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# *The Effects of Peer Group Climate on Intimate Partner Violence Among Married Male U.S. Army Soldiers*

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*This study examined the combined impact of individual-level and group-level variables on self-reported intimate partner violence, operationally defined as mild to severe physical aggression on the Modified Conflict Tactics Scale, among married male U.S. Army soldiers. The sample comprised 713 servicemen from 27 companies stationed at an Army post in the Alaskan interior. Group-level variables were based on individual reports on various dimensions of group climate aggregated at the company level. Contextual analyses were conducted using a variety of regression approaches. Individual-level predictor variables significantly associated with intimate partner violence included race, symptoms of depression, poor marital adjustment, alcohol problems, and a history of childhood abuse. Group-level predictor variables significantly associated with intimate partner violence included lower leadership support (vertical cohesion), a culture of hyper-masculinity (operationally defined as increased group disrespect), and lower support for spouses.*

**Keywords:** *group climate; intimate partner violence; peer group; U.S. Army soldiers*

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*Research aimed at understanding intimate partner violence (IPV) has examined possible causal factors at various levels, including*

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AUTHORS' NOTE: The views expressed in this article are those of the authors and do not purport to reflect the position of the U.S. Department of the Army, the U.S. Department of Defense, or the U.S. Department of Justice.

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individual, dyadic, institutional, and societal (Crowell & Burgess, 1996). Individual-level influences include biopsychosocial factors, such as biochemistry (George et al., 2000), personality characteristics (Hastings & Hamberger, 1988), cognitive processes (Eckhardt, Barbour, & Davison, 1998), and social skills (Holtzworth-Munroe & Anglin, 1991). Dyadic factors are those that focus on features of the relationship within which violence occurs, such as patterns of communication and marital distress (Babcock, Waltz, Jacobson, & Gottman, 1993; Berns, Jacobson, & Gottman, 1999; O'Leary, Malone, & Tyree, 1994). Institutional and societal influences are those stemming from formal and informal social groups and from cultural norms and values that teach, encourage, or justify male violence toward women. These influences may be associated with the family of origin (Fitch & Papantonio, 1983), peer groups (Schwartz & Nogrady, 1996), and the broader society (Silverman & Williamson, 1997; Smith, 1990).

The influence of cultural norms on abuse of women has received, perhaps, the least attention from researchers, despite the centrality of the issue to certain theories of IPV and some promising early work in the area. Yllö and Straus (1984) conducted group-level analyses at the state level, combining survey data on self-reported wife beating and patriarchal ideology with U.S. census tract data on "structural inequality" based on the economic, political, educational, and legal status of women. They found that wife beating was related to patriarchal ideology, particularly in states where there were high levels of structural inequality between genders. Smith (1990) built on this work at the individual level, showing that women whose partners adhered to a more traditional ideology of familial patriarchy were more likely to report that they had been victimized.

Recently, a promising approach, used primarily in the area of sexual assault, has been to examine the influence of membership in primary groups that subscribe to patriarchal ideologies, such as male sports teams and college fraternities (Crosset, Ptacek, McDonald, & Benedict, 1996; Martin & Hummer, 1993). The most extensive research to date on the relationship of male primary groups to violence against women has been conducted by Schwartz, DeKeseredy, and their colleagues (DeKeseredy, 1988; DeKeseredy, Schwartz, & Alvi, 2000; Schwartz & DeKeseredy, 1997, 2000; Schwartz & Nogrady, 1996). Researchers have noted

that although some studies found evidence of increased sexual aggression on the part of fraternity men, these effects were not always upheld when using more sophisticated mathematical models and especially when controlling for the use of alcohol (Schwartz & Nogrady, 1996).

Schwartz and DeKeseredy (2000) have suggested that it may not be group membership, *per se*, but the content of the interaction between group members that promotes violence toward women. Using a Canadian national representative survey sample, they found that informational peer support for abusive behavior was a strong predictor of male admitted sexual abuse during dating. This informational support provides men with guidance and advice that encourages sexual, physical, and psychological assault on dating partners.

Recently, Godenzi, Schwartz, and DeKeseredy (2001) developed a theoretical framework for understanding the role of male peer support in violence toward women, adopting and adapting the traditional social bond theory of crime and delinquency. The association between adolescents' delinquency and their involvement with delinquent peers has been well established in the literature over the past 80 years (Haynie, 2001). However, Godenzi et al. argued that deviancy is a culturally relative concept and that some behaviors criminologists define as deviant are actually acts of conformity to the norms that are conventional within social groups or communities. For example, they argued, at some universities and colleges, gender inequality *is* the norm, and organizations within these universities may take an active role in legitimating this inequality, helping to develop social bonds that foster and justify woman abuse. They went on to suggest that in such an environment, men who do not engage in the abuse of women are considered deviants whose bond to the dominant patriarchal order is considered weak. Because attachment to the group is a key means of getting and maintaining patriarchal power, the pressure to conform to group behavior in these circumstances is large.

Morris (1996) developed a similar hypothesis about the abuse of women and male bonding in the military primary group. Morris referred to the extensive literature on the significance of military primary group cohesion, a process which is based on peer bonding and is regarded as critical to the effective functioning of a small military unit under stressful conditions, such as combat

(see, for example, Manning, 1994). The bonding process in small military units is similar in many respects to that described in college fraternities and athletic teams, involving loyalty, trust, teamwork, cooperation, and willingness to watch out for the other person.

Morris (1996) went on to provide anecdotal evidence suggesting that military cohesion is associated with a culture of hypermasculinity, which includes the objectification and denigration of women through the consumption of pornography and the pervasive use of sexist language. She suggested that in some military units, bonding tends to occur around stereotypic masculine characteristics, such as dominance, aggressiveness, risk taking, and attitudes that favor sexual violence toward women and that reflect distrust, anger, alienation, and resentment toward women. Morris noted that the individual's attitudes toward gender and sexuality are strongly influenced by the primary group, and she claimed, in the case of servicemen, norms reflecting hypermasculinity and adversarial sexual beliefs are imparted to newcomers during the informal acculturation process, even though these norms are not part of formal military training or socialization. This informal process, she argued, includes activities such as consumption of pornography, bragging about sexual activity, and attending strip shows. However, the association proposed by Morris between this type of military culture and violence toward women remains primarily anecdotal (see also Mercier & Mercier, 2000).

#### **THE PRESENT STUDY: A MULTILEVEL ANALYSIS OF IPV**

The present study seeks to expand our understanding of how group influences may have an impact on the perpetration of violence against women, in combination with individual and dyadic factors, focusing on the culture of the military primary group. In an earlier study (Rosen, Moore Parmley, Knudson, & Fancher, 2002), individual-level and dyadic factors were correlated with self-reported intimate partner aggression among U.S. Army soldiers who participated in a survey of family wellness in the summer of 1998. These factors were examined within the framework of a typology that assumes two broad types of IPV (Johnson, 1995). Common couple violence is the less severe, more common

form of IPV, associated with perpetration by both men and women (gender symmetry), whereas intimate terrorism is a more severe form, associated primarily with male perpetration. Although the hypothesized causes of common couple violence and intimate terrorism have not been clearly articulated, the former is thought to be associated with marital conflict arising in specific situations, while the latter is thought to be associated with a general motivation to dominate and control the partner.

