated with a low level of perceived social desirability.

12-Item Short Form Health Survey version 2 (SF-12v2). The SF-12v2 (see Appendix E) is a brief measure of general health status that was developed to be a shorter alternative to the 36-Item Short Form Health Survey (SF-36), which is a highly validated instrument (Ware & Sherbourne, 1992; McHorney, Ware, & Raczek, 1993; McHorney et al., 1994). It fits conveniently on one page and takes about two minutes to complete. The SF-12v2 is comprised of the Physical Component Summary (PCS) and Mental Component Summary (MCS) scales, which together measure eight constructs: physical functioning, role limitations due to physical health problems, bodily pain, general health, vitality, social functioning, role limitations due to emotional problems, and mental health (Ware et al., 2002).

Both the PCS and MCS scales of the SF-12v2 were constructed to accurately reproduce their SF-36 counterparts. A forward-stepwise regression analysis led to the identification of ten items that succeeded in reproducing both SF-36 summary scales, and two additional items were added to account for all eight constructs. An initial validation study showed that these 12 items are highly predictive of PCS-36 scores ($r = .95$) and MCS-36 scores ($r = .97$; Riddle, Lee, & Stratford, 2001). Test-retest reliability was estimated using data from U.S. population surveys (McHorney, Kosinski, & Ware, 1994). Results indicated that the reliability of both the PCS-12 ($r = .89$) and the MCS-12 ($r = .76$) were satisfactory for group-level analyses.

In order to test further the validity of the SF-12v2, Ware et al. (2002) analyzed data from the National Survey of Functional Health Status (McHorney, Kosinski, & Ware, 1994) and the Medical Outcomes Study (Stewart & Ware, 1992). A four group test of validity was conducted on one group with minor medical conditions only, one with serious medical conditions, one with mental conditions only, and one group with both serious physical and mental conditions. Results of the SF-12v2 analyses were compared to previous SF-36 analyses of the same data sets. In comparisons of groups with varying physical conditions, it was concluded that the PCS-12 reached the same statistical conclusions as the PCS-36, with only a 5-10% reduction in validity. The MCS-12 performed equally as well as the MCS-36 when comparing groups of varying mental conditions.

Health Habits Inventory (HHI). The Health Habits Inventory (see Appendix F) is a one-page instrument containing 16 items related to such habits as eating, smoking, use of seatbelts, exercising, practicing safe sex, using drugs and alcohol, and knowing one's blood pressure and cholesterol level. Two-week test-retest reliability was established in a pilot study using 21 graduate-level nursing students ($r = .81$; Shriver & Scott-Stiles, 2000). Additionally, "face and content validity were supported by three nursing faculty." (Shriver & Scott-Stiles, 2000, pg. 310) Internal consistency for this study's sample was moderate (Cronbach's $\alpha = .64$).

Table 2.

Psychological Measures and Subscales

Variable Name	Possible Range
HCQ	
HCU	N/A
ADQ	
Abuse Exposure	0 - 12
Psychological Impairment	30 - 150
SF-12v2	
PCS	0 - 100
MCS	0 - 100
HHI	0 - 22

Note. HCQ= Health Habits Questionnaire, HCU = Health Care Usage, ADQ = Abuse Disability Questionnaire, SF-12v2 = 12-Item Short Form Health Survey version 2, PCS = physical component score, MCS = mental component score, and HHI = Health Habits Inventory.

Procedure

Potential participants were informed of the study upon arrival and check-in at local community health care facilities. Those willing to participate were given an informed consent form (see Appendix B) along with a packet containing the four questionnaires which were ordered as such: HCQ, HHI, SF-12, and ADQ. Packets were labeled numerically, and the participants' names did not appear anywhere on the packets in order to ensure that all data remained anonymous. After completion of the surveys, participants placed the questionnaires in a manila envelope, sealed it, and returned the packet to the front desk.

Data Analysis

First, descriptive statistics for the demographic items and each of the psychological instruments were computed. To test the first hypothesis, that women who experience more abuse will have a more disabling psychological perspective, a correlation was conducted between total level of abuse scores on the ADQ and total impairment scores on the ADQ. To test the second hypothesis, that psychological impairment is significantly related to general physical and mental health as well as to health habits, a multiple regression analysis was conducted in which the total psychological impairment score on the ADQ was the criterion variable, and the three predictor variables were: (1) PCS-12 and (2) MCS-12 scores to measure physical and mental health, respectively, and (3) scores on the HHI to measure health habits. To test the third hypothesis, that women who experience abuse will utilize a greater amount of health care resources, a two-samples t-test was conducted between the group of women who report experiencing abuse and the

group of women who do not. The dependent variable, utilization of health care resources, was calculated from responses on the HCQ. The fourth hypothesis stated that women who experience abuse will engage in less healthy behaviors than women with no exposure to abuse. To test this, a two-samples t-test was conducted between the group of women who report experiencing abuse and the group of women who do not. The dependent variable in this analysis was participants' scores on the HHI. Lastly, the relationship between health habits and health status was explored by examining the correlation between these two dimensions.

