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This study is examining intimate partner abuse prevalence and its mental health consequences in samples of military and civilian women. After completing 3 of the 4 years of the study, we have reached our interview completion goals of 2000 screenings and 200 cases and 200 controls for the civilian sample. Completed interviews stand at 2005 screenings with an overall lifetime physical abuse prevalence rate of 35.5%. An additional 8.8% of the screened women reported lifetime emotional abuse. Analyses of the cases and controls are currently underway to explore the health consequences of partner abuse and preferences for partner abuse screening. Recruitment and interviewing of the military sample is in process. To date, we have signed consent forms form 637 women and 279 of these women have been interviewed.

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FOREWORD

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INTRODUCTION

Under the directive of P.L.103-160, this study will provide data on the prevalence and effects of physical and sexual assaults of a sample of active duty women and a sample of civilian women. For purposes of this proposal, battering (intimate partner abuse) is defined as repeated physical and/or sexual assault from an intimate partner within a context of coercive control.[1] Battering of military woman has ramifications for the health of these women and their ability to perform their mission responsibilities. It has been identified as a significant risk factor for a variety of physical and mental health problems seen frequently in military and civilian outpatient, primary health care settings.

The overall goal of this research is to develop a more comprehensive understanding of the physical and mental health consequences and associated medical costs of intimate partner abuse against women, using population based data from a sample of military women and a comparable sample of HMO enrollees. Such information is necessary to plan effective health care policies and interventions in military and civilian health facilities to reduce the human suffering and medical costs associated with intimate partner abuse. The aim of this study is to provide data on the prevalence of battering among military women in comparison to a civilian population and to examine the relationship of battering to a number of health problems, such as heart disease, STD's and women's reproductive and mental health. Both aims have relevance not only to the physical and mental health needs of this population but the need for health services for an evergrowing population of military woman. There is also concern that women in the military may be hesitant to seek care for mental health needs because of fears about adverse effects on their career.[2] Likewise, battered military women may not disclose abuse because of the requirement that suspected abuse be investigated through the Family Advocacy Programs,[3] and the incidence of hidden abuse is therefore not known. The effects of this reporting requirement in terms of increasing or decreasing consequent health problems and trauma also are not known.

To examine these issues, we are collecting medical record and self report data on intimate partner abuse, health conditions, and utilization of medical and mental health care, and our interview will ascertain military and civilian women's preferences for, experience with and concerns about intimate partner abuse screening and policies. Specific objectives of the study are as follows:

#1: To determine and compare the life time and annual prevalence of intimate partner abuse against women, including emotional, sexual and physical abuse, in a sample of military women and HMO enrollees and the relationship of this victimization to selected demographic factors.

#2: To determine and compare the medical care utilization patterns and costs of care for adult military and civilian women who are abused (cases) relative to the same in non-abused women (controls) over a three year period.

#3: To determine to what extent a history of intimate partner abuse is a risk factor for other medical conditions and symptoms, including: a) injuries and their medical sequelae; b) STD's/HIV; c) abnormal pap smears, PID, hysterectomies, and other gynecological problems; d) pregnancy-related problems; e) cardiovascular disease, including hypertension; f) irritable bowel syndrome and other stress related disorders; g) neurological disorders; h) problems with alcohol and other drugs; i) depression; and j) post traumatic stress disorder.

#4: To compare military and civilian women's reported medical conditions with those documented in the medical chart and examine the extent to which the correspondence between the two varies between cases and controls and between military and civilian women.

#5: To determine the percentage of military women not disclosing abuse to health care providers because of mandatory reporting regulations in military health care settings, and to compare health outcomes (including trauma) of those abused military women who disclosed abuse and those who did not.

#6: To assess and compare abused and not abused military and civilian women's preferences for, experiences with, and concerns about health care provider policies on domestic violence screening and reporting.

#7: To provide workshops for military and civilian primary care personnel including identification and interventions for intimate partner abuse and dissemination of study results.

It is generally agreed that intimate partner abuse occurs in military families with at least the same prevalence as in the general civilian population, with estimates that as many as one third of all military women have experienced battering.[4] Military families may even be at higher risk because of stress associated with frequent transfers, separations, and isolation from extended family.[5,1] The incidence of reported intimate partner abuse among American women has been estimated at between 12-15%,[2] which for the almost 194,000 women in the military, translates to as many as 29,000 currently abused women in this population. It is estimated that approximately 90% of all domestic violence is battering of the female partner (wherein her violence is mostly self-defense), 6-7% is mutual violence, and 2-3% is battering of the male partner. The mutual violence also has ramifications for women's health.

However, the actual prevalence of battering among any sample of military women has never been determined. The only indirect evidence we have of difference in the incidence of battering in military women is indication of a higher homicide rate for military women than civilian women.[6] The primary risk factor for homicide for the general population of women is prior battering by a husband, intimate partner, ex-husband or ex-partner.[7] Thus, higher rates of homicide may indicate higher rates of intimate partner abuse. In two recent studies of primary care settings similar to an HMO, prevalence of battered women based on self-report rather than record review has ranged from 25% assaulted once during the past year and 7% assaulted often[8] to 44% with minor physical abuse and 28% with severe physical abuse.[9] The first study, conducted in a community-based family practice center, used only one item for determining physical violence and the response was added to the patient's chart unless she specifically asked for it to be omitted. The second study used several different items in an anonymous questionnaire in two primary care settings serving primarily uninsured, relatively poor patients. Both samples had approximately the same level of education and were living in different mid-western urban areas. Although limited to two studies, these findings demonstrate that women who receive care in HMO's suffer substantial levels of battering.

Battering has been determined as a significant risk factor for a variety of physical health problems frequently treated in outpatient, primary care settings. From the UNH national random survey data, it was found that severely battered women had almost twice the number of days in bed due to illness than other women and were significantly more likely to describe their health as fair or poor.[10] Injuries or the aftermath of injuries from abuse such as pain, broken bones, gunshot wounds, facial trauma (e.g. fractured mandibles), and tendon or ligament injuries are usually followed in outpatient settings.[11,12,13,14] Since battered women frequently report untreated loss of consciousness as a result of abuse, the chronic headaches often described by battered women[10] may be an inadequately diagnosed sequelae of neurological damage from

battering. Undiagnosed hearing, vision and concentration problems reported by battered women also suggest possible neurological problems from injury.[15,16] Other symptoms and conditions associated with physical violence from intimate partners, either from medical record data or self-report, include symptoms usually associated with stress such as chronic irritable bowel syndrome, sleep disorders and hypertension. These symptoms may indicate the degree of stress associated with intimate partner abuse.[17,18,19,20,21,22] Although the suppression of the immune system from chronic stress has been investigated in other populations, the role of stress in the etiology of the frequent communicable diseases of battered women and their children[20] has not been investigated. Another avenue for investigation is the relationship of stress from battering to lupis.

Mental health sequelae to abuse are significant and prompt women to seek health care services as frequently as physical health problems. The primary mental health response of women to ongoing intimate partner abuse is depression. In a sample of 394 adult women seeking medical care at a Family Practice medical center, depression was the strongest indicator of intimate partner abuse.[8] Gleason[23] found a significantly higher prevalence of major depression in 62 battered women than in the NIMH Epidemiological Catchment Area study. In that same study, there was a higher prevalence for major depression (63%) than for PTSD (40%). In comparison, depression in women in general is estimated at 9.3% point prevalence and 20 to 25% lifetime risk. In controlled studies from a variety of settings, battered women are consistently found to be more depressed than other women on various instruments.[24,25,26] In studies exploring the dynamics of depression in battered women, significant predictors include the frequency and severity of abuse, stress, and women's ability to care for themselves. These are more strongly related to depression than prior history of mental illness or demographic, cultural or childhood characteristics.[27,28,29] Another important correlate of depression in battered women is low self-esteem, often occurring as a result of women blaming themselves for the abuse. In a military sample of violent couples, a substantial portion (30-40%) of the women blamed themselves for the relationship violence.[30] Higher rates of post traumatic stress disorder (PTSD) have also been documented in battered women in shelters than in other women.[23,31] In a study of women Desert Storm veterans, combat related PTSD was significantly higher for those veterans with a history of sexual and physical abuse than veterans who reported no history of abuse after adjusting for socio-demographics, pre-combat psychiatric history, and level of combat exposure.[32] However, the association of PTSD and battering has only recently been documented and primarily only in the violence literature rather than in mainstream health or mental health publications. Battered women would generally not complain of PTSD per se to a health care provider, but rather of sleep disorders or stress. Thus, there is substantial probability of misdiagnosis or lack of diagnosis of PTSD by primary care providers. Substance abuse is a frequent manifestation of PTSD as part of the avoidance dynamic in samples of traumatized people, including non-pregnant battered women.[33]

When battered women go unidentified and/or without appropriate interventions, they have increased health problems compared to women who are not battered, resulting in more frequent ED visits, other hospitalizations, and increased use of outpatient health care facilities.[17,32,13] Bergman, Brismar, and Nordin[34] found in an 18 year study period that 117 abused women had 70 hospital admissions for traumatic diagnoses and 284 admissions for non-traumatic diagnoses compared to 18 and 96 respectively for a matched control group. Battered women and their children were found to use HMO's 6-8 times more often than did controls in another study.[9] Goldberg and Tomlanovich[11] found that most of the patients who presented at the ED as a result of domestic violence were there for medical complaints rather than trauma.