The earlier study (Rosen et al., 2002) used minor and severe violence as proxies for common couple violence and intimate terrorism, respectively. We predicted that poor marital adjustment would be more strongly correlated with the minor manifestations of partner violence and that depression, alcohol problems, and negative masculinity—characteristics associated with batterers—would be more strongly correlated with the severe pattern, hypothesized to be indicative of intimate terrorism.

The results, based on a multivariate analysis of covariance, generally supported our hypotheses. Specifically, we found that although poor marital adjustment was associated with all forms of IPV, its strongest association was with minor aggression and psychological aggression, while its weakest association was with severe male-perpetrated IPV. Depression showed the opposite pattern, its weakest association being with minor IPV, and alcohol problems were associated primarily with severe male-perpetrated IPV. Race, on the other hand, showed a strong association with minor IPV and had only a modest relationship to severe IPV. Negative masculinity had no main effect and was only associated with severe IPV for White males. Childhood abuse history also had no main effect and was associated only with received aggression for African American males (Rosen et al., 2002).

The present study builds on the previous one by asking whether and how group-level factors contribute to the predicted variance in minor and severe forms of IPV beyond that explained by individual-level and dyadic variables described previously. This study employs a multilevel method of analysis that takes into account the influence of group membership and examines group climate variables both at the level of the individual's perception and at the aggregate level.

## HYPOTHESES

Following the hypothesis of Schwartz and DeKeseredy (2000), the present study proposes that peer support itself does not promote or encourage violence toward women. Rather, it is the content of peer group culture that promotes such violence. This study includes two measures of peer group culture. The first is a negative measure referred to as group disrespect, which includes a group climate characterized by rude, aggressive behavior; consumption of pornography; sexualized discussion; and the encouragement of group drinking behavior. This variable is hypothesized to be a stimulus to violence by creating a general incentive to overtly dominate and exert control over women. The second measure of peer group culture is a positive measure, dealing with support and respect for spouses at the small unit level, an indication of how positively the group views and supports committed relationships with women. This variable is hypothesized to act as a deterrent to violence, creating a general disincentive to be violent, because it promotes respect and the decent treatment of women.

In addition to testing the hypotheses about peer group culture and IPV, the study addresses the question of whether the presence of women in the peer group has an impact on the level of violence toward intimate partners. Traditionally, the military environment has been all male and is still predominantly male. Currently, about 14% of military personnel are women, and many military peer groups include varying proportions of women. The effects of women's presence on military organizational outcomes are still unclear. There is some evidence that a higher proportion of women in the military unit is associated with decreased peer cohesion (peer support) under certain circumstances (Rosen, Bliese, Wright, & Gifford, 1999). We are not hypothesizing in this study that peer group support directly affects IPV. The questions of whether and how women's presence in the peer group affects men's behavior toward intimate partners remain to be answered.

Finally, the study also examines the impact of leadership climate on levels of IPV. Leadership climate at the small unit level has been shown to have far-reaching influences on many aspects of military life, including job performance (Bliese & Halverson, 1996), retention (Moghadam, 1990), levels of sexual harassment (Rosen & Martin, 1997), and the adjustment and well-being of soldiers, their spouses, and their families (Rosen & Durand, 1995;

Rosen, Moghadam, & Vaitkus, 1989). Anecdotal evidence suggests that poor and irresponsible leadership may be implicated in promoting negative views of women that foster violence in the college and sports environment (Sanday, 1996). In the present study, we hypothesize that good leadership at the small unit level deters violence insofar as it creates a positive, supportive environment for spouses and enforces negative sanctions against violent offenders. Thus, we expect to find a strong negative relationship between a measure of leadership support and self-reported IPV.

### DATA COLLECTION

The study comprised a survey of soldiers stationed at an Army post in Alaska referred to as Fort A. The data collection took place in the summer of 1998. Battalion and family life chaplains administered the questionnaires to soldiers in group settings. The purpose of the study was presented to the soldiers as a family wellness study. Soldiers were informed that participation in the study was voluntary and anonymous. The focus of the study was on enlisted men and women. Officers were given the option of participating, and some chose to do so. Their participation was not emphasized because of concerns about assuring participants' anonymity. Some officers, particularly at higher ranks, could be identifiable by their demographic profiles given that there are only a few in any specific unit.

Overall, 1,411 soldiers from 27 companies participated in the study, which comprised 58% of all nondeployed military personnel assigned to Fort A during the study period. On average, about 60% of the personnel from available units were provided with a questionnaire and an opportunity to complete it. Only about 3% of the questionnaires were returned blank, indicating refusals. The study is limited to the data reported by 713 married male soldiers. The number of married men per company ranged from 3 to 72 with a mean of 26 and a median of 20.

Demographic profiles of the study sample were compared with those for Fort A and for the Army as a whole (Defense Manpower Data Center, 1998). Officers, and particularly senior-ranking officers, were underrepresented in the sample. However, the rank profile of enlisted men in the sample was virtually identical to that of Fort A. The study sample was also, on average, 1 year younger



than the Fort A population (26 years vs. 27 years), probably reflecting the underrepresentation of senior officers. The study sample and the Fort A population were highly comparable with regard to marital status profile (66% of men in both groups were married). Regarding race, there was a higher percentage of White men at Fort A compared to the Army as a whole (71% vs. 62%). The study sample had the same percentage of White men as the Army and the same percentage of African American men as the Fort A population (18%), which was slightly lower than the Army average of 23%.

#### MEASURES: THE DEPENDENT VARIABLE

Characteristics of the study variables, including alpha coefficients, are described in Table 1.

The dependent variable, IPV, was measured using the Modified Conflict Tactics Scale (Pan, Neidig, & O'Leary, 1994), developed from Straus's (1979) Conflict Tactics Scale, which asks about the methods that couples use to resolve conflicts, including psychological aggression, minor physical aggression, and severe physical aggression. Psychological aggression comprises behaviors such as refusing to give affection, insulting or swearing at the partner, sulking, threatening to leave the relationship, and doing something to spite the partner. Minor physical aggression includes throwing something at the partner; pushing, shoving, or grabbing; slapping; and restraining the partner. Severe physical aggression includes kicking, biting or punching with a closed fist, choking or strangling, forced sex, beating, threatening with a knife or gun, and using a knife or gun. The frequency of each act is reported on a 5-point scale ranging from *never occurred*, coded as 0, to *occurred six times or more*, coded as 4.