Results

Sample Characteristics

The final sample had the following characteristics: age ($M = 38$ years, $SD = 12.41$ years, range 18-78), and years of education ($M = 13.65$ years, $SD = 2.63$ years, range 6-22). Over 95% of the sample was Caucasian, 2% were African American, 1% was Native American, and 2% classified themselves as "other." This sample is representative of the demographic makeup of Athens County, where data were collected. Ninety five percent of Athens County residents are Caucasian, 3% are African American, 1% is Native American, and 2% is of another race (U.S. Census Bureau, 2000). Approximately 61% of the sample reported being married, 23% reported being single, 12% of the sample reported being divorced, and 4% did not fall into any of the above categories. Refer to Table 3 below for information on type and severity of abuse experienced.

Table 3.

Types of Abuse Experienced by Level of Severity

Type	None	Some	Moderate	Much	Excessive
Psychological	45.7	16.4	14.3	15.0	8.6
Physical	67.1	15.7	6.4	5.7	5.0
Sexual	68.6	17.9	7.9	2.9	2.9

Assessment of Differences at Data Collection Sites

A one-way ANOVA analysis was conducted and revealed no significant differences between data collection sites for scores on the ADQ (total exposure to abuse, total psychological impairment), MCS-12, PCS-12, and HHI. Therefore data from all collection sites were analyzed together.

Abuse and Psychological Impairment

A Pearson product-moment correlation was conducted to determine the relationship between exposure to interpersonal violence and total psychological impairment as assessed by the ADQ. A reliability analysis for the current study's sample revealed high internal consistency for the total impairment scale (Cronbach's $\alpha = .96$). It was hypothesized that these two variables would be positively correlated. Results indicate that a significant positive correlation exists between these two variables ($r = .63, p < .0001$). This indicates that as exposure to abuse increases, level of psychological impairment increases. See Table 4 for means and standard deviations.

Table 4.

Descriptive Characteristics of Psychological Measures

Instrument	Mean	SD	N
ADQ			
Abuse Exposure	2.44	3.07	140
Psychological Impairment	65.29	24.23	139
SF-12v2			
PCS	47.84	12.00	138
MCS	42.07	12.77	138
HHI	15.30	3.58	138

Note. ADQ = Abuse Disability Questionnaire, SF-12v2 = 12-Item Short Form Health Survey version 2, PCS = physical component score, MCS = mental component score, and HHI = Health Habits Inventory.

Impairment and Health

A linear multiple regression analysis (Mertler & Vannatta, 2002) was conducted to determine the relationship between level of psychological impairment, general physical health, general mental health, and health habits. Ten participants had missing data and were not included in the analysis. Reliability analyses for the current study's sample revealed high internal consistency for the SF-12v2 (Cronbach's $\alpha = .88$), and moderate internal consistency for the HHI (Cronbach's $\alpha = .66$). Scores on the MCS-12, PCS-12, and HHI were entered into the model using a forward stepwise method. Regression results indicate that in the overall model, all of the above variables significantly predict total psychological impairment, $R^2 = .515$, $R^2_{\text{adj}} = .504$, $F(3, 137) = 47.40$, $p < .0001$. These variables are negatively correlated with psychological impairment, indicating that

as impairment increases, physical health, mental health, and propensity to engage in healthy behaviors decreases. This model accounts for 51.5% of the variance in total psychological impairment. A summary of the regression model is presented in Table 5. In addition, bivariate and partial correlation coefficients between each predictor and the dependent variable were calculated and indicate that all three variables significantly contributed to the model. Bivariate correlation coefficients reveal that mental health is most strongly correlated with psychological impairment, followed by health habits and physical health. Partial correlation coefficients indicate that mental health is most strongly correlated with psychological impairment after partialing out the effects of the other two variables entered, followed by physical health and health habits. Bivariate and partial correlation coefficients are presented in Table 6.

Table 5.

Model Summary for Factors Predicting Psychological Impairment

Step	<i>R</i>	<i>R</i> ²	<i>R</i> ² _{adj}	ΔR^2	<i>F</i> _{chg}	<i>p</i>	<i>df</i> ₁	<i>df</i> ₂
1. MCS	.601	.361	.356	.361	76.80	<.0001	1	136
2. PCS	.674	.454	.446	.093	22.94	<.0001	1	135
3. HHI	.718	.515	.504	.061	16.89	<.0001	1	134

Note. MCS = mental component score, PCS = physical component score, and HHI = Health Habits Inventory.