Moreover, forty percent of battered women seen in an ED, the most expensive setting for health care delivery, had previously required medical care for the abuse.[35]

These findings further indicate the need to intervene for abuse with women in all health care settings and, consistent with public health approaches, intervene as early as possible. Effective early interventions not only reduce frequency and severity of trauma and stress, they also prevent further suffering and disability, and reduce long term physical and mental sequelae. The costs of personal suffering and disability for individuals and families with intimate partner abuse are also significant. According to a recent study conducted at Rush Medical Center in Chicago, and the only one we could find explicitly estimating costs of domestic violence against women, the cost of health care services averages $1,633 per patient per year. This translates to an estimated national cost of $857 million attributable to domestic violence.[36] These findings highlight the cost of domestic violence in dollars.

Several studies have documented a lack of appropriate identification of battered women in primary care settings,[11,8a] even though a survey of HMO patients indicated that routine medical inquiry about physical abuse was favored by 78% of patients and routine inquiry about sexual abuse by 68% of patients.[37] A recent survey of medical personnel in the Army Medical Corps found that 57% of the nurses, physicians and corpsmen surveyed reported having no professional experience with domestic violence.[38] Given the assumed equal prevalence in the miliary of battering, it can be surmised that these health care professionals are failing to identify battered women clients. It is not known if identification or lack of identification varies by ethnicity, but it has been documented that health care professionals are more likely to assess for child abuse if families are poor and/or of minority ethnic heritage.[39] In addition, a small survey of battered women in shelters who had been treated in Emergency Departments (n=74) found that 45% felt that the type of insurance they had influenced how the ED staff treated them and 22% felt that racism affected their treatment.[16] The parallel in the military would be an assumption on the part of health care professionals that enlisted women would be more likely to be battered. No such evidence exists; however both the comparative prevalence between enlisted women and officers and the comparative reporting by ethnicity are important areas of investigation.

EXPERIMENTAL METHODS

Population and Sampling: This study specifies that partner abuse is to be screened within a random sample of 2,000 active duty military women and 2,000 civilian women. The original sampling plan was to randomly select military women residing in a 100 mile radius of Washington D.C. and civilian women enrolled at two Kaiser Permanente medical facilities located in D.C. and a Maryland suburb of D.C. Sampling and screening has been completed for sixty percent of the 2000 civilian women (Appendix 1, Statement of Work, Objective 1, Task 2,5). Based on previous research and our work so far, we estimated correctly that 10% of the respondents would answer affirmatively to abuse within the past 7 years, to yield a sample size of 200 cases from the military sample and 200 cases from the HMO sample. Civilian respondents either identified as a case (a woman who experienced physical or sexual from an intimate partner within the past 5 years) or randomly selected as a control (a woman with no history of partner abuse) were asked to complete the detailed interview (Appendix 2) immediately following the screening or at another appointed time that was more convenient or safe.

We expanded our sampling plan to a 100 mile radius of the Norfolk / Portsmouth naval base and to additional suburban locations in Maryland and Virginia (Statement of Work, Objective 1, Task 3). Our response rate for the civilian population turned out to be on average 14%, lower than originally projected (45%). Anticipating a similar response rate from the military population, we had decided to expand our recruitment to an additional naval base. Portsmouth Naval Hospital approved the IRB.

To be eligible for the study, women must be 21 to 55 years old at the time of the interview and have been enrolled in their respective organization for a minimum of 3 consecutive years. These inclusion requirements were selected for two reasons. We believe the issues of violence among adolescent women (e.g., date rape) and among older women (e.g., elder abuse) are unique enough to require separate analyses and given limited resources, we chose to focus on adult women in the childbearing years because of the magnitude of the problem in this population. Second, we chose three years of continuous active duty (or enrollment in the HMO) as the criterion to assure that we had a consistent time period that was long enough to provide a more reliable indicator of medical care utilization than a single year, but not so long as to result in a sample biased toward the most stable, and presumably lower-risk women. The three year period comprises 1995 - 1997 for the HMO and 1996 - 1998 for the military.

We recruited the sample of civilian women by sending a letter of introduction and a telephone contact form to the prospective study participants, asking them to return the form if they are interested in participating in the study. Upon receipt of the contact form, we call the civilian women to request an interview. A verbal consent is administered immediately preceeding the interview. For the military population, the IRB granted by the Department of the Army (U.S. Army Medical Research Acquisition Activity) prescribed a two step mailing process. We send a letter of introduction and an address form to the military women. Upon receipt of the address form, we send a second more informative letter with a written consent form. If the prospective respondent is interested, she returns a signed consent form and informs of us a telephone number where she can be reached (Appendix 2).

Data Collection: There are two main components to the data collection for this study: 1) telephone survey; and 2) medical records review. Each is described below.

Telephone Survey. The survey is administered by telephone, consisting of three parts: 1) an introduction, including a privacy act notice; 2) a screening tool for determining case or control status; and 3) a detailed interview for all cases and a random sample of controls. The interview instruments will be used to estimate prevalence of abuse in this population (Technical Statement of Work, Technical Objective #1), identify our cases and controls, and collect detailed information on cases and controls and their experiences with medical conditions and health care providers (Statement of Work, Technical Objectives #2-#6).

Interviewing was subcontracted to Quantech, a survey research firm located in Rosslyn, Virginia. In consultation with Johns Hopkins, Quantech has completed the following services: 1) programming of questionnaire into its Computerized Access Telephone Interviewing (CATI) system, 2) a training manual for conducting all phases of the telephone survey, and 3) training of interviewers and pre-testing of questionnaire (Statement of Work, Technical Objective #1, Task 4) .

A computerized generated random selection procedure was put in place for the control group women (i.e., those who answer "no" to all of the abuse screening questions). Quantech developed a system to closely monitor response rates and sample accrual so that adjustments in the random sampling proportion can be made as necessary to achieve a sample of controls that is the same size as the cases. The rationale for a random sample of controls rather than a matched sample is twofold. First, it is a simpler, more cost-efficient design to implement. Second, we are more interested in estimating the outcomes of interest for a representative sample of women than we are in solely isolating abuse as a risk factor for certain outcomes.

Medical records. This data will be used to assess documented medical conditions and utilization of cases and controls. Using medical record data and subject responses to the interview, we will examine congruence and the prevalence of diagnoses research has shown to be related to partner abuse. All medical records for the 400 military and 400 civilian cases will also be manually reviewed for frequency of medical visits and any evidence of documentation of the abuse. Medical records review is currently underway for the 129 civilian cases and 159 civilian controls (Statement of Work, Objective #3, Task 2). We plan to collect additional utilization data from the HMO's computerized record system immediately following completion of the remaining interviews. (Statement of Work, Objective # 2, Task 3). For the military population, nurse researchers will be reviewing their medical records on site and returning them to their pre-designated storage files. We will assess utilization (and costs) from all medical care for selected conditions (ED) internal medicine and specialty clinics and hospitalization for each completed interview. Clinic visit CPT codes and hospital day services will be retrieved from the CHCS information system by the Research Assistant using a procedure developed by the Military Co-PI.

Costs per service unit received will be based on data provided by the military facilities and the HMO for the years 1995 to 1997. For the HMO population, when care is received from an HMO contractor, data come from bills submitted to the HMO by the contractor (e.g., hospitals, imaging and laboratory services, and part-time specialists). The HMO will provide a cost for each Kaiser Permanente service unit in current dollars for 1995, 1996 and 1997. Cost data will include all primary care and some specialty care, all clinic pharmacy services, all ambulatory surgical services, and routine laboratory and imaging services done in their clinics and ambulance services. HMO cost data is scheduled for Spring 1999 (Statement of Work, Objective # 2, Task 3). Originally, we proposed to obtain costs per service unit from the participating military clinics through the Office of Third Party Reimbursement for NNMC and similar offices at the WRAMC and MGMC. However, further investigation of military medical

cost data suggest that it may not be readily available and, also, that it may not reflect the marginal opportunity cost of these services. For these reasons, we intend to investigate the use of alternative data sources. For example, one approach we will consider is the use of Kaiser Permanente service cost estimates in place of military costs. Another approach we will consider is use of expenditure data from the 1987 National Medical Expenditure Survey (NMES). Cost data from either of these sources can be linked by ICD-9 diagnosis and procedure codes to military use data and used to produce health services cost estimates. Cost figures for both the military and HMO samples will be converted to constant purchasing power (1995) dollars using appropriate consumer price indices (CPI) (e.g., physician fee CPI for physician services, hospital room CPI for hospital services, etc.) that are available from the U.S. Department of Labor, Bureau of Labor Statistics in all years.