The outcome variable in the study was physical aggression directed toward the intimate partner, which was assessed in two ways: (a) severity of violence (VIOLENCE1) with three categories (no aggression, minor aggression, and severe aggression), coded as 0, 1, and 2, respectively, and (b) average frequency of all physically aggressive acts (VIOLENCE2), obtained by summing the frequency of all aggressive acts reported and dividing by the total number of aggressive acts reported.

**TABLE 1**  
**Descriptive Statistics for Variables Predicting Severity and Frequency of Domestic**  
**Violence Among 713 Married Male U.S. Army Personnel Nested Within 27 Companies**

<i>Variable</i>	<i>Description</i>	<i>n</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Frequency</i>	<i>%</i>	<i>M</i>	<i>σ</i>
VIOLENCE1	Severity of violence	648	0.00	2.00	—	—	—	—
None		—	—	—	443	68.4	—	—
Minor		—	—	—	146	22.5	—	—
Moderate to severe		—	—	—	59	9.1	—	—
VIOLENCE2	Average frequency of violence	650	0.00	4.00	—	—	0.17	0.44
PEER	Peer support	697	1.00	5.00	—	—	3.43	0.77
LEADER	Leader support	703	1.00	5.00	—	—	3.22	0.74
DISRSPT	Group disrespect	713	1.00	5.33	—	—	2.83	0.81
FAMILY	Support for spouse	698	1.00	5.00	—	—	3.41	0.77
PEER_G	Group-level peer support	27	3.20	3.71	—	—	3.40	0.14
LEADER_G	Group-level leader support	27	3.00	3.66	—	—	3.22	0.17
DISRSPT_G	Group-level of group disrespect	27	2.22	3.77	—	—	2.83	0.36
FAMILY_G	Group-level support for spouse	27	2.50	3.75	—	—	3.40	0.21
DEPRESSION	Psychological Distress scale	681	0.00	2.80	—	—	0.62	0.52
NEGMASC	Negative Masculinity scale	675	1.00	5.00	—	—	1.77	0.75
ABUSE	Childhood physical and emotional abuse	670	1.00	5.00	—	—	1.75	0.83
ALCOHOL	Alcohol use	645	0.00	1.00	—	—	0.27	0.17
MARITAL	Marital Adjustment scale	678	0.00	4.00	—	—	2.68	0.78
FEMALE	Proportion of females in workgroup	675	0.00	0.63	—	—	0.15	0.18
RANK		691	—	—	—	—	—	—
Rank1 (reference)	Noncommissioned	—	0.00	1.00	309	44.7	—	—
Rank2	Enlisted	—	0.00	1.00	328	45.8	—	—
Rank3	Officer	—	0.00	1.00	54	7.5	—	—
RACE		695	—	—	—	—	—	—
African American		—	0.00	1.00	143	20.6	—	—
Other		—	0.00	1.00	135	19.4	—	—
Caucasian (reference)		—	0.00	1.00	417	60.0	—	—
AGE	Respondent's age	709	19.00	55.00	—	—	27.73	5.40

## MEASURES: INDEPENDENT VARIABLES

Two groups of independent variables were included in this study: those that measure attributes of individuals and those that describe characteristics of groups.

### Individual Attributes

Individual attributes included marital adjustment, symptoms of depression, negative masculinity, alcohol problems, a history of childhood physical and emotional abuse, and demographic characteristics.

*Marital adjustment.* Marital adjustment was assessed by the 14-item Marital subscale of the Dyadic Adjustment Scale (Spanier, 1976). This scale was previously found to be a significant predictor of IPV in an earlier study of U.S. Army soldiers (Pan et al., 1994). Its alpha coefficient in the present study was .94.

*Symptoms of depression.* Depression was measured using the Center for Epidemiological Studies Depression Scale (Radloff, 1977). This is a 20-item scale that has been widely used in epidemiological research on depression. It has been shown to distinguish significantly between psychiatric inpatients and the general population, and it has demonstrated good internal reliability. The alpha coefficient for the scale in this study was .85.

*Alcohol problems.* Alcohol problems were assessed using the 13-item Short Michigan Alcoholism Screening Test (Selzer, Vinokur, & Van Rooijen, 1975). This scale has excellent known group validity, being able to correctly classify respondents as alcoholic or nonalcoholic. The alpha coefficient in this study was .71.

*Negative masculinity.* The Negative Masculinity Scale, derived from the Extended Personal Attributes Questionnaire (EPAQ) (Spence, Helmreich, & Holohan, 1979), served as our measure of antisocial and narcissistic traits. It has been described as similar to a measure of narcissism that was found to predict recidivism following treatment for spouse abuse (Hamberger & Hastings, 1990). Items comprise self-ascribed personality characteristics,

such as self-centeredness, lack of empathy, vengefulness, mistrust of others, greed, and aggression. The scale used in this study was derived from a factor analysis of the EPAQ in an Army population and contains nine items (Rosen, Weber, & Martin, 2000).

*Demographic variables.* Demographic variables included in the study were race, rank, and age. Age was examined as a continuous variable. Rank was made up of three categories: 1 = junior enlisted, 2 = noncommissioned officers, and 3 = officers. Race was dummy coded as 1 = White, 2 = African American, and 3 = other.

### **Group Characteristics**

Variables measuring the characteristics of groups included three measures of peer group climate (peer support, group disrespect, and support for spouses), one measure of supportive leadership, and the percentage of women in the work group.

*Peer support.* Peer support was measured by the Walter Reed Army Institute for Research (WRAIR) Horizontal Cohesion Scale (Griffith, 1988; Marlowe, 1986), a five-item scale measuring peer bonding among soldiers at the small unit (company or platoon) level. Items reflect off-duty associations, friendships, and social support.

*Group disrespect.* Group Disrespect is a scale measuring the degree to which a group climate is characterized by rude, aggressive behavior; conversation that degrades women; consumption of pornography; sexualized discussions; and the encouragement of group drinking behavior. Items for this scale originated from unpublished data collected during the pilot phase of a study of sexual harassment in the Army (Secretary of the Army, 1997).

*Support for spouses.* Support for Spouses is a four-item scale that measures the extent to which group culture recognizes and provides for the needs of spouses. Two of the scale items, respect for spouses and the importance of family life, were adapted from the Army-Family Interface Scale (Rosen & Durand, 2000; Rosen et al., 1989). Two other items dealing with attitude toward fidelity and IPV were included specifically for this study.

*Leadership support.* Leadership support was measured by the WRAIR Vertical Cohesion Scale (Griffith, 1988; Marlowe, 1986). The nine items address the bonding between soldiers and their leaders at the small unit level and soldiers' confidence in their chain of command.