Table 6.

Coefficients for Final Model

	<i>B</i>	β	<i>t</i>	Bivariate <i>r</i>	Partial <i>r</i>
MCS	-.780	-.408	-6.034*	-.601	-.462
PCS	-.601	-.296	-4.720*	-.455	-.378
HHI	-1.856	-.272	-4.110*	-.495	-.335

Note. MCS = mental component score, PCS = physical component score, HHI = Health Habits Inventory. * $p < .0001$.

Abuse and Health Care Usage

An independent samples t-test was conducted to determine if women who are exposed to abuse utilize more health care resources than those with no exposure. Exposure to abuse was the independent variable and HCU was the dependent variable. Participants were classified as being exposed to abuse if their total abuse score was greater than 0. Results indicate that participants who have been exposed to abuse utilize a greater amount of health care resources ($M = 8.56$, $SD = 7.75$), than do participants who have not been exposed to abuse ($M = 5.66$, $SD = 4.65$), $t(138) = -2.856$, $p = .011$ (see Figure 1).

Abuse and Health Habits

An independent samples t-test was conducted to determine if women who are exposed to abuse engage in less healthy behaviors than to women who report no exposure. Exposure to abuse was entered as the independent variable and HHI was the dependent variable. Higher scores on the HHI indicate the practice of healthier behaviors. Participants were classified as being exposed to abuse using the same method

Figure 1. Health Care Usage by Exposure to Abuse
 $p = .011$.

as described in the previous analysis. Results show that participants who have been exposed to abuse do in fact engage in less healthy behaviors ($M = 14.35$, $SD = 3.75$), than those with no exposure ($M = 16.48$, $SD = 2.96$), $t(138) = 3.630$, $p < .001$ (see Figure 2).

Figure 2. Health Habits by Exposure to Abuse
 $p < .001$.

Health Status and Health Habits

A Pearson product-moment correlation was conducted to examine the relationship between physical health status and health habits. Results indicate that a significant positive correlation exists between these two variables ($r = .18, p = .031$). This

indicates that as physical health increases, propensity to engage in healthy habits increases.

Discussion

The purpose of this study was to investigate the relationship between women's exposure to abuse, health status, and health habits. Although numerous studies have linked abuse to negative mental and physical health status, no study to date has examined the relationship of these variables to perceived psychological impairment due to abuse.

The principal findings of this study were that exposure to verbal, physical, and sexual abuse were significantly correlated with perceived psychological impairment, and that this was significantly related to having lower mental and physical health and engaging in less healthy behaviors. The reported lifetime prevalence rate of abuse in this sample was comparable to the rate found by Coker et al. (2000), with over 56% of participants reporting some level of exposure to any type of abuse. Over 54% reported experiencing psychological abuse, approximately 33% reported experiencing physical abuse, and approximately 32% reported being sexually abused. However, it should be noted that when level of severity is taken into account, both total abuse ($M = 2.44$, $SD = 3.07$) and total impairment scores ($M = 65.29$, $SD = 24.23$) of this sample closely resemble normative data ($M = 2.13$, $SD = 3.18$; $M = 62.09$, $SD = 18.87$, respectively; McNamara & Brooker, 2000). Approximately 8% of this study's sample scored at or above the severity of abuse found in a sample of women living in a domestic violence shelter ($M = 7.34$, SD

= 2.74; McNamara & Brooker, 2000), indicating that abuse is a significant problem but is not as widespread as it may first appear.

Abuse and Psychological Impairment

The hypothesis that women who report more exposure to abuse will have adopted a more disabling psychological perspective was supported by this study. As exposure to abuse increased, perceived psychological impairment increased. This finding reinforces previous research conducted on the ADQ and provides further support for the instrument's underlying theory (McNamara & Brooker, 2000). Although the results do not permit an identification of the precise cause and nature of the relationship between abuse and psychological impairment, exposure to abuse appears to negatively affect how women view themselves and their ability to function in day-to-day life. Areas in which women may experience impairment include social, occupational, and interpersonal functioning (McNamara & Brooker, 2000). Thus, the results from this analysis support previous research findings that indicate abuse negatively affects life functioning (e.g., Coker et al., 2000; Brokaw et al., 2002).