PROGRESS AND RESULTS

HMO: Our interview goal of 2000 civilian abuse screenings and 200 cases and 200 controls was reached with the second and final recruitment of civilians in Fall 1998 (Statement of Work, Objective #1, Task 5). Of the 21,000 women enrollees who received an invitational letter, 2535 (12%) women returned a form agreeing to be interviewed by phone. However, on telephone contact, 447 (17%) were not locatable and 76 (3%) refused to participate when phoned. Final completed civilian interviews stand at 2005 screenings, 202 cases and 240 controls. Medical record abstracts for all 442 cases and controls are completed and ready for data entry (Statement of Work, Objective #2, Task 2). The only outstanding objective left is the retrieval of cost data for the cases and controls. We are currently in the process of contacting the HMO computer center for this information.

Analyses of the HMO survey data is underway. Our first major analysis explored the prevalence of partner abuse using the data collected from the first interview wave in 1997. The manuscript on this topic is scheduled for publication this fall in Women's Health Issues (Appendix 3). We are currently in the process of preparing manuscripts on the following topics 1) women's preferences for provider screening of domestic violence, 2) physical health consequences of domestic violence, 3) the health and medical utilization of services among African American women, adjusting for domestic violence, 4) relationship of domestic violence to substance abuse of women and their abusive partners. Future manuscript preparations include 1) relationship of domestic violence to mental health and PTSD, 2) survey methodology issues with respect of domestic violence studies, 3) costs of medical care associated with domestic violence.

Military: After considerable delays due to circumstances beyond our control since our initial recruitment efforts in September 1997, we had commenced recruitment and interviewing of active duty women. The set of events that followed are outlined in chronological order:

September 1997	Principal Investigator at NNMC left Navy.
January 1998	Obtained new investigator, CDR Nancy Dixon
February 1998	CDR Dixon wrote to the DMDC for names and addresses of active duty women who met our selection criteria. (In February 1998, we were invited by the Office of Family Policy, Support and Services to give a presentation on our study. At this time, representatives from Family Advocacy program gave us their input and protocols were revised accordingly. The FAP personnel advised us to request DMDC for names and addresses.)
March 1998	The Johns Hopkins team sent a letter to DMDC to follow-up on Dr. Dixon's letter.
April 1998	DMDC replied, informing us that we need to supply additional information according to a guideline of questions because our study crosses services.
May 1998	Our DMDC contact person informed us that we needed DOD sponsorship before they could review our request.

May 1998	JHU team sent letter to Office of Health Affairs, DOD requesting sponsorship.
July 1998	DOD denied sponsorship (Appendix 6).
July 1998	JHU team contacted contract specialist and scientific officer at Army Medical Research Materiels Command, funding agency for study, to ask for assistance on the matter. After several contacts, our army representatives for the study were not able to provide us with advice on how to proceed.
July 1998	Portsmouth IRB committee reviewed our request to expand study to the Portsmouth/Norfolk installation.
August 1998	Sent letter to DOD in response to their concerns about sponsoring our study (Appendix 6).
September 1998	Received verbal approval from DOD that will sponsor study. Awaiting official letter of approval.
September 1998	DOD sent report to DMDC to review our request for names and addresses.
January 1999	Received final approval and RCS number from WHS/DIOR.
January 1999	Requested DMDC WEST for names and addresses of active duty women for recruitment into study.
April 1999	Received names and addresses of active duty women from DMDC.
May 1999	Mailed invitational letters to active duty women.
June 1999	Began responding to requests for consent forms.
July 1999	Commenced interviews.

Interim results for the survey response rates are available for our ongoing recruitment and interviewing process. We mailed invitational letters to approximately 16,000 active duty women. We know that the letters did not reach approximately 3200 women because they were returned to us in the mail as undeliverable. Among the 13,000 women who most likely received the letter, 2000 (15%) requested a consent form. This initial response rate is better than average and slightly higher than our civilian population. However, the second mailing, which involves signing a written consent form, lowered our response rate to 5%. So far, 637 women signed and returned the consent form. Of these women, 279 have been interviewed. Plans for abstracting medical utilization data from the medical records of study participants are currently underway.

CONCLUSION

The preliminary results point out that domestic violence is present among educated and middle level income civilian women, a population comparable to active duty military women in the DC area. This holds importance for adequate screening and intervention in our health care delivery system. Additional data on preferences for screening and the health consequences for abuse will be available in the near future for our civilian population. Similar information on the military population will be available in the first quarter of 2000.

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APPENDIX 1

STATEMENT OF WORK

STATEMENT OF WORK

Technical Objective #1. To determine and compare the life time and annual prevalence of intimate partner abuse against women, including emotional, sexual and physical abuse, in a sample of military women and HMO enrollees and the relationship of this victimization to selected demographic characteristics.

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocols.
Task 2:	Jan - May/97	Obtain sample HMO enrollee women.
Task 3:	Mar - July/97	Finalize sample and accrue additions as needed.
Task 4:	Mar - July/97	Design sampling, manual, and train interviewers
Task 5:	Aug - Sept/97	Conduct screening and in depth interviews.
Task 6:	Oct/97	Deliver annual report Year 1
Task 7:	Oct - Nov/97	Analyze HMO data for prevalence and by demographic characteristics.
Task 8:	Oct/97-Jan/98	Obtain sample military women.
Task 9:	Dec/97-Mar/98	Submit manuscript- Journal of Family Violence.
Task 10:	Feb - Apr/98	Finalize sample and accrue additions as needed.
Task 11:	Feb - Apr/98	Design sampling, manual and train interviewers
Task 12:	May - July/98	Conduct screening and in-depth interviews
Task 13:	Aug - Sept/98	Analyze Military data for prevalence and by demographic characteristics.
Task 14:	Oct/98	Deliver annual report Year 2
Task 15:	Oct/98-Jan/99	Submit manuscript to - Military Medicine Publish article Military Hospital News Paper
Task 16:	July/99	Present paper at NNFAWI Annual Meeting
Task 17:	Oct/99	Deliver Year 3 Annual Report
Task 18:	3/2000	Destroy Codebook

Technical Objective #2. To determine and compare the medical care utilization patterns and costs of care for adult military and civilian women who are abused (cases) relative to the same in non-abused women (controls) over a three year period.

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocol.
Task 2:	Nov/97-Mar/98	Design system, manuals, train and retrieve HMO medical utilization data.
Task 3:	Apr - May/98	Analyze HMO medical utilization data.
Task 4:	Jan - Apr/98	Identify HMO costing standards.
Task 5:	Oct/98	Year 2 Annual Report.
Task 6:	Jan - Mar/99	Design system, manuals, train and retrieve military medical utilization data.
Task 7:	Apr - July/99	Analyze military and comparative data.
Task 8:	July -Sept/99	Submit manuscript to Medical Care
Task 9:	June -Sept/99	Identify military costing standards.
Task 10:	Oct/99	Deliver Year 3 Annual Report.
Task 11:	Oct - Nov/99	Compute costs for HMO and Military
Task 12:	Dec/99-Mar/00	Submit manuscript to Nursing Economic$
Task 13:	3/2000	Final Report & Destroy Codebook

Technical Objective #3. To determine to what extent a history of intimate partner abuse is a risk factor for other medical conditions and symptoms, including:[list of related conditions]

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocol.
Task 2:	Apr - May/98	Analyze HMO medical utilization data.
Task 3:	Apr - July/99	Analyze military and comparative medical utilization data.
Task 4:	Aug - Oct/99	Submit manuscript to Violence Against Women
Task 5:	3/2000	Deliver Final Report & Destroy Codebook

Technical Objective #4. To compare military and civilian women's reported medical conditions with those documented in the medical chart and examine the extent to which the correspondence between the two varies between cases and controls.

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocol.
Task 2:	Apr - May/98	Analyze HMO reported and documented medical conditions by cases and controls.
Task 3:	Apr - July/99	Analyze military and combined reported and documented medical conditions.
Task 4:	Aug - Oct/99	Submit manuscript to medical journal.
Task 5:	3/2000	Deliver Final Report & Destroy Codebook

Technical Objective #5. To determine the percentage of military women not disclosing abuse to health care providers because of mandatory reporting regulations in health care settings and to compare health outcomes including (trauma) for those abused military women who disclosed abuse and those who did not.