The WRAIR scales were developed in the mid-1980s for a longitudinal study that evaluated a new system of assigning and stabilizing soldiers known as the Unit Manning System (Griffith, 1988; Marlowe, 1986). In that study, horizontal cohesion was found to be higher, as expected, in units where there was personnel stabilization (Vaitkus & Griffith, 1990). However, vertical cohesion was found to have a significant impact on horizontal cohesion over time. These two variables tend to be highly correlated with each other and with soldiers' psychological well-being. Vertical cohesion has been one of the most significant predictors of soldiers' well-being in studies of operational stress (Bliese & Halverson, 1996; Halverson, Bliese, Moore, & Castro, 1995).

## ANALYSIS

Two dependent variables were examined in the analysis. These were a measure of the severity of IPV (VIOLENCE1, defined as none, minor, or severe IPV acts) and a measure of the average rate of IPV (VIOLENCE2, defined as the average frequency of self-reported IPV acts in the past year). Determining the appropriate modeling procedures for these outcomes requires examining their distributions.

The first outcome variable, severity of IPV (VIOLENCE1), is an ordinal variable consisting of three categories (no violence, minor violence, and moderate to severe violence). Assuming an underlying continuous response, we analyzed this outcome using the proportional odds ordinal logistic regression model. Ordinal logistic regression was preferred because it explicitly takes into account the ordered nature of the dependent variable and thus takes full advantage of all the information available in the outcome (Hosmer & Lemeshow, 2000; Long, 1997).

To obtain further insight into the relationships among the categories of the outcome and regressors, multinomial logistic regression was employed as well (see Long, 1997). For example, it may be that certain independent variables are associated with

increases in the odds of minor violence but not moderate to severe violence. Multinomial logistic regression is useful for examining these relationships.

For the second violence variable, mean rate of IPV (VIOLENCE2), the distribution was characterized by a preponderance of zeros (nearly 70% of respondents reported no violent acts) and small values and was not normally distributed. Being semicontinuous, the standard linear regression model might suffice if the mean outcome is large (Cameron & Trivedi, 1998), but when it is small (only 0.17 in our case), application of the linear model can produce biased, inefficient, and inconsistent estimates (Long, 1997). Two common strategies for dealing with this problem are to transform the dependent variable to approximate normality and proceed with linear regression or to combine all outcomes greater than zero into a single category and employ binary logistic regression. Mathematical transformations of these data, however, did not yield an approximately normal distribution, and dichotomizing the dependent variable for use with binary logistic regression is undesirable because it results in a loss of efficiency (Cameron & Trivedi, 1998). Therefore, we employed Poisson regression, which is appropriate for analysis of outcomes with many zeros and large positive skew (Cameron & Trivedi, 1998; Long, 1997).

An additional consideration for the analysis is the nested structure of the data. Because the Army personnel data consist of individuals nested within 27 companies, the data are clustered, and using the standard Poisson and logistic regression models assuming independence of observations may lead to errors in inference. To address this problem, we obtained robust variance estimates using the Huber-White sandwich estimator (see, for example, Hardin & Hilbe, 2001), which adjusts for the dependence resulting from the clustering of the data. This affects the estimated standard errors but not the estimated coefficients. All models were estimated with Stata (Version 7) (StataCorp, 2001).

## RESULTS

Of the men in the sample, 45% were junior enlisted, 47% were noncommissioned officers, and 8% were officers. The average age was 28 (plus or minus 5.4 years). Less than 30% did not have at

least some college education; 60.0% were White, 20.6% African American, 6.3% White Hispanic, 2.7% Black Hispanic, 1.2% Asian, 3.0% multiracial, and 6.2% other.

Table 2 presents the results of three regression models. Model 1 shows the results for the ordered logistic regression,<sup>1</sup> Model 2 the results for the multinomial logistic regression, and Model 3 the Poisson regression results.<sup>2</sup> Values in the columns labeled  $e^b$  and  $e^{bsx}$  are odds ratios (ORs) and x-standardized ORs, respectively. These semistandardized estimates are useful for assessing the relative importance of regressors within an equation (see Pampel, 2000), although one cannot generalize these results beyond the present sample.<sup>3</sup> Statistical significance at the .05 level and lower is indicated in the first column of each model by two asterisks, followed by the specific  $p$  value. Variables significant at or near the .10 level are indicated by a single asterisk. As displayed at the bottom of the table, the likelihood ratio goodness-of-fit test statistics indicate all models fit better than a naive or constants-only model, and the pseudo  $R^2$  values indicate the models explain moderate amounts of the variance in the dependent variables. McFadden's pseudo  $R^2$ , for example, while mimicking linear regression's  $R^2$ , tends to be much lower in magnitude, and values between .20 and .40 are considered to be very good (Steinberg & Colla, 1991).

Whether measured at the individual (PEER) or group level (PEER\_G), there was little evidence that peer support among soldiers is related to either the severity (Model 1) or mean frequency of IPV offending (Model 3). Model 2, however, suggests that increases in individual-level peer support were associated with substantial decreases in the odds of moderate to severe violence ( $OR = 0.48, p = .005$ ) relative to minor violence. It is also interesting to note that although significant only at the .10 level, increases in individual-level peer bonding were associated with increases in the odds of minor violence ( $OR = 1.36, p = .070$ ) relative to no violence.

Bonding between soldiers and their leaders, or vertical cohesion, although not statistically significant at the individual level (LEADER) in any model, was highly significant at the group level (LEADER\_G) in all models. The Poisson regression model suggests that each unit increase in the mean Vertical Cohesion scale was associated with a 156% increase in the mean frequency of IPV,  $(2.56 - 1) \times 100$ . Increases in the mean Vertical Cohesion scale were

**TABLE 2**  
**Ordinal Logistic, Multinomial Logistic, and Poisson Regression Models Predicting**  
**Severity and Mean Frequency of Domestic Violence, Including Group Effects**