Psychological Impairment and Health

The second hypothesis, that perceived psychological impairment would be significantly related to mental and physical health as well as to engagement in healthy behaviors, was also supported by this study. All three of these variables were significant predictors of impairment in the regression model. The regression analysis revealed that mental health is the strongest predictor, followed by health habits and physical health. All three are negatively related to impairment, indicating that as perceived impairment

increases, one's perceived mental and physical health decrease, as does one's propensity to engage in healthy behaviors. This finding supports a slightly different theoretical model than what is typically proposed, where physical violence is the independent variable used to predict negative health status (e.g., Resnick, Acierno, & Kilpatrick, 1997). In the current study, psychological impairment was used to predict health status. This difference is important when examining the proposed mechanisms by which abuse is said to affect health. Because psychological impairment is indicative of difficulties in day-to-day functioning, it is likely that engaging in everyday activities produces a significantly higher amount of stress in abused women than in non-abused women. Therefore, these results are consistent with the theory that abuse and health are mediated by stress, which can lead to a suppression of the immune system and to the adoption of less healthy coping mechanisms, such as smoking and excessive alcohol consumption (Koss, Koss, & Woodruff, 1991; Resnick, Acierno, & Kilpatrick, 1997).

Lesserman et al. (1997) found that recency of last assault was a significant predictor of health status. However, the ADQ measures lifetime abuse exposure. With this in mind one would not expect the results of this study to have yielded such high levels of significance. However, adopting a negative psychological perspective of the world could possibly lead to learning unhealthy ways to cope with stress that are resistant to change even when the abuse has ended. Furthermore, a recent study by Ng and Jeffery (2003) demonstrated that increased stress was associated with eating a high-fat diet, smoking, consuming excessive quantities of alcohol, and exercising less frequently. Their study strengthens the proposed link between psychological impairment and health behaviors.

The authors suggest that one way in which stress may contribute to negative health status is by the adoption of unhealthy coping behaviors.

Abuse and Health Care Utilization

The third hypothesis, that women exposed to abuse will utilize a greater amount of health care resources, was supported as well. It was found that participants in this study reported visiting a health care provider and taking a greater number of prescription drugs than did non-abused women. Other studies have found similar results (Petersen, Gazmararian, and Andersen-Clark, 2001). Ulrich et al. (2003) report health care utilization of abused women ranges from 1.6 to 2.3 times that of non-abused women. In this study, the rate for abused women was approximately 1.5 that of non-abused women. It is interesting to note that this difference was significant even when a very broad definition of abuse exposure was used. It is likely that were a narrower definition of the two groups used, the difference between them would have been wider. The results of this analysis support the findings of Ulrich et al. (2003), and suggest that abused women use at least 1.5 times the amount of health care resources than do non-abused women.

Abuse and Health Habits

The fourth hypothesis stated that women who are exposed to abuse would engage in less healthy behaviors than those with no exposure and was supported by this study. This study differs from research discussed above in that it uses a general measure of health behaviors, which includes items related to exercise, diet, drug use, and sexual practices, among others. Previous research has focused on only one or two types of health behaviors. Young and Katz (1998), for instance, only asked participants about sexual

practices. Petersen, Gazmararian, and Andersen-Clark (2001) only measured exercise, smoking, and alcohol use. Although they did not find any differences between abused and non-abused women, the Health Habits Inventory uses more stringent definitions for alcohol use and smoking. As mentioned previously, Petersen, Gazmararian, and Andersen-Clark (2001) defined alcohol use as consuming at least one alcoholic drink in the past month. The Health Habits Inventory asked if participants consumed alcohol at least 1 to 3 times per week. It is possible that this difference may have been partly responsible for the discrepancy between their and the present study's findings. However, since data from the Health Habits Inventory were not analyzed by item, no conclusions can be drawn as to what specific behaviors differ between the two groups analyzed.

Health Status and Health Habits

Lastly, it was found that a significant relationship exists between health status and health habits. As health habits increased, physical health status increased. This relationship must be interpreted with caution, however, because the correlation was very small ($r = .18$). However, past studies have linked various health behaviors with negative health status in abused women, including drug abuse (Walker et al., 1992), risky sexual practices (Young & Katz, 1998), smoking (Hathaway et al., 2000; McNutt et al., 2002), excessive use of alcohol (McNutt et al., 2002), and poor dieting habits (McNutt et al., 2002). These findings strengthen the hypothesis that health status and health habits are linked in the population of abused women.

Limitations of the Present Study

Despite the noteworthy findings discussed above, there are several limitations to the present study. The first is that the sample was almost entirely composed of rural, Caucasian participants. Despite the lack of diversity, the literature suggests that these factors may not necessarily restrict this study's generalizability. Bachman and Saltzman (1995) found that members of urban, suburban, and rural American communities report similar rates of abuse. Furthermore, McNamara and Fields (2001) found no differences between races on ADQ Total Scores. It is also encouraging that the rate of abuse found in this study's sample is comparable to other studies conducted in both urban and rural medical settings (Dearwater et al., 1998; Coker et al., 2000; Brokaw et al., 2002). Furthermore, rural women are an under-studied population in the abuse literature. This study has shown that abuse is a serious problem in rural women, and that further attention should be given to this population.