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocol.
Task 2:	July-Sept/98	Analyze military women's disclosure and outcomes data.
Task 3:	Oct/98	Deliver Year 2 Annual Report.
Task 4:	Nov/98-Jan/99	Submit manuscript to Military Medicine.
Task 5:	Oct/99	Deliver Year 3 Annual Report.
Task 6:	3/2000	Destroy codebook

Technical Objective #6. To assess and compare abused and not abused military and civilian women's preferences for, experiences with and concerns about health care provider policies on domestic violence screening and reporting.

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocols.
Task 2:	Aug - Nov/98	Analyze policy responses by group and selected demographic factors.
Task 3:	Jan/99	Present at APHA
Task 4:	Dec/98-Mar/99	Submit to health policy journal.
Task 5:	Oct/99	Deliver Year 3 Annual Report.
Task 6:	3/2000	Destroy Codebook

Technical Objective #7. To provide workshops for military and civilian primary care personnel including identification and interventions for intimate partner abuse and dissemination of study results.

Task 1:	Oct - Dec/96	Hire & train personnel. Develop communication protocols.
Task 2:	Oct/99-Apr/00	Develop and present workshops/grand rounds
Task 3:	3/2000	Deliver Final Report & Destroy Codebook

APPENDIX 2

LETTERS AND CONSENT FORMS

(RCS) DD-HA(OT)2068

DATE

Name
Address 1
Address 2
City, State, Zipcode

Dear....

We are convinced that the health and well being of active duty military women are critical to the quality and performance of our country's armed forces. We are inviting all active duty women residing in the Capital Area or the Portsmouth/Norfolk area to make a valuable contribution to improving the military's capacity to serve their unique health needs. To better understand how women's health is affected by stress in their daily personal lives, a team of Johns Hopkins University nursing and public health researchers would very much like you to voice your opinions, concerns, and experiences in a CONFIDENTIAL telephone interview.

As part of a joint armed forces study approved by the Defense Women's Health Research Program, we will be conducting telephone interviews with active duty women. Your participation is completely voluntary and confidential. Johns Hopkins will not release the names of either participants or non-participants to the military or any other organization. Also, should you decide to participate, information that you provide will be strictly confidential. No one in the armed forces or any other organization will have access to any information about you.

If you are interested in learning more about this study, please fill out the attached contact form and return it in the pre-addressed stamped envelope. We will then send you an informational letter and a consent form to the address you designate on the attached form. If you wish to speak to someone on the Johns Hopkins team or Military personnel you may call collect the following:

Johns Hopkins team		
Dr. Jacquelyn Campbell	(410) 614-2402	0900 -1700 EST Monday - Friday
	(410) 955-2778	1700 -1800 EST Monday - Friday
	(410) 882-0941	1800 -2000 EST Monday - Friday
Portsmouth Naval Medical		
Mr. Michael Hoskins	(757) 445-0376	0700 -1630 EST Monday - Friday
Ms. Wanda Bailey	(757) 445-0376	0700 -1630 EST Monday - Friday
National Naval Medical Center		
CDR Francis Smith	(301) 295-1232	0700 - 1630 EST Monday – Friday
LT CDR Lisa Raimondo	(301) 295-1840	0700 - 1630 EST Monday - Friday

If no one is available at the time you call, please leave a message including the time and phone number at which you prefer to be called and we will call you back as soon as possible. Thank you for considering this important opportunity to contribute to the efforts of improving the health and well being of military women. We hope to hear from you.

Sincerely yours,

Jacquelyn Campbell, PhD, RN
Professor of Nursing

Name_____ ID____

I am interested in receiving more information about participating in the study on Women's health needs.

Signature: _____

Please print clearly and provide your zipcode. If you plan to change your address in the near future, please inform us when you will be at your current address so that you can be assured of receiving the additional information. Space is provided for an optional second address.

SEND ADDITIONAL INFORMATION TO ADDRESS FROM _____ to _____
mo/dy/yr mo/dy/yr

and/or AFTER _____
mo/dy/yr

Address:_____
Address:_____
State, City, Zipcode:_____
Phone Number:_____
area code

SEND ADDITIONAL INFORMATION TO ADDRESS FROM _____ to _____
mo/dy/yr mo/dy/yr

and/or AFTER _____
mo/dy/yr

Address:_____
Address:_____
State, City, Zipcode:_____
Phone Number:_____
area code

(RCS) DD-HA(OT)2068

date

Ms.

Dear Ms:

Thank you for indicating your interest in participating in the Johns Hopkins Active Duty Women's stress and health needs study. To expand on the first letter you received, you will be called to participate in a brief (10-15 minutes) interview that includes questions about your health status and any personal experience you have had with stress in intimate relationships. We would like to emphasize that your input is valuable and vital even if you have never experienced stress and conflict from your relationship(s). Your health experiences are vital to comprehensively address the health needs of active duty military women.

At the completion of this brief interview, you may also be randomly selected to participate in a follow-up set of questions (20-30 minutes) about the health consequences of stress in your relationships and your opinions on relevant military policies. Like with the first part of the interview, your participation is completely voluntary and confidential. No one in the military will have access to any information traceable to you. Because a civilian survey firm, QuanTech, will be conducting all interviews, any relationship conflict that you describe WILL NOT be reported to the Family Advocacy Program or your command or anyone else in the military. The Mandatory Reporting of relationship conflicts and Family Advocacy Program regulations DO NOT apply to this study. Furthermore, no one in the military will know that you have received this letter describing the study. The military principal investigators, Mr. Michael Hoskins at the Portsmouth Naval Medical Center and CDR Francis Smith at the National Naval Medical Center do not have access to the names of those contacted or interviewed.

If you are willing to be interviewed, please read and fill out the enclosed documents. For the consent form (Voluntary Agreement Affidavit) you also need to have a witness sign the form. Please return the consent form and the telephone contact sheet in the postage-paid envelope to Dr. Jacquelyn Campbell, Johns Hopkins University School of Nursing, 525 North Wolfe Street, Baltimore, MD 21205.

We look forward to hearing from you again. If you wish to speak to someone on the Johns Hopkins team or Military personnel you may call collect the following:

Johns Hopkins team		
Dr. Jacquelyn Campbell	(410) 614-2402	0900 -1700 EST Monday - Friday
	(410) 882-0941	1800 -2000 EST Monday - Friday
Portsmouth Naval Medical		
Mr. Michael Hoskins	(747) 445-0376	0700 -1630 EST Monday - Friday
Ms. Wanda Bailey		
National Naval Medical Center		
CDR Francis Smith	(301) 295-1232	0700 - 1630 EST Monday - Friday
LT CDR Lisa Raimondo	(301) 295-1840	0700 - 1630 EST Monday - Friday

Sincerely yours,

Jacquelyn Campbell, PhD, RN
Professor of Nursing

(RCS) DD-HA(OT)2068

Name: ID#

The professional interviewer from Quantech may call me to participate in the Women's Health study conducted by Johns Hopkins University and sponsored by DOD.

Please indicate your phone number(s) where you can be reached and the block(s) of time when you prefer us to call you for each phone number:

Phone Numbers and Times to Call

First Choice _____
area code number

- ☐ 9 AM – Noon Weekdays
- ☐ Noon – 5 PM Weekdays
- ☐ 5 PM – 9 PM Weekdays
- ☐ Weekends

Second Choice _____
area code number

- ☐ 9 AM – Noon Weekdays
- ☐ Noon – 5 PM Weekdays
- ☐ 5 PM – 9 PM Weekdays
- ☐ Weekends

☐ **Please check here if it is okay for Quantech to leave a telephone message on your answering machine.**

(RCS) DD-HA(OT)2068

VOLUNTEER AGREEMENT AFFIDAVIT

For use of this form, see AR 70-25 or AR 40-38; the proponent agency is OTSG

PRIVACY ACT OF 1974

Authority: 10 USC 3013, 44 USC 3101, and 10 USC 1071-1087.

Principle Purpose: To document voluntary participation in the Clinical Investigation and Research Program. SSN and home address will be used for identification and locating purposes.

Routine Uses: The SSN and home address will be used for identification and locating purposes. Information derived from the study will be used to document the study; implementation of medical programs; adjudication of claims; and for the mandatory reporting of medical conditions as required by law. Information may be furnished to Federal, State and local agencies.

Disclosure: The furnishing of your SSN and home address is mandatory and necessary to provide identification and to contact you. If future information indicates that your health may be adversely affected. Failure to provide the information may preclude your voluntary participation in this investigational study.

PART A(1) – VOLUNTEER AFFIDAVIT

Volunteer Subjects in Approved Department of the Army Research Studies

Volunteers under the provisions of AR 40-38 and AR 70-25 are authorized all necessary medical care for injury or disease which is the proximate result of their participation in such studies.