Variable	Model 2 (Multinomial Logit)									
	Model 1 (Ordered Logit)		Minor vs. None		Moderate to Severe vs. None		Moderate to Severe vs. Minor		Model 3 (Poisson)	
	e <sup>β</sup>	e <sup>β<sup>SE</sup></sup>	e <sup>β</sup>	e <sup>β<sup>SE</sup></sup>	e <sup>β</sup>	e <sup>β<sup>SE</sup></sup>	e <sup>β</sup>	e <sup>β<sup>SE</sup></sup>	e <sup>β</sup>	e <sup>β<sup>SE</sup></sup>
PEER	1.02	1.02	1.36*.070	1.26	0.66	0.73	0.48**.*005	0.58	1.12	1.08
LEADER	1.08	1.06	1.09	1.06	1.02	1.01	0.93	0.95	0.88	0.91
DISRSPT	1.46**.*008	1.31	1.40**.*083	1.27	1.70**.*025	1.46	1.22	1.15	1.31**.*025	1.23
FAMILY	1.07	1.05	0.99	0.99	1.30	1.22	1.32	1.23	1.13	1.09
PEER_G	1.86	1.09	1.15	1.02	3.51	1.20	3.04	1.17	1.40	1.05
LEADER_G	3.91**.*000	1.27	5.19**.*004	1.33	6.04**.*055	1.37	1.16	1.03	2.56**.*003	1.18
DISRSPT_G	1.47	1.15	1.52	1.17	1.04	1.01	0.68	0.87	2.00**.*001	1.29
FAMILY_G	0.31**.*005	0.78	0.57	0.89	0.10**.*003	0.61	0.18	0.69	0.24**.*000	0.74
DEPRESSION	2.03**.*000	1.45	2.41**.*003	1.59	2.01**.*031	1.45	0.83	0.91	1.69**.*002	1.32
NEGMASC	1.16	1.12	1.01	1.01	1.38	1.27	1.37	1.26	1.13	1.09
ABUSE	1.27**.*022	1.21	1.11	1.09	1.51**.*006	1.39	1.36**.*057	1.28	1.12	1.10
ALCOHOL	1.30	1.04	0.29	0.82	4.61	1.29	15.98**.*002	1.58	0.98	1.00
MARITAL	0.52**.*000	0.61	0.60**.*000	0.67	0.36**.*000	0.45	0.59**.*026	0.67	0.53**.*000	0.61
RANK2	1.30	1.14	1.39	1.18	1.59	1.26	1.15	1.07	1.31	1.15
RANK3	0.69	0.91	0.67	0.90	0.80	0.95	1.19	1.04	1.05	1.01
FEMALE	3.56	1.26	3.07	1.22	4.57	1.31	1.49	1.07	1.65	1.09
BLACK	2.62**.*005	1.46	2.09**.*020	1.34	4.43**.*011	1.80	2.11**.*108	1.34	2.04**.*001	1.33
OTHER	1.43	1.15	1.20	1.07	1.96**.*050	1.31	1.63	1.21	1.45**.*080	1.16
AGE	0.93**.*025	0.67	0.94**.*020	0.73	0.86**.*040	0.46	0.92	0.63	0.94**.*011	0.73
Constant	—		—4.19		—1.54		—		—1.46	

(continued)



TABLE 2 (continued)

Variable	Model 1 (Ordered Logit)		Model 2 (Multinomial Logit)						Model 3 (Poisson)	
			Minor vs. None		Moderate to Severe vs. None		Moderate to Severe vs. Minor			
	$e^{\beta}$	$e^{\beta_{st}}$	$e^{\beta}$	$e^{\beta_{st}}$	$e^{\beta}$	$e^{\beta_{st}}$	$e^{\beta}$	$e^{\beta_{st}}$	$e^{\beta}$	$e^{\beta_{st}}$
Cut 1	2.52	2.30								
Cut 2	4.39	2.30								
LL	-358.58	-346.62							-202.57	
LR	121.31, $p = .0000$				144.43, $p = .0000$				102.42, $p = .0000$	
$R^2$	.15 / .26				.17 / .30				.21 / .30	
Brant test	25.8, $p = .14$								Poisgof: 186.02, $p = 1.0$	

NOTE: See Table 1 for description of variables; standard errors adjusted for clustering;  $e^{\beta}$  = exponentiated coefficient;  $e^{\beta_{st}}$  = x-standardized exponentiated coefficient; LL = log likelihood; LR = likelihood ratio test of full versus naive model;  $R^2$  = McFadden's and Cragg and Uhler's, respectively; Brant test = test of proportional odds assumption; Poisgof = Poisson goodness-of-fit test.

\* $p \leq .10$ . \*\* $p \leq .05$ .

also associated with increases in the severity of IPV, as indicated in the ordered and multinomial logistic models. Specifically, Model 1 suggests that each unit increase in group vertical cohesion was associated with nearly a 300% increase in the odds of minor and moderate to severe violence,  $(3.91 - 1) \times 100$ . Model 2 also suggests that relative to no violence, increases in the mean Vertical Cohesion scale were associated with increases in the odds of minor ( $OR = 5.19, p = .004$ ) and moderate to severe violence, although the latter effect was borderline significant at the .05 level ( $OR = 6.04, p = .055$ ).

Group disrespect, reflecting a culture of hypermasculinity, was associated with increases in the mean frequency of IPV (Model 3) at the individual (DISRSPT) and group levels (DISRPT\_G). Specifically, Model 3 suggests that each unit increase in group disrespect at the individual level (DISRSPT) was associated with a 31% increase in the mean frequency of IPV offending ( $p = .025$ ), while each unit increase in group disrespect measured at the group level (DISRPT\_G) was associated with a 100% increase in offending ( $p = .001$ ). However, group disrespect appeared to be associated with the severity of IPV only at the individual levels in Models 1 and 2. Models 1 and 2 indicate that the mean level of group disrespect (DISRPT\_G) was unrelated to the severity of IPV. Model 1 indicates that relative to no violence, group disrespect measured at the individual level was also significantly associated with increases in the severity of IPV ( $OR = 1.46, p = .008$ ), but Model 2 suggests it may be associated with increases in moderate to severe levels of violence only ( $OR = 1.70, p = .025$ ).

Support for spouses measured at the individual level (FAMILY) was unrelated to IPV in all models. A different picture emerged, however, when this variable was measured at the group level (FAMILY\_G). Here, Model 1 shows increases in FAMILY\_G were associated with a significant reduction in the severity of IPV ( $OR = 0.31, p = .005$ ), while Model 2 suggests the decrease may be specific to moderate to severe violence ( $OR = 0.10, p = .003$ ). Model 3 indicates increases in FAMILY\_G were also associated with decreases in the mean frequency of offending ( $OR = 0.24, p = .000$ ).

Model 1 indicates that depression (DEPRESSION) was significantly associated with increases in the odds of minor and moderate to severe levels of IPV offending ( $OR = 2.03, p = .000$ ). The results in Model 2 are congruent with those in Model 1.

Specifically, Model 2 shows depression increased the odds of both minor ( $OR = 2.41, p = .003$ ) and moderate to severe IPV ( $OR = 2.01, p = .031$ ) over no violence. Model 3 suggests further that depression was associated with increases in the mean frequency of offending ( $OR = 1.69, p = .002$ ).

Although Model 1 suggests that childhood physical and emotional abuse (ABUSE) was significantly associated with increases in the odds of both minor and moderate to severe IPV ( $OR = 1.27, p = .022$ ), Model 2 indicates this relationship may be limited to more severe forms of abuse only ( $OR = 1.51, p = .006$ ). However, as indicated in Model 3, childhood abuse does not appear to increase the mean frequency of IPV offending ( $OR = 1.12, p = .146$ ).

Alcohol problems (ALCOHOL) was not significantly related to the severity of IPV in Model 1 ( $OR = 1.30, p = .721$ ). Model 2, however, suggests that alcohol problems was associated with an increase in the odds of moderate to severe violence relative to minor violence ( $OR = 15.98, p = .002$ ) but not to increases in the odds of either minor or moderate to severe violence relative to no violence. Alcohol problems was also unrelated to the mean frequency of IPV offending, as shown in Model 3 ( $OR = 0.98, p = .972$ ).