This study has demonstrated strong correlations among abuse, psychological impairment, health status, and health behaviors. Although the exact pathway by which these variables affect one another is unknown, several possibilities have been proposed which may clarify the relationship. One theory is that preexisting physical conditions could be aggravated by physical or sexual abuse (Koss, Koss, & Woodruff, 1991). The most commonly believed theory, however, is that stress caused by abuse may lower one's tolerance for dealing with physical conditions as well as lower immunological resistance to disease, thus making one more susceptible to negative health sequelae (Koss, Koss, & Woodruff, 1991). Stress' effects on immunological functioning and the body's ability to

have been well documented (e.g. Kiecolt-Glasser & Glasser 1987; Kiecolt-Glaser et al., 1997; Norman, 2003).

A further limitation is that neither the types of abuse nor the levels of severity were operationally defined. This can often lead to misclassification of experiences, because one's definition of what constitutes "abuse" is not controlled for (McNutt et al., 2002). One participant may not classify intense verbal arguments as abusive, whereas another may consider such an argument a form of verbal abuse. However, because types of abuse were not analyzed separately, it is doubtful that this limitation significantly impacted the results. Furthermore, the ADQ has demonstrated high construct validity in this and other samples, further reducing this possibility (McNamara & Fields, 2001).

Lastly, women who are currently in an abusive situation may have been more reluctant or unable to participate in this study. Because the survey packets were filled out in the waiting room area of the collection sites, women who were accompanied by a controlling, abusive partner may not have been allowed to participate or may not have felt it was safe to do so. If this were true, the obtained rate of abuse would be a conservative estimate of the population studied. To the author's knowledge no evidence in support of this exists, yet it still remains a possibility. Twenty six percent of the packets were not returned. If there was a significant difference in abuse exposure between responders and non-responders, this could have affected the results as well. Upon analysis of the uncompleted packets, it does not appear that this explanation is very likely. Because the ADQ was the last packet, one would expect participants unwilling or afraid to answer questions about abuse not to complete this instrument. The majority of

the uncompleted packets only had the first survey completed or the first and last surveys, suggesting that these packets were left uncompleted for other reasons. Ways in which to address these limitations in future studies are discussed below.

Implications and Future Directions

The findings of this study have many implications for the future directions of abuse research, detection, and treatment. This study has shown that abuse exposure is associated with many behaviors that are known to lead to poor health. It is important to identify what specific behaviors are most likely to be associated with abuse so that clinic- and community-based intervention programs can begin targeting these behaviors. Future research should not only focus on identifying the specific negative health behaviors associated with abuse, but should examine their individual contributions to abuse's relationship to overall health status. By factoring out the influences of specific behaviors on this relationship, researchers would be able to make a better determination of what, if any, other specific factors influence the relationship.

It is clear that many women experience some form of abuse in their lives, and that these experiences are both directly and indirectly having a negative impact on their health. Furthermore, these women are routinely in contact with health care professionals. For this reason, the medical setting is an important place to screen for abuse. The section of the ADQ that assesses women's abuse experiences is very short yet is highly indicative of abuse exposure. It is also significantly correlated with health status, making it an excellent option for health care professionals to use as a screening tool. A quick yet valid measure of abuse is needed, since health care providers rarely screen for abuse in routine

examinations (Coker et al., 2000). Smith, Danis, and Helmick (1998) state that many physicians do not feel competent in screening for abuse. While they also identify a number of additional factors that prevent physicians from treating domestic violence, including negative attitudes and stereotypes about abused women, the ADQ would be a useful tool for those who do believe that screening for abuse is appropriate.

Screening and treating abuse may also prove beneficial for the health care system. Abuse has been shown to be associated with many mental and physical disorders (e.g., Koss, Woodruff, & Koss, 1991; Walker et al., 1995). This study has shown that women exposed to abuse visit a health care provider more often than women with no exposure, and take more prescription medications than non-abused women. Although there are numerous barriers to the screening and treatment of domestic violence in the health care system (Smith, Danis, & Helmick, 1998), this and similar studies should be used to justify and guide future changes to the delivery of health care services to domestic abuse survivors.

In summary, this study has found that the Abuse Disability Questionnaire can be a useful tool for primary care physicians as a screening measure for exposure to abuse and for determining the extent to which abuse has impaired a patient's functioning in multiple areas of her life.

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Appendix A

Consent Form

Ohio University Consent Form

Title: The Relationship of Intimate Partner Violence to Women's Health Status and Health Habits

Principal Investigator: Gregory Tomasulo

Department: Psychology

Federal and university regulations require us to obtain consent for participation in research involving human subjects. After reading the statements below, you indicate your consent to participate in this research by returning the completed surveys.