I, _____, SSN _____

having full capacity to consent and having attained my _____ birthday, do hereby volunteer/give consent as legal representative for myself to participate in _____

Health of Military and Civilian Women

under the direction of Dr. Jacquelyn Campbell at Johns Hopkins School of Nursing

conducted at Quantech (telephone survey firm)

(Name of Institution)

The implications of my voluntary participation/consent as legal representative; duration and purpose of the research study; the methods and means by which it is to be conducted; and the inconveniences and hazards that may reasonably be expected have been explained to me by

this consent form. I may call CDR Smith or Dr. Campbell with further questions before returning this form by mail.

I have been given an opportunity to ask questions concerning this investigational study. Any such questions were answered to my full and complete satisfaction. Should any further questions arise concerning my rights/the rights of the person I represent on study-related injury, I may contact

CDR Francis Smith Dr. Jacquelyn Campbell

at NNMC (301) 295-1232 Johns Hopkins (410) 614-2402

[Name, Address and Phone Number of Hospital (Include Area Code)]

I understand that I may at any time during the course of this study revoke my consent and withdraw/have the person I represent withdrawn from the study without further penalty or loss of benefits; however, I /the person I represent may be required (military volunteer) or requested (civilian volunteer) to undergo certain examination if, in the opinion of the attending physician, such examinations are necessary for my/the person I represent's health and well-being. My/the person I represent's refusal to participate will involve no penalty or loss of benefits to which I/the person I represent is otherwise entitled.

LIMITATIONS TO MEDICAL CARE ARE DESCRIBED IN PART B

PART A (2) – ASSENT VOLUNTEER AFFIDAVIT *(MINOR CHILD)*

I, _____, SSN _____ having full capacity to assent and having attained my _____ birthday, do hereby volunteer for _____ to participate in _____

under the direction of _____

Conducted at _____

(Name of Institution

PART A(2) – ASSENT VOLUNTEER AFFIDAVIT (MINOR CHILD) (Cont'd)

The implications of my voluntary participation; the nature, duration, and purpose of the research study; the methods and means by which it is to be conducted; and the inconveniences and hazards that may reasonably be expected have been explained to me by

I have been given an opportunity to ask questions concerning this investigational study. Any such questions were answered to my full and complete satisfaction. Should any further questions arise concerning my rights I may contact

at _____
[Name, Address, and Phone Number of Hospital (Include Area Code)]

I understand that I may at any time during the course of this study revoke my assent and withdraw from the study without further penalty or loss of benefits; however, I may be requested to undergo certain examinations if, in the opinion of the attending physician, such examinations are necessary for my health and well-being. My refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled.

LIMITATIONS TO MEDICAL CARE ARE DESCRIBED IN PART B

PART B - TO BE COMPLETED BY INVESTIGATOR

INSTRUCTIONS FOR ELEMENTS OF INFORMED CONSENT: (Provide a detailed explanation in accordance with Appendix C, AR 40-38 or AR 7-2

Consent for Voluntary Participation in a Clinical Investigation Study

The purpose of this research project is to examine the relationships of women with male intimate partners, the health, well being and use of health care by women, and women's ideas and opinions about mandatory reporting of domestic violence. I understand that this project is not designed to treat any medical condition that I may have, therefore, there is no alternative procedure or course of treatment t hat would be advantageous to me.

The entire project will take approximately 3.5 years to complete. I understand my participation in this research military project will be a one time interview for a period of 5 to 35 minutes. A total of 2,000 civilian subjects are expected to participate in this study.

The procedure for this project involves: I will receive or make a telephone call to Quantech, a civilian survey firm, for an interview of 5 to 35 minutes. I am aware that the only experimental part of this research is a telephone interview.

The researchers will also review my entire medical record for the years 1994,95 & 96 regarding health care utilization. The information in my medical diagnoses and health care services will be summarized in a coding sheet that contains only code number and not my name.

The risks or discomforts which are possible are as follows:

1. Uncomfortable feelings in discussing relationships. Information about counseling and mental health services will be offered.

2. Women in problem relationships must be alert to assure their privacy. Participants may hang up at any time during the interview and may make appointments for the interview at specified telephone numbers or call Quantech themselves. Information about domestic violence assistance community resources will be offered, such as the National Hotline telephone number (1-800-799-SAFE)

(See attachment-page 2)

I understand and accept these risks _____
Subject /Patient Initials

The research may not help me personally, but that the results may help the investigators learn about women's health, women's use of health care, and women's relationships with men to improve women's health services in the future. It will also provide information on women's ideas and preferences about mandatory reporting of domestic violence. Analysis will compare experiences, health and opinions of women who do and do not report abuse and who are military and civilian.

In all publications and presentations resulting from this research project, my anonymity will be protected to the maximum extent possible. All data and medical information obtained about me as an individual will be considered privileged and held in confidence using a code number. I realize that authorized Navy Medical Department personnel or representatives of the US Army Medical and Material Command may have access to my research file in order to verify my rights have been safeguarded, but may not disclose specifics about me to anyone else. I further realize that the codebook that identifies me will be kept in a locked file at Johns Hopkins University and accessible only to Dr. Campbell and will be destroyed at the completion of the study.

My identity in this research is protected by a certificate of confidentiality from the Department of Health and Human services (DHHS). This certificate protects disclosure of my identity for any legal proceedings with the following exceptions: I voluntarily request disclosure in writing, release is required by FDA regulations or for verification of protection of my right as stated above, **or if there is clear evidence that a child is currently in danger from abuse or neglect, in which case, we are obligated to refer this situation to Social Services.**

If I have questions regarding my rights as an individual while participating in a research project at National Naval Medical Center, Bethesda, I can contact the Research Administrators, Clinical Investigation Department, at (301)295-2275. They will answer my questions or refer me to a member of the Institutional Review Board for further information. If I believe I have been injured as a result of this project, I may call the Legal Office at (301)295-2215.

In the future, I am no longer eligible for health care as a DOD beneficiary, my participation in this research project does not guarantee my future medical care. I understand that if I am no longer a DOD beneficiary, I will not be able to obtain medical treatment from a DOD health care facility for any injuries or side effects that result from my participation in this research project. I will be responsible for seeking treatment elsewhere.

Participation is voluntary. If you have any questions about participating call Dr. Jacquelyn Campbell at (410) 955-2778 or (410) 614-2402 or CDR Francis Smith at (301) 295-1232.

I do ☐ do not ☐ (check one & initial) consent to the inclusion of this form in my outpatient medical treatment record.

SIGNATURE OF VOLUNTEER	DATE	SIGNATURE OF LEGAL GUARDIAN (If volunteer is a minor
PERMANENT ADDRESS OF VOLUNTEER	TYPED NAME OF WITNESS	
	SIGNATURE OF WITNESS	DATE

Naval Medical Center
Portsmouth, Virginia 23708

(RCS) DD-HA(OT)2068

CONSENT FOR VOLUNTARY PARTICIPATION IN A CLINICAL INVESTIGATION STUDY

DATE:_____

Consent for Voluntary Participation in a Clinical Investigation Study

1. I, _____, have been asked to voluntarily participate in a research project entitled, Identification of Abuse and Health Consequences for Military and Civilian Women / (CIP#P98-081) being conducted at Johns Hopkins School of Nursing, 525 North Wolfe Street, Baltimore, MD 21205.

2. The purpose of this research project is to examine the relationships of women with male intimate partners, the health, well being and use of health care by women, and women's ideas and opinions about mandatory reporting of domestic violence. I understand that this project is not designed to treat any medical condition that I may have, therefore, there is no alternative procedure or course of treatment that would be advantageous to me.

3. My participation in this research project will be for a period of 5 to 35 minutes to complete a one-time telephone interview. The entire project will take approximately 3.5 years to complete

4. The procedure for this project involves: a telephone call from Quantech, a civilian survey firm, for an interview of 5 to 35 minutes. The researchers may also review my entire medical record for the years 1995, 96 & 97 regarding health care utilization. The information in my medical diagnoses and health care services will be summarized in a coding sheet that contains only code number and not my name.

5. Specifically, I am aware that the only experimental part of this research is a telephone interview.

6. A total of 2,000 military women and 2,000 civilian women are expected to participate in this study.

7. The risks or discomforts which are possible are as follows:
   - Uncomfortable feelings in discussing relationships. Information about counseling and mental health services will be offered.
   - Women in problem relationships must be alert to assure their privacy. Participants may hang up at any time during the interview and may make appointments for the interview at specified telephone numbers or call Quantech themselves. Information about domestic violence assistance community resources will be offered, such as the National Hotline telephone number (1-800-799-SAFE). I understand and accept these risk _____ (Subject /Patient Initials).

1. The research may not help me personally, but that the results may help the investigators learn about women's health, women's use of health care, and women's relationships with men to improve women's health services in the future. It will also provide information on women's ideas and preferences about mandatory reporting of domestic violence. Analysis will compare experiences, health and opinions of women who do and do not report abuse and who are military and civilian.