Higher scores on the Marital Adjustment (MARITAL) scale were associated with decreases in both the severity and incidence of IPV. Specifically, Model 1 suggests MARITAL was associated with a reduction in both the odds of minor and moderate to severe violence ( $OR = 0.52, p = .000$ ). Model 2 is congruent with these results in that MARITAL was associated with reductions in the odds of both minor ( $OR = 0.60, p = .000$ ) and moderate to severe IPV ( $OR = 0.36, p = .000$ ) relative to no violence. Furthermore, the results for Model 2 indicate increases in the Marital Adjustment scale were associated with a reduction in the odds of moderate to severe versus minor violence ( $OR = 0.59, p = .026$ ). Model 3 also suggests each unit increase in the Marital Adjustment scale is associated with a 47% reduction in the mean frequency of IPV offending ( $OR = 0.53, p = .000$ ).

Race appeared to be associated with the severity and frequency of IPV. Compared to Whites, being African American (BLACK) was associated with increases in the odds of minor and moderate to severe offending in Model 1 ( $OR = 2.62, p = .005$ ), with both minor ( $OR = 2.09, p = .020$ ) and moderate to severe ( $OR = 4.43, p =$

.011) violence relative to no violence in Model 2, and with the mean frequency of violence in Model 3 ( $OR = 2.04, p = .001$ ). Other (OTHER) race was significant only in Model 2 for the moderate to severe versus no violence contrast ( $OR = 1.96, p = 0.05$ ).

Increases in age (AGE) was inversely related to the odds of minor and moderate to severe IPV in Model 1 ( $OR = 0.93, p = .025$ ), with minor ( $OR = 0.94, p = .020$ ) and moderate to severe ( $OR = 0.86, p = .040$ ) IPV relative to no violence in Model 2, and with the mean frequency of IPV in Model 3 ( $OR = 0.96, p = .003$ ).

As noted earlier, the semistandardized estimates listed in the second column of each model are useful for assessing the relative importance of the regressors. After adjusting the standardized estimates so that all values are expressed in increases in odds (not shown),<sup>4</sup> Model 1 indicates that the regressors exhibiting the strongest associations with severity of violence were MARITAL ( $OR = 1.64$ ), AGE ( $OR = 1.49$ ), BLACK ( $OR = 1.46$ ), DEPRESSION ( $OR = 1.45$ ), and FAMILY\_G ( $OR = 1.35$ ). A similar ordering was observed for mean frequency of offending in Model 3, with MARITAL ( $OR = 1.64$ ) and AGE ( $OR = 1.37$ ) exhibiting the strongest relationships, followed closely by FAMILY\_G ( $OR = 1.35$ ), BLACK ( $OR = 1.33$ ), and DEPRESSION ( $OR = 1.32$ ). Variables statistically unrelated to IPV in all models were negative masculinity (NEGMASC), military rank (RANK), and the proportion of female coworkers in the work group (FEMALE).

## DISCUSSION

The study attempted to add a new layer to our understanding of factors that contribute to male-perpetrated IPV. Building on our already existing knowledge of individual-level predictors of IPV, this study examined the additional contribution of group-level factors, specifically, factors associated with the cultural environment of the small military primary group, the Army company.

The approach used in the present study was substantially different from the one used previously, which examined correlates of both inflicted and received physical and psychological aggression and the interaction effects of race with other correlates of different types of intimate partner aggression in relation to these outcomes (Rosen et al., 2002). Despite using different measures and a different statistical approach and posing different research questions,

this group-level analysis did not substantially change the results of the previous individual-level analysis.

There were some exceptions. First, a history of childhood abuse emerged as a more significant correlate of IPV in the present analysis. Second, depression was not associated with the most severe manifestation of IPV in the present analysis as compared with the earlier analysis. Third, race was associated with both minor and severe IPV in the present analysis compared with the earlier analysis in which it was primarily associated with minor IPV. It should be noted, however, that in the earlier analysis, race was associated with severe *received* IPV, a finding that we suggested could be viewed in the context of the literature showing that African American women may be more confrontational than White women when dealing with abusive partners (Wagner, Mongan, Hamrick, & Hendrick, 1995).

With regard to group influences, the study distinguished between aggregate and individual perception of group climate. The study found in the multinomial logit model that none of the aggregate variables were able to distinguish between moderate to severe and minor IPV. Furthermore, moderate to severe IPV was associated with lower individual perceptions of peer support, which would tend to suggest that the more severely violent perpetrators are loners who perceive themselves to have little involvement with their peers and who are not influenced by group factors. The most significant factor associated with IPV in this moderate to severe group was alcohol. By contrast, individuals who perpetrated minor IPV were distinguished from those who did not perpetrate IPV by having higher perceptions of peer support, although this only reached the  $p = .07$  level of significance. These results support the argument that there is a qualitative difference between minor and moderate to severe IPV and that these different types of violence may have different and even opposite causes. Perpetration of minor IPV may be associated with the perception that one is conforming to peer group standards, whereas perpetration of moderate to severe IPV appears to be associated with feeling detached from the peer group.

Group disrespect was the only variable to be associated with IPV both at the group and individual levels. In the Poisson model, both individual perceptions of group disrespect and aggregate perceptions were significant. In the ordinal model and in two of

the contrasts in the multinomial model, only individual-level group disrespect was significant. This finding supports Morris's (1996) hypothesis and demonstrates that a climate of hyper-masculinity, operationally defined by the Group Disrespect scale, is associated with increased IPV. This influence appears to operate mainly through how the individual perceives his environment rather than the environment itself. However, the Poisson model demonstrates that in the case of the frequency of violent acts, the actual environment also has an effect. The frequency of violent acts (as opposed to severity) may indicate efforts to demonstrate conformity to group norms.

Group-level leadership support and group-level support for spouses were both associated with decreased levels of IPV in the ordinal logit model and in the Poisson model. In the multinomial model, support for spouses distinguished moderate to severe IPV from no IPV, and leader support distinguished minor IPV from no IPV and moderate to severe IPV from no IPV. Leadership support was hypothesized to act as a deterrent to IPV, whereas support for spouses was hypothesized to promote a positive value on the decent treatment of women and thus act as a disincentive to be violent. If the hypotheses are correct, the results would suggest that although both climate variables are effective in reducing the incidence of IPV, deterrence has a greater impact on minor IPV, whereas positive values have a greater impact on reducing more severe forms of IPV.

The study may also help to develop the theory behind typologies of IPV, such as that suggested by Johnson (1995), taking them out of purely individual and dyadic contexts and placing them in a social context. The study has shown, for example, that social influences operate to increase or reduce mostly minor IPV. At the most severe levels, social influences seem to have the least impact. However, it was only at the moderate to severe level that alcohol was found to be a factor.