Explanation of Study

The purpose of this study is to gather information about intimate partner violence and its relationship to women's health. You will be asked to complete 4 surveys, which will take approximately 15 to 20 minutes.

Risks and Discomforts

Some of the questions included in the surveys are of a personal nature, and may be distressing to some people. If any questions cause you to feel upset, feel free to discontinue your participation at any time.

Benefits

There are no direct benefits associated with participation in this study. However, the scientific community will gain a better understanding of both the direct and indirect negative health effects of intimate partner violence. Additionally, the health behaviors of women who experience intimate partner violence will be better understood.

Confidentiality and Records

Your name will not appear on any of the forms, and all answers you provide will be kept confidential.

Contact Person (Researcher/Advisor & email/phone number)

If you have any questions regarding this study, please contact Gregory Tomasulo, principal investigator, at (740) 566-8036. If you have any questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, at Ohio University, (740) 593-0664.

Additional Assistance:

If you feel the need to speak with someone or realize that you are in need of assistance after completing the surveys, information for counseling resources is provided below.

My Sister's Place:

My Sisters Place is a shelter for battered women and their children. It provides emergency shelter, access to emergency food, clothing and medical services, confidential individual and group counseling and supportive services are available on an outreach basis.

LOCATION: Confidential. Mailing address: P.O. Box 1158

SHELTER HOURS: 24 hours a day, 365 days a year.

HOTLINE SERVICES: 24 hours a day, 365 days a year. Provides crisis intervention and information.

HOTLINES: 593-3402 or 1-800-443-3402

Careline:

Careline is the phone service that area residents turn to when they face crises.

HOTLINE: 593-3344

Tri-County Mental Health and Counseling Services, Inc.:

Immediate appointments for confidential, professional counseling are available for women or men who have been abused, or left a person to escape battering.

LOCATION: 28 W. Stimson Ave.

HOURS: 8 am – 5 pm Mon., Wed., Fri. 8 am – 8 pm Tues., Thurs.

TELEPHONE: 592-3091

I certify that I have read and understand this consent form and agree to participate as a subject in the research described. I agree that known risks to me have been explained to my satisfaction and I understand that no compensation is available from Ohio University and its employees for any injury resulting from my participation in this research. I certify that I am 18 years of age or older. My participation in this research is given voluntarily. I understand that I may discontinue participation at any time without penalty or loss of any benefits to which I may otherwise be entitled. I certify that I have been given a copy of this consent form to take with me. I understand that completion and return of these surveys implies my consent to use this data for research purposes.

Appendix B

Health Care Questionnaire (HCQ)

Thank you for choosing to volunteer for this study. Before completing the attached surveys, please complete this form by filling in the appropriate information. Its purpose is to obtain some background information about you and your health care practices.

1.) In the past 6 months, how many visits have you had to a health care provider or center? _____

2.) a. Please indicate the number of visits that occurred for the following reasons:

b. Routine check-up: _____

c. Gynecological (OB/GYN): _____

d. Stomach problems: _____

e. Headache/body pain: _____

f. Other (list): _____

3.) In the past 6 months, how many different prescription drugs have you taken?

4.) In the past 6 months, check the extent to which you have taken the following types of non-prescription drugs: (circle the number that applies)

	<u>Not at All</u>	<u>Sometimes</u>	<u>Usually</u>	<u>Always</u>
a. Vitamins:	0	1	2	2
b. Herbal supplements (ginseng):	0	1	2	2
c. Diet/weight loss supplements:	0	1	2	2
d. Headache/pain relievers:	0	1	2	2
e. Cold/flu medicine:	0	1	2	2
f. Other (list) _____	0	1	2	2

5.) What is your current height (a.) _____ and weight (b.) _____?

6.) What did you weigh your last year in high school _____?

7.) How many days per week do you engage in the following? (Circle the number that applies.)

a. Have three or more alcoholic

drinks in one sitting: 0 1 2 3 4 5 6 7

b. Smoke cigarettes: 0 1 2 3 4 5 6 7

c. Get at least 15 minutes of exercise: 0 1 2 3 4 5 6 7

d. Use street drugs (heroin, cocaine): 0 1 2 3 4 5 6 7

e. Watch TV for more than 2 hours: 0 1 2 3 4 5 6 7

f. Eat 5 helpings of fruits

and/or vegetables: 0 1 2 3 4 5 6 7

g. Eat breakfast: 0 1 2 3 4 5 6 7

h. Obtain 7-8 hours of sleep: 0 1 2 3 4 5 6 7

i. Snack between meals: 0 1 2 3 4 5 6 7

8.) How often do you wear a seatbelt when driving or riding in a car? (circle one)