2. I can choose not to participate in this study.

3. In all publications and presentations resulting from this research project, my anonymity will be protected to the maximum extent possible. All data and medical information obtained about me as an individual will be considered privileged and held in confidence using a code number. I realize that authorized Navy Medical Department personnel or representatives of the US Army Medical and Material Command may have access to my research file in order to verify my rights have been safeguarded, but may not disclose specifics about me to anyone else. I further

realize that the codebook that identifies me will be kept in a locked file at Johns Hopkins University and accessible only to Dr. Campbell and will be destroyed at the completion of the study.

4. If I suffer any physical injury as a result of my participation in this study, immediate medical treatment is available at Naval Medical Center, Portsmouth. Although no compensation is available, any injury as a result of my participation will be evaluated and treated in keeping with the benefits or care to which I am entitled under applicable regulations.

5. If I have questions regarding this research project, I may contact Dr. Jacquelyn Campbell at (410) 614-2402 or Mr. Michael Hoskins, Principal Investigator or Ms. Wanda Bailey, Assistant Investigator at (757) 445-0376. If I have any questions regarding my rights as an individual while participating in a research project at Naval Medical Center, Portsmouth, I can contact the Chair, Institutional Review Board or CAPT M. Zajdowicz, Head, Clinical Investigation and Research Department at (757) 953-5939.

6. My participation in this project is voluntary and my refusal to participate will involve no penalty or loss of benefits to which I am entitled under applicable regulations. If I choose to participate, I am free to ask questions or to withdraw from the study at any time. My withdrawal will involve no loss of benefits to which I am entitled.

7. I understand that my identity in this research is protected by a certificate of confidentiality from the Department of Health and Human services (DHHS). This certificate protects disclosure of my identity for any legal proceedings with the following exceptions: I voluntarily request disclosure in writing, release is required by FDA regulations or for verification of protection of my right as stated above, or if there is clear evidence that a child is currently in danger from abuse or neglect, in which case, we are obligated to refer this situation to Social Services.

8. I understand that if, in the future, I am no longer eligible for health care as a DOD beneficiary, my participation in this research project does not guarantee my future medical care. I understand that if I am no longer a DOD beneficiary, I will not be able to obtain medical treatment from a DOD health care facility for any injuries or side effects that result from my participation in this research project. I will be responsible for seeking treatment elsewhere

9. Participation is voluntary. If you have any questions about participating call Dr. Jacquelyn Campbell, Principal Investigator, Johns Hopkins University at (410) 614-2402 or Mr. Michael Hoskins, Principal Investigator, Naval Medical Center, Portsmouth at 757) 445-0376.

I certify that I have received a copy of this consent form.

Subject's Signature	Date	Typed Name
		Status & Sponsor's SSN
Witness' Signature	Date	Typed Name
		Rank and SSN
Investigator's Signature	Date	Typed Name
		Rank and SSN

PRIVACY ACT STATEMENT

1. Authority. 5 USC 301

Privacy Act Statement
Identification of Abuse and Health Consequences for Military and Civilian Women

Principal Purpose for which information is intended to be used:
Information collected from this study will advance the awareness of active duty women's health and suggest better ways to provide them protection and medical care.

Disclosure:
Information traceable to you will not be maintained after the survey and medical records data are collected. Your participation in the survey is voluntary. There is no penalty if you choose not to respond.

Routine Uses:
Some results will be published in professional journals or reported in manuscripts presented at conferences, symposia, and scientific meetings. In no case will the information be reported or used to identify individual respondents.

SIGNATURES AND **DATE** SIGNED:

PATIENT/SUBJECT (Date)

WITNESS (Date)

PRINTED OR **TYPED IDENTIFICATION**:

Printed Name

Sponsor's Status and SSN

Printed Name

Grade or Rank/SSN

APPENDIX 3

PREVALENCE PAPER

Annual and Lifetime Prevalence of Partner Abuse in a Sample of Female HMO Enrollees

Alison Snow Jones, PhD[1]

Jacquelyn C. Campbell, PhD, RN, FAAN[2]

Janet Schollenberger, MHS[2]

Patricia J. O'Campo, PhD[3]

Jacqueline A. Dienemann, PhD, RN, FAAN[2]

Andrea Carlson Gielen, ScD[1]

Joan Kub, PhD, RN[2]

E. Clifford Wynne, MD[4]

Address Correspondence to: Alison Snow Jones, The Johns Hopkins University, School of Hygiene and Public Health, Department of Health Policy and Management, 624 North Broadway, Baltimore, MD 21205. Phone: 410.955.0438. Fax: 410.955.0470. Email: asjones@jhsph.edu

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[4] Kaiser-Permanente, Washington, DC.

Title: Annual and Lifetime Prevalence of Partner Abuse in a Sample of Female HMO Enrollees

Self-reported data from a survey of roughly 1,100 female HMO enrollees in the Washington, DC, metropolitan area are used to investigate the lifetime and annual prevalence of emotional, physical and sexual abuse by intimate partners. The sample consists of a racially balanced and, for the most part, well-educated group of working women. Three dimensions of abuse based on responses to questions from a modified version of the *Abuse Assessment Screen* are employed. In addition to simple descriptive analyses, logistic regression was performed. The estimated annual prevalence is lower than estimates reported in other studies. However, lifetime prevalence is very similar to estimates found in primary care clinical samples and somewhat higher than those derived from population-based surveys. More highly educated women report the lowest lifetime prevalence of intimate partner abuse. The finding that this sample of well-educated, middle class, working women has lifetime prevalence rates similar to those of women who are not as well off demonstrates that intimate partner abuse is not limited to disadvantaged women from vulnerable population subgroups.

Annual and Lifetime Prevalence of Partner Abuse in a Sample of Female HMO Enrollees

Introduction

Studies of intimate partner abuse among women in the general population have unambiguously documented that women report high rates of abuse by intimate partners at least once in their lifetimes [(1), (2)]. A number of studies have also documented high rates of intimate partner abuse in women using primary care and emergency care clinics [(3), (4), (5), (6), (7), (8)] and high rates of injury and other health problems associated with battered partners [(9), (10)]. This study provides estimates of the lifetime and annual prevalence of intimate partner abuse using self-reported data from a survey of 1,138 female HMO enrollees in the metropolitan Washington, DC area. The sample represents a racially balanced and, for the most part, highly educated group of middle class, working women. It is also a group that many healthcare practitioners might expect to be at reduced risk of ever having experienced partner abuse.

Previous Research

Tables 1 and 2 summarize lifetime and annual prevalence estimates from other clinical and population-based samples. Some of the variation in estimated prevalence rates described in these tables arises from sample restrictions and definitions of abuse. In general, annual prevalence estimates from clinical samples tend to exceed those from nationally representative samples. Lifetime prevalence estimates from primary care clinics and general population surveys tend to be fairly similar; ranging from roughly 21% to 39% in the studies cited in here. When population-based samples are restricted to only those women currently residing with a male

partner, estimates of annual prevalence are relatively low regardless of sample: 5.5% to 13.6% [11], [9], [10], [12]. However, when the sample is not so restricted, estimates of annual prevalence rise to between 12% and 26% [13]. These figures are even higher among younger women [14] and among women whose socio-economic status is low [3].

Data

Letters asking women to participate in a women's health survey were sent to 10,599 female enrollees of a metropolitan Washington, DC area HMO who were between the ages of 21 and 55 years on January 1, 1997. There was no reference to "abuse" in this letter. Those who were willing to participate (14%) mailed back consent forms and indicated a time(s) and telephone number(s) where it would be convenient for them to be contacted and interviewed "in private." A description of further precautions taken to ensure the safety of all study participants is available from the authors. Because the larger study will examine health services use among these women, the mailing list was restricted to women who had been continuously enrolled in the HMO from before or on January 1, 1995 through December 31, 1997. The telephone survey team was given training about domestic violence and safety procedures prior to contacting the 1,476 women who consented to be interviewed by phone. On telephone contact, 271 (18.3%) women were not locatable and 66 (4.5%) refused to participate when phoned. The final sample consisted of 1,138 women who were interviewed by phone between September, 1997, and March, 1998.

Sample characteristics are given in the second column of Table 3. As a group these are highly educated, middle to upper-middle class women. It is a racially balanced group consisting of equal proportions of white and African-American women. Latinos and other minorities comprise a very small proportion of the women sampled, which is characteristic of the

geographic area from which the sample is drawn. Ninety percent are employed either full or part time. More than half were married at the time of the survey and more than half have household incomes that exceed $50,000 per year. Just over fifty percent had at least one child. Unfortunately, since the HMO does not compile any statistics on the demographic characteristics of their enrollees, there was no way to compare this sample with the larger population of all women enrolled in the HMO.