## LIMITATIONS

The design of this study had both advantages and disadvantages. The major disadvantage was that our measure of IPV was based on self-reports, which are likely to result in underreporting. Another disadvantage is that this study was conducted at only

one Army post, and thus, caution must be exercised in generalizing from these results to other Army or military bases. Base cultures may vary depending on leadership, the mission, and the culture of surrounding communities. Further research would be necessary to determine whether the relationships between key variables found in this study can be replicated at other locations.

One of the advantages of the study is that the group-level results cannot be attributed to self-selection bias. Although military personnel self-select into the military and into a specific military occupation, and may even choose where they get assigned, they do not get to choose their particular company. This is good news for the military with regard to primary prevention of IPV because the company-level group climate can be influenced by the company commander and chain of command.

The military has enormous control over the behavior of its members, both directly, through control of the work environment, and indirectly, through the influence on the climate of human interactions that extend beyond work to the domains of family and leisure. Commanders have the formal authority to discipline service members and have the option of applying judicial or nonjudicial punishments for offenses that occur outside the immediate work environment, including violence in the home. The military's influence also extends to support services to family members. In addition to providing a wide variety of formal resources and support services to family members, including health care, housing, shopping facilities, and recreational facilities, the military also provides informal resources, for example, through family support groups that take on great importance during deployments as a source of information and emotional support. The quality of family support groups and the more general responsiveness of the chain of command to family concerns are determined to a large degree by the company commander. Studies have shown that a positive command environment for families boosts morale and readiness and increases retention. These latest findings now suggest that command climate may additionally be associated with reduced levels of IPV.

This has important implications with regard to prevention and intervention. For example, changes in group climate at the



company level, improvements in the quality of leadership and in the environment for families, and a reduction of group disrespect may help to reduce mostly minor IPV. This is important because most acts of IPV fall into the minor category. These findings suggest possible new prevention strategies for domestic violence that do not make domestic violence prevention and treatment the sole responsibility of professional counselors and service providers but that focus more on commanders and noncommissioned officers at all levels. In particular, the findings support a recommendation that domestic violence training for commanders should include how to foster a climate that actually reduces domestic violence and thus the need for intervention.

## NOTES

1. The ordered logistic regression model estimated here assumes coefficients are equal across categories of the outcome variable, what is often called the proportional odds assumption (see Long, 1997, pp. 140-145, for a discussion). We tested this assumption using the omnibus Brant test (Brant, 1990), shown at the bottom of Table 2. The test is not statistically significant ( $\chi^2 = 25.76, p = .137$ ), suggesting that the coefficients are equal across categories. But Brant tests of individual regressors indicate that two violate the proportional odds assumption: PEER ( $\chi^2 = 7.32, p = .007$ ) and ALCOHOL ( $\chi^2 = 6.45, p = .011$ ). Thus, the results for these variables must be interpreted with caution in this model.

2. One restrictive property of the Poisson model is the assumption of equidispersion (the mean and the variance are equal). In practice, data are frequently overdispersed (i.e., the variance is greater than the mean). Overdispersion can arise because of unobserved heterogeneity that is not adequately captured by covariates or because of positive contagion (e.g., an assault increases the probability of a future assault), although in cross-sectional data it is practically impossible to determine the source of overdispersion (Cameron & Trivedi, 1998). In this data set, the unconditional variance of the mean frequency of violence is larger than the unconditional mean (.192 and .168, respectively). The data also exhibit more zeros than predicted by a Poisson with a mean of .168. Under Poisson assumptions, we would expect  $(716)e^{-.168} = 605$  zeros in the data. The observed frequency of 716 (18% greater than expected) suggests the Poisson may not be the optimal distribution for the assault data. However, we retain the Poisson results for two reasons. First, the Poisson  $\chi^2$  goodness-of-fit test shown in the bottom of Table 2 (labeled *Poisgof*) indicates the multivariate Poisson regression model fits the data well. Second, a negative binomial regression model (not shown) provides no improvement in fit over the Poisson.

3. The semistandardized odds ratios are calculated by multiplying the estimated coefficients by their standard deviations and then exponentiating. The results can then be interpreted as the change in the odds due to a one standard deviation change in the independent variable.

4. This is necessary because the odds are not symmetrical about zero; one simply reverses the sign of the standardized log odds that show decreases prior to exponentiating.



## REFERENCES

- Babcock, J. C., Waltz, J., Jacobson, N. S., & Gottman, J. M. (1993). Power and violence: The relation between communication patterns, power discrepancies, and domestic violence. *Journal of Consulting and Clinical Psychology, 61*, 40-50.
- Berns, S. B., Jacobson, N. S., & Gottman, J. M. (1999). Demand-withdraw interaction in couples with a violent husband. *Journal of Consulting and Clinical Psychology, 67*, 666-674.
- Bliese, P. D., & Halverson, R. R. (1996). Individual and nomothetic models of job stress: An examination of work hours, cohesion, and well-being. *Journal of Applied Social Psychology, 26*, 1171-1189.
- Brant, R. (1990). Assessing proportionality in the proportional odds model for ordinal logistic regression. *Biometrics, 46*, 1711-1718.
- Cameron, A. C., & Trivedi, P. K. (1998). *Regression analysis of count data*. Cambridge, UK: Cambridge University Press.
- Crosset, T. W., Ptacek, J., McDonald, M. A., & Benedict, J. R. (1996). Male student-athletes and violence against women: A survey of campus judicial affairs offices. *Violence Against Women, 2*, 163-179.
- Crowell, N. A., & Burgess, A. W. (Eds.). (1996). *Understanding violence against women*. Washington, DC: National Academy Press.
- Defense Manpower Data Center. (1998). *Report 3035EO*. Alexandria, VA: Author.
- DeKeseredy, W. S. (1988). *Woman abuse in dating relationships: The role of male peer support*. Toronto, Canada: Canadian Scholars' Press.
- DeKeseredy, W. S., Schwartz, M. D., & Alvi, S. (2000). The role of pro-feminist men in dealing with woman abuse on the Canadian campus. *Violence Against Women, 6*, 918-935.
- Eckhardt, C. I., Barbour, K. A., & Davison, G. C. (1998). Articulated thoughts of maritally violent and nonviolent men during anger arousal. *Journal of Consulting and Clinical Psychology, 66*, 259-269.
- Fitch, F. J., & Papantonio, A. (1983). Men who batter: Some pertinent characteristics. *Journal of Nervous and Mental Disease, 171*(3), 190-192.
- George, D. T., Hibbeln, G. D. T., Ragan, P. W., Utau, J. C., Phillips, M. J., Doty, L., et al. (2000). Lactate-induced rape and panic in a select group of subjects who perpetrate acts of domestic violence. *Biological Psychiatry, 47*, 804-812.
- Godenzi, A., Schwartz, M. D., & DeKeseredy, W. S. (2001). Toward a social bond/male peer support theory of woman abuse in North American college dating. *Critical Criminology, 10*, 1-16.
- Griffith, J. (1988). Measurement of group cohesion in U.S. Army units. *Basic and Applied Social Psychology, 9*, 149-171.
- Halverson, R. R., Bliese, P. D., Moore, R. M., & Castro, C. A. (1995). Psychological well-being and physical health symptoms of soldiers deployed for Operation Uphold Democracy: A summary of human dimensions research in Haiti. Washington, DC: Walter Reed Army Institute of Research.
- Hamberger, L. K., & Hastings, J. E. (1990). Recidivism following spouse abuse abatement counseling: Treatment program implications. *Violence and Victims, 5*, 157-170.
- Hardin, J., & Hilbe, J. (2001). *Generalized linear models and extensions*. College Station, TX: Stata Press.
- Hastings, J. E., & Hamberger, L. K. (1988). Personality characteristics of spouse abusers: A controlled comparison. *Violence and Victims, 1*, 31-48.
- Haynie, D. L. (2001). Delinquent peers revisited: Does network structure matter? *American Journal of Sociology, 106*, 1013-1057.