Never

Occasionally

Sometimes

Usually

Always

9.) How often do you ride in a car when the driver (yourself or someone else) has been using alcohol? (circle one)

Never

Occasionally

Sometimes

Usually

Always

Appendix C

Descriptive Characteristics for HCQ

Means and Standard Deviations for the HCQ by Item

Question	Mean	SD	N
1	4.51	4.93	148
2a	.72	1.45	148
2b	.90	2.26	148
2c	.26	.64	148
2d	.75	1.78	148
2e	1.61	3.16	148
3	2.97	3.07	148
4a	1.13	1.19	148
4b	.30	.74	148
4c	.22	.66	148
4d	1.51	.92	148
4e	.59	.66	148
4f	.19	.66	148
5a	64.84	3.14	143
5b	165.96	42.79	138
6	133.09	27.01	140
7a	.57	1.33	146
7b	2.05	3.04	146
7c	2.92	2.30	146
7d	.08	.46	146
7e	3.87	2.50	146
7f	3.14	2.29	146
7g	3.78	2.80	146
7h	4.19	2.50	146
7i	4.41	2.29	146
8	3.56	.95	146
9	.35	.74	146

Internal Consistency for HCQ Items

Item	Chronbach's Alpha (α)
1	N/A
2	.012
3	N/A
4	.199
5	N/A
6	N/A
7	.452
8	N/A
9	N/A

Appendix D

Abuse Disability Questionnaire (ADQ)

ID# _____ Age _____ Date _____
 Years of Education _____ Race _____ Marital Status _____

The following contains a list of statements that people use to describe their experiences with life and their thoughts and feelings about it. Go ahead and describe your experiences, thoughts, and feelings by circling the appropriate number next to each item that represents your life situation.

I. (AE) Please indicate the amount of abuse you have experienced in the following areas (circle):

	None	Some	Moderate	Much	Excessive
Psychological/Emotional Abuse	0	1	2	3	4
Physical Abuse	0	1	2	3	4
Sexual Abuse	0	1	2	3	4

II. (IM) Please indicate the degree to which you agree or disagree with each of the following statements.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1. I feel trapped in my intimate relationships.	5	4	3	2	1
2. I feel unloved in my intimate relationships.	5	4	3	2	1
3. I feel unfulfilled in my intimate relationships.	5	4	3	2	1
4. I feel inadequate in my intimate relationships.	5	4	3	2	1
5. I feel unneeded in my intimate relationships.	5	4	3	2	1
6. I feel scared in my intimate relationships.	5	4	3	2	1
7. I feel unhappy in my intimate relationships.	5	4	3	2	1
8. I feel unappreciated in my intimate relationships.	5	4	3	2	1
9. I feel restricted in having enough social contact with family and friends.	5	4	3	2	1
10. I feel restricted in pursuing recreational activities (e.g. sports, hobbies, etc.).	5	4	3	2	1
11. I feel restricted in participating in daily contact with other people.	5	4	3	2	1

12. I feel restricted in obtaining employment and working outside the home.	5	4	3	2	1
13. I feel restricted in not being able to improve myself through education or other positive experiences.	5	4	3	2	1
14. I feel like I don't have any control over my life.	5	4	3	2	1
15. I feel like I'm not going anywhere with my life.	5	4	3	2	1
16. I believe I am unattractive.	5	4	3	2	1
17. I believe I have a weight problem.	5	4	3	2	1
18. I believe I am not in good physical condition.	5	4	3	2	1
19. I believe I take too many drugs.	5	4	3	2	1
20. I believe I smoke too much.	5	4	3	2	1
21. I believe I drink too much alcohol.	5	4	3	2	1
22. I believe my health is deteriorating.	5	4	3	2	1
23. I believe I don't enjoy life as much as I could.	5	4	3	2	1
24. I believe I worry too much.	5	4	3	2	1
25. I believe I'm too often depressed.	5	4	3	2	1
26. I believe I'm too often anxious.	5	4	3	2	1
27. I believe I experience too much physical pain.	5	4	3	2	1
28. I believe I experience too much psychological distress.	5	4	3	2	1
29. I believe my personal safety is in jeopardy.	5	4	3	2	1
30. I believe I'm not as good as everybody else.	5	4	3	2	1

Appendix E

The SF-12v2© Health Survey

Instructions for Completing the Questionnaire

Please answer every question. Some questions may look like others, but each one is different. Please take the time to read and answer each question carefully by filling in the bubble that best represents your response.

EXAMPLE

This is for your review. Do not answer this question. The questionnaire begins with the section ***Your Health in General*** below.