Methods

Two dimensions of abuse (physical or sexual) are employed throughout this analysis based on responses to questions from a modified version of the *Abuse Assessment Screen* (AAS) [14], [15]. Unlike the AAS, which asks about emotional and physical abuse in the same question, respondents in this study were asked about these types of abuse separately (see Figure 1, Questions 1 and 3). A woman was classified as having experienced sexual abuse if she gave a positive response to Question 5 in Figure 1. The definition of physical abuse that was used included pushing, shoving, punching, kicking, or threatening with a weapon (Question 4 in Figure 1) as well as the woman's own perception that she had been physically abused (Question 3 in Figure 1). All women who responded affirmatively to Questions 3 or 4 were considered to have experienced physical abuse. Roughly 90% of all women who were classified as having been abused responded positively to Question 4. The remaining 10% responded positively only to Question 3.

The sample includes women who were not currently living or intimately involved with a partner at the time of the interview. Those who were currently involved or living with a partner and who reported past abuse may not have been abused by their current partner. Women with

previous or current romantic intimate female partners are also included in this sample. The last group accounted for less than 1% of the total that reported abuse by an intimate partner.

Results

Lifetime Prevalence Estimates

Lifetime prevalence rates of sexual and physical abuse are presented in Column 3 of Table 3. Overall, the sample had a lifetime prevalence of thirty-seven percent. Women in their thirties report the lowest overall prevalence (30.2%) while women in their forties report the highest (42.2%). Across racial groups, white European women report the lowest prevalence of physical and/or sexual abuse while African-American women report the highest. Lifetime prevalence is highest for widows (70%) although the number of women who are widowed in this sample is quite small (n=63). The finding that separated or divorced women have a high prevalence of intimate partner abuse (60.5%) is not surprising since abuse is often associated with marital failure either as a cause or a consequence.[7], [19]

There is a linear downward trend in lifetime prevalence of intimate partner violence as the respondent's education increases. A chi-square test indicates that women with four or more years of college report significantly lower lifetime prevalence of physical abuse [p=.001]. Women employed full-time report the highest lifetime prevalence of physical and/or sexual abuse. Women living in households with incomes under $50,000 also report significantly higher lifetime prevalence rates. The prevalence of physical abuse increases nearly linearly with the percentage of income that women contribute to their current household. Women with no children or only one child report the highest lifetime prevalence of physical or sexual abuse.

Annual Prevalence Estimates

Annual prevalence for any type of physical or sexual abuse was four percent in this sample (Column 4 of Table 3) based on reported abuse in a 12-month period (during 1996-1997) prior to the administration of the survey. Women in their twenties report the highest annual prevalence of physical or sexual abuse. There is also a the pronounced downward linear trend in annual prevalence of physical and/or sexual abuse with age. African-American women have more than twice the rate of physical or sexual abuse as white women ($p<.01$). Also similar to the findings for lifetime prevalence, women who report being widows have the highest annual prevalence, while married women report the lowest ($p <.001$). Interestingly, the downward trend observed for education on lifetime prevalence is not observed for annual prevalence, except for women in the highest education category. Surprisingly, unemployed women have the lowest annual prevalence of physical or sexual abuse.

Women residing in households with annual incomes between $30K and $50K appear to be at highest risk of recent physical or sexual abuse. There is also a striking and significant difference in annual prevalence between the two lowest income groups and the two highest ($p<.005$). As with lifetime prevalence, women in the higher income categories (>$50K) report the lowest annual prevalence of intimate partner physical abuse. However, the highest income category is more protective for annual than lifetime abuse. Women with no children have an annual prevalence rate that is less than one half the rate of women with one or more children.

Logistic Regression Analysis

In order to take account of possible correlation among risk factors, logistic regression was estimated using a binary indicator of lifetime physical or sexual abuse as the dependent variable.

The results of this regression are presented in Table 4. Because of the small number of women who were abused within the past year, it was not possible to conduct a similar regression analysis of annual prevalence.

In contrast to the simple descriptive results presented in Table 3, income and employment effects are non-existent when other confounding variables are controlled. However, as was seen previously, age, race, marital status, and education are significantly associated with lifetime abuse. Moreover, the patterns seen in Table 3 persist. Risk of lifetime abuse is elevated by roughly 70% in both the 20-29 year age group and the 40-49 year age group relative to 30-39 year olds. The elevated prevalence among 50-59 year olds relative to this latter group is not seen in this regression. African-American women experience an elevated risk of about 30 per cent. However, this is not strongly statistically significant (p=.09) suggesting that when other factors are included, the strong differences observed in Table 3 are diminished. The strong elevated effects for separated, divorced, and widowed women (OR: 2.54; 3.99 respectively) are still observed as is the strong diminution of effect for women with college or graduate degrees (OR: 0.54).

Discussion

This sample's lifetime prevalence estimate of 37% is very similar to those prevalence estimates found in primary care clinical samples cited in Table 1 and somewhat higher than most of those derived from the population-based surveys reported in Table 2. However, unlike many of these other samples, this sample is highly educated and for the most part financially well off. It is comprised of women that many would assume are not likely to have experienced intimate partner abuse. The finding that these "low risk" women have lifetime prevalence rates similar to

those of women who are not as well off socio-economically reinforces the fact that such violence is not limited to disadvantaged women. Moreover, it suggests that a large portion of the female population is at risk during some part of their lifetime for the negative psychological and physical sequelae of partner abuse.

The sample's annual prevalence estimate (4.0%) is lower than all the annual estimates reported in Tables 1 and 2. This low annual prevalence rate may reflect the high level of education and income observed in this sample. Since the income and education levels reported are current whereas the abuse could have occurred at any time in the past, it would be expected that these factors would have their strongest influence on abuse that occurred most recently. Thus, the "protective" or "empowering" influence of education and income in enabling women to leave and/or take other actions to deter the violence would be manifested more strongly in the annual prevalence estimates for this group.

The logistic regression analysis presented in Table 4 suggests that among characteristics associated with *decreased* risk of ever having been abused, education is the most important. There are several possible explanations for this finding. One is that more highly educated women have more financial resources available to them, thus enabling them to leave at the first sign that a partner is potentially violent. It is also possible that the potentially violent partner is less likely to act out towards a partner who has more "freedom" to leave [16], [17], [18]. Another explanation is that education proxies some other unmeasured characteristic of one or both of the partners. More highly educated individuals may be more "emotionally resourceful" in negotiating and resolving conflict than their less well educated counterparts. Or more highly educated individuals may be more sensitive to the potentially negative consequences and community sanctions against batterers, particularly those that might influence occupational

opportunities or social status. These speculations cannot be tested using these data because the data do not include information on the woman's educational attainment (or that of her partner) at the time of the abuse. However, this finding warrants further investigation as it may suggest new approaches to preventing intimate partner violence.

Characteristics that are associated with *increased* risk of lifetime abuse are age, race and marital status. Of these, marital status is the most difficult to interpret. This is because of the uncertainty regarding the direction of causality between this characteristic and intimate partner abuse. It is not possible to determine from these data if separation or divorce was the consequence of pre-existing abuse or if separation or divorce "triggered" abusive behavior by the partner. Other research indicates that separation and divorce represent an increased risk for serious intimate partner assault [7], [19]. Findings from longitudinal studies [20] and studies that examined the impact of separation on intimate partner homicide [21], [22] suggest that at least part of this elevation in risk is related to increased violence when a woman leaves.

The finding that widows are four times more likely to have been abused in their lifetime is puzzling. One possible explanation for this finding is that it is a proxy for some other risk factor. Perhaps the partners of this relatively small portion of the sample were more likely to drink and drive, start fights in bars, use drugs, and engage in high-risk behaviors that increase the probability of death by homicide or accident. There is some evidence that these behaviors are associated with personality traits or psychological profiles that are also associated with a higher likelihood of intimate partner violence [23], [24], [25].

The increased risk for women who contribute the bulk of the household income would be consistent with the status inconsistency premise first advanced by Allen and Straus. [26] These authors hypothesized that men who were of a lower education, job, or income category than their

wives in a society that expected males to have higher status would be more prone to use violence in conflicts with their partners. This premise was supported by data from Hornung et al. [27], but was not supported in other settings. [28] More recent work using longitudinal data found that employed men were much less likely to physically assault their partners. [29] However, there is some evidence that when the woman's income is very high relative to the man's, the level of violence may increase. [30] In the findings reported here, this variable does not necessarily reflect the woman's income contribution status at the time of the abuse. Future studies should aim to clarify these relationship dynamics.

The finding that a significantly elevated risk of physical abuse among African-American women is substantially diminished when income and education are controlled for is consistent with Lockhart [31] who suggested that race may be confounded by omitted variables such as income and education in such studies. While there is still a 30% elevation in risk, the effect is only significant at the p=.09 level.

Conclusions

This study has examined the lifetime and annual prevalence of intimate partner violence in a sample of female HMO enrollees. The results for lifetime prevalence (37%) are consistent with those of previous studies despite significant differences between samples in socio-economic status. At the same time, the annual prevalence rate in this sample was 4.0%, which is lower than estimates from previous studies. The lifetime prevalence results provide further evidence that intimate partner violence is prevalent among women of all ages and income categories and represents a significant risk to U.S. women, in general. The annual prevalence results suggest that younger women are most likely to be currently at risk.