For each question you will be asked to fill in a bubble in each line:

1. How strongly do you agree or disagree with each of the following statements?

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
a) I enjoy listening to music.	☐	☐	☐	☐	☐
b) I enjoy reading magazines.	☐	☐	☐	☐	☐

Please begin answering the questions now.

Your Health in General

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor	
1	2	3	4	5	GH1

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all	
a) Moderate activities , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3	PF02
b) Climbing several flights of stairs	1	2	3	PF04

3. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time	
a) Accomplished less than you would like	1	2	3	4	5	RP2
b) Were limited in the kind of work or other activities	1	2	3	4	5	RP3

4. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time	
a) Accomplished less than you would like	1	2	3	4	5	RE2
b) Did work or other activities less carefully than usual	1	2	3	4	5	RE3

5. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely	
1	2	3	4	5	BP2

6. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time	
a) have you felt calm and peaceful?	1	2	3	4	5	MH3
b) did you have a lot of energy?	1	2	3	4	5	VT2
c) have you felt downhearted and depressed?	1	2	3	4	5	MH4

7. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time	
1	2	3	4	5	SF2

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!

Appendix F

Health Habits Inventory (HHI)

Please fill out the questionnaire below as honestly as you can by circling the most appropriate response by each question which reflects your health habits/behaviors. Your answers will be anonymous so no one will be able to identify you with your responses. Please place your completed questionnaire in the envelop labeled “responses.” The information gathered from you will be used for research purposes only.

QUESTIONS	RESPONSES			
Do you eat breakfast at least 5 times a week?	yes	no		
Do you smoke on a regular basis?	yes	no		
Do you wear your seatbelt (driving)?	always	sometimes	never	
Do you wear your seatbelt (passenger)?	always	sometimes	never	
Do you exercise at least 3 times a week?	always	sometimes	never	
Do you read food labels for fat gram content?	always	sometimes	never	
Do you have an annual dental exam?	yes	no		
Females: Do you perform a monthly self breast exam?	always	sometimes	never	
Do you practice safe sex (condoms)?	always	sometimes	never	n/a
Do you regularly use illegal drugs?	yes	no		
Do you drink alcohol at least 1 to 3 times a week?	always	sometimes	never	
Do you know your current cholesterol level?	yes	no		
If yes, is it elevated?	yes	no		
Do you know your current blood pressure level?	yes	no		
If yes, is it elevated?	yes	no		

Instrument developed by Cathy Shriver, RN, MHS, MSN; Georgia Southern University; Statesboro, GA 30460. Copyright: 1997. Reprinted with permission.

Appendix G

Recruiting Script

“Our clinic is involved with a survey study that examines women’s health. If you choose to participate, you will be asked to fill out four surveys, which take a total of about fifteen to twenty minutes to complete. All of the information you provide will be anonymous and kept strictly confidential. While there are no direct benefits for your participation, the information gathered will allow researchers to gain a better understanding of some important women’s health issues. Participation is strictly voluntary, so you can feel free to not participate or to stop at any time. Would you be willing to participate?”

- If the person says “yes,” please give her a research packet and tell her that instructions on how to proceed are contained within the packet.
- If the person says “no,” please thank her for listening to the offer.

Appendix H

Instructions to Participants

Thank you for choosing to participate in this study. Enclosed in the packet you have just received are five items: a consent form, and four surveys. Before you begin, please read the consent form carefully. Do not put this back in the envelope – it is for you to take home.

Once you have read the consent form, you may begin to complete the surveys, which will take you about 15 to 20 minutes total. Answer all questions as honestly as possible. If you no longer want to continue participating, please feel free to stop at any time. Return the uncompleted material to the receptionist.

Once you have completed all four surveys, or have decided to stop, put all of the surveys back into the envelope and seal it shut, then return it to the reception desk or your care provider. This is to ensure that no one has access to the information you have provided except the researchers conducting this study.

Since this study is being done for several months, there is a chance that you may have already participated in it. If you have already filled out these surveys here or at another location, please do not participate again.

Once again, thank you for taking time to help with our study.

Appendix I

IRB Letter

Office of Research Compliance

Research and Technology Center 117
Athens OH
45701-2979

tel 740.593.0664
fax 740.593.9838
e-mail compliance@ohio.edu
web www.ohio.edu/research

OHIO UNIVERSITY

02F036

The following research study has been approved by the Institutional Review Board at Ohio University for a period of one year.

Project: The Effects of Intimate Partner Violence on Women's Health Status and Health Habits

Project Director: Gregory Tomasulo

Advisor: John R. McNamara
(if applicable)

Department: Psychology

Jacqueline Legg, M. B. A., Chair
Institutional Review Board

10/16/02 - 2/22/03

Date