In this sample, more highly educated women were least likely to report ever having been abused. This effect persists even when other risk factors including income are controlled for. It suggests that education is "protective" against intimate partner violence over and above whatever "empowerment" might be derived from the higher income associated with higher education. A better understanding of this finding could provide valuable guidance in formulating future programs that aim to prevent intimate partner violence. Future research should be directed to elucidating the role of higher education in reducing the risk of ever having experienced intimate partner abuse.

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Figure 1

Partner Abuse Screening Questions

Q. 1 Have you ever as an adult been emotionally abused by a husband, boyfriend, or female partner?
1..... Yes
2..... No
8..... Don't Know
9..... Refused

Q.2 Have you experienced any emotional abuse in the last 12 months, that is, since September of last year?
1..... Yes
2..... No
8..... Don't Know
9..... Refused

Q.3 Have you ever as an adult been physically abused by a husband, boyfriend, or female partner?
1.....Yes
2..... No
8..... Don't Know
9..... Refused

Q.4 Okay, this question is worded a little different. Have you ever been hit, slapped, kicked, pushed, or shoved or otherwise physically hurt by a current or previous husband, boyfriend, or female partner?
1..... Yes
2..... No
8..... Don't Know
9..... Refused

Q.5 Have you ever, as an adult, been forced into sexual activities by a husband, boyfriend, or female partner?
1..... Yes
2..... No
8..... Don't Know

Table 1
Estimates of Lifetime and Annual Prevalence of Partner Abuse
Studies Based on Clinical Samples

Study	Outcome Measure	Sample	Prevalence Estimate
Rath, Jarratt, and Leonardson (1989) [3]	Not Specified. Except "abuse" was not used in the screening questions.	Female Patients, Sioux Falls, SD, Clinics (High proportion of low SES respondents)	Annual Verbal Abuse: 47% Annual Minor Physical Abuse: 44% Annual Severe Physical Abuse: 28%
Gin et al (1991) [4]	Hit or hurt by significant other with whom currently living.	Male & Female Patients, 3 University Affiliated Primary Care Internal Medicine Practices	Current: 14% Lifetime: 28% Female Lifetime: 34% Male Lifetime: 12%
Martins, Holzapfel, & Baker (1992) [32]	Modified CTS	All women patients seen during 2 week period at family practice clinic (n=273)	Prevalence: 7%
Hamburger, Saunders, & Hovey (1992) [5]	Physical assault by partner (CTS), pushed, shoved → severe	Female Patients, Family Practice Clinic, Midwestern City	Annual: 22.7% Lifetime: 38.8%
Abbott et al (1995) [6]	Assault, threat, or intimidation by a male partner	Female Patients, 2 Teaching EDs, 2 Hospital Walk-in Clinics, 1 Private Hospital ED	Annual prevalence (women with current male partner): 11.7% Annual prevalence (women w/o current male partner): 5.6% Lifetime: 54.2%
McCauley et al (1995) [8]	Hit, slapped, kicked, physically hurt, or forced sexual activities by husband, ex-husband, boyfriend, or relative.	Female Patients, 4 Community-based, Primary Care Internal Medicine Practices	Annual: 5.5% Adult Lifetime: 21.4% Childhood & Adult Lifetime: 32.7%
Dearwater et al (1998) [7]	Annual: Physical or Sexual Abuse Lifetime: Emotional or Physical Abuse	Women 18 years and older treated in community hospital emergency departments in Pennsylvania and California	Annual: 14% (CA: 17%; PA: 12%) Lifetime: 36% (CA: 44%; PA: 31%)

Table 2
Lifetime and Annual Prevalence of Partner Abuse
Studies Based on General Population Surveys

	Study	Outcome Measure	Sample	Prevalence Estimate
Nationally Representative Population-based Surveys	Straus, Gelles, and Steinmetz (1980) [33]	CTS	National Survey, U.S. Women, 1975	Annual: 11.6%
	Straus & Gelles (1986) [12]	CTS	National Survey, U.S. Women, 1985	Annual: 12.1%
	Elliott et al. (1985) [13]		National Survey, U.S. Women (18-24 years)	Annual: 38.8%
	Plichta (1996) [9]	Physical assault by partner (CTS), pushed, shoved → severe	National Survey, U.S. Women (18-64 years, currently living with or married to a man)	Annual: 8.4%
	Commonwealth Fund (1993) [10]	Physical abuse by spouse or partner	National Survey, US Women (married or living with someone as a couple)	Annual: 8%
	Klein, Campbell, Soler, and Ghez (1993) [34]	"Violent Abuse" by spouse or boyfriend	Family Violence Prevention Fund National Survey, US Women,	Lifetime: 33%
	Schafer, Caetano, and Clark, 1998 [11]	Physical assault by partner (CTS), pushed, shoved → severe	Multistage probability sample of both members of 1635 representative married and non-married couples living in 48 contiguous states	Annual Male to Female: 5.2-13.6%

Table 3
Lifetime and Annual Prevalence Rates of Physical or Sexual Abuse by Intimate Partners in a Sample of Female HMO Enrollees

Characteristics	N	Sample Mean	Lifetime Prevalence	Annual Prevalence
Total Sample	1,138		36.9%	4.0%
Age Group				
21-29	73	6.4%	35.7%	8.2%
30-39	351	30.8%	30.2%	5.4%
40-49	514	45.2%	42.2%	3.5%
50-56	200	17.6%	35.5%	1.0%
Race				
White European	531	46.7%	27.4%	2.4%
African-American	531	46.7%	47.1%	5.8%
Other minority	74	6.6%	32.5%	1.6%
Current Marital Status				
Married	669	58.5%	27.5%	2.1%
Separated or Divorced	180	15.8%	60.5%	6.1%
Never Married	226	19.9%	36.7%	4.9%
Widowed	63	5.5%	69.8%	14.3%
Education				
= HS Grad[1]	287	25.3%	49.0%	4.9%
Some College	467	32.4%	42.2%	4.6%
4 Years College	251	22.2%	27.5%	4.4%
Post Graduate	227	20.1%	22.9%	1.3%
Employment Status				
Full-time	847	76.8%	39.5%	3.9%
Part-time	147	13.3%	26.5%	4.1%
Unemployed[2]	109	9.9%	30.2%	3.7 %
Household Income				
<$30K	188	17.1%	48.5%	5.3%
$30K - $50K	292	26.5%	47.3%	7.5%
$51K - $80K	340	30.9%	32.0%	2.4%
>$80K	281	25.5%	27.0%	1.8%
Percent HH income contributed by respondent				
<25%	151	13.5%	22.4%	2.6%
25-50%	265	23.7%	28.3%	3.0%
51-75%	269	24.1%	32.7%	2.6%
>75%	433	38.7%	50.2%	5.8%
Number of Children in Household				
No Children	492	43.2%	38.8%	2.2%
1 Child	262	23.0%	41.2%	5.0%
2 Children	248	21.8%	31.1%	5.6%
3 or more children	136	12.0%	33.1%	4.4%

[1] Includes GED, 26 Trade School Graduates and 16 women who did not complete high school.
[2] Roughly half of the women in this category reported that they are homemakers.

Table 4
Risk Factors for Lifetime Prevalence of Sexual and Physical Abuse by Intimate Partners in a Sample of Female HMO Enrollees

Characteristic	Ever Abused		
	Odds Ratio	Confidence Interval	
Age			
21-29	1.66*	0.91	3.04
40-49	1.69**	1.21	2.36
50-56	1.29	0.82	2.02
Race			
African-American	1.32*	0.96	1.81
Marital Status			
Separated or Divorced	2.54***	1.58	4.13
Never Married	1.01	0.63	1.62
Widowed	3.99***	2.01	7.90
Education[1]			
= HS Grad	1.22	0.86	1.74
College Grad +	0.54***	0.39	0.75
Employment			
Part-time	0.89	0.55	1.44
Not in labor force	1.01	0.58	1.76
Household Income			
<$30K	1.06	0.68	1.67
$30K - $50K	1.21	0.83	1.78
>$80K	1.06	00.72	1.56
% Contribute to HH Income[2]			
≤25%	0.68	0.35	1.31
26%-50%	0.86	0.53	1.39
51%-75%	0.83	0.53	1.30
Number of Children in Household[3]			
1 Child	1.05	0.74	1.50
2 Children	.89	0.60	1.31
3 or more Children	1.05	0.65	1.72

* p=.1; ** p=.01; *** p=.001

*

[1] Omitted category is the numerically largest category, women with some college education.
[2] Omitted category is the numerically largest category, women who contribute 80-100% of household income.
[3] Omitted category is the numerically largest category, women with no children.