- Holtzworth-Munroe, A., & Anglin, K. (1991). The competency of responses given by maritally violent versus nonviolent men to problematic marital situations. *Violence and Victims, 6*, 257-269.
- Hosmer, D., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.) New York: John Wiley.
- Johnson, M. P. (1995). Patriarchal terrorism and common couple violence: Two forms of violence against women. *Journal of Marriage and the Family, 75*, 283-294.
- Long, S. J. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage.
- Manning, F. J. (1994). Morale and cohesion in military psychiatry. In F. D. Jones, L. R. Sparacino, V. L. Wilcox, & J. M. Rothberg (Eds.), *Textbook of military medicine, Part I: Military psychiatry: Preparing in peace for war* (pp. 2-18). Falls Church, VA: U.S. Department of the Army, Office of the Surgeon General.
- Marlowe, D. H. (1986). *New manning system field evaluation* (Technical Report No. 1). Washington, DC: Walter Reed Army Institute of Research.
- Martin, P. Y., & Hummer, R. A. (1993). Fraternities and rape on campus. In P. B. Bart & E. G. Moran (Eds.), *Violence against women: The bloody footprints* (pp. 114-131). Newbury Park, CA: Sage.
- Mercier, P., & Mercier, J. (2000). *Battle cries on the homefront: Violence in the military family*. Springfield, IL: Charles C Thomas.
- Moghadam, L. Z. (1990). *The reciprocal nature of work and family: Perceptions of the work/family interface and its impact on Army reenlistment behavior*. Unpublished doctoral dissertation, University of Maryland, College Park.
- Morris, M. (1996). By force of arms: Rape, war, and military culture. *Duke Law Journal, 45*, 651-781.
- O'Leary, K. D., Malone, J., & Tyree, A. (1994). Physical aggression in early marriage: Prerelationship and relationship effects. *Journal of Consulting and Clinical Psychology, 62*, 594-602.
- Pampel, F. C. (2000). *Logistic regression: A primer* [Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-132]. Thousand Oaks, CA: Sage.
- Pan, H. S., Neidig, P. H., & O'Leary, K. D. (1994). Predicting mild husband-to-wife physical aggression. *Journal of Consulting and Clinical Psychology, 62*, 975-981.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-400.
- Rosen, L. N., & Durand, D. B. (1995). The family factor and retention among married soldiers deployed to Operation Desert Storm. *Military Psychology, 7*, 221-234.
- Rosen, L. N., & Durand, D. B. (2000). Coping with the unique demands of military life. In J. A. Martin, L. N. Rosen, & L. R. Sparacino (Eds.), *The military family: A practice guide for human service providers* (pp. 55-72). Westport, CT: Praeger.
- Rosen, L. N., & Martin, L. (1997). Sexual harassment, cohesion, and combat readiness in support U.S. Army units. *Armed Forces & Society, 24*, 221-244.
- Rosen, L. N., Moghadam, L. Z., & Vaitkus, M. A. (1989). The military family's influence on soldiers' personal morale. *Military Psychology, 1*, 201-213.
- Rosen, L. N., Moore Parmley, A., Knudson, K. H., & Fancher, P. (2002). Intimate partner violence among married male U.S. Army soldiers: Ethnicity as a factor in self-reported perpetration and victimization. *Violence and Victims, 17*, 607-622.
- Rosen, L. N., Weber, J. P., & Martin, L. (2000). Gender-related personal attributes and psychological adjustment among U.S. Army soldiers. *Military Medicine, 165*, 54-59.
- Sanday, P. R. (1996). Rape-prone versus rape-free campus cultures. *Violence Against Women, 2*, 191-208.
- Schwartz, M. D., & DeKeseredy, W. S. (1997). *Sexual assault on the college campus: The role of male peer support*. Thousand Oaks, CA: Sage.

- Schwartz, M. D., & DeKeseredy, W. S. (2000). Aggregation bias and woman abuse: Variations by male peer support, region, language, and school type. *Journal of Interpersonal Violence, 15*, 555-565.
- Schwartz, M. D., & Nogrady, C. A. (1996). Fraternity membership, rape myths, and sexual aggression on a college campus. *Violence Against Women, 2*, 148-162.
- Secretary of the Army. (1997). *Senior review panel report on sexual harassment, Vol. 1*. Arlington, VA: Department of the Army.
- Selzer, M. L., Vinokur, A., & Van Rooijen, L. (1975). A self-administered Short Michigan Alcoholism Screening Test. *Journal of Studies on Alcohol, 36*, 117-126.
- Silverman, J. G., & Williamson, G. M. (1997). Social ecology and entitlements involved in battering by heterosexual college males: Contributions of families and peers. *Violence and Victims, 12*, 147-165.
- Smith, M. D. (1990). Patriarchal ideology and wife beating: A test of a feminist hypothesis. *Violence and Victims, 4*, 257-273.
- Spanier, G. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38*, 15-30.
- Spence, J. T., Helmreich, R. L., & Holohan, C. K. (1979). Negative and positive components of psychological masculinity and femininity and their relationship to self-reports of neurotic and acting out behavior. *Journal of Personality and Social Psychology, 37*, 1673-1682.
- StataCorp. (2001). *Stata Statistical Software (Version 7.0)* [Computer software]. College Station, TX: Author.
- Steinberg, D., & Colla, P. (1991). *LOGIT: A supplementary module for SYSTAT*. Evanston, IL: SYSTAT, Inc.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family, 41*, 75-88.
- Vaitkus, M. A., & Griffith, J. (1990). An evaluation of unit replacement on unit cohesion and individual morale in the U.S. Army all-volunteer force. *Military Psychology, 2*, 221-239.
- Wagner, P. J., Mongan, P., Hamrick, D., & Hendrick, L. K. (1995). Experience of abuse in primary care patients: Racial and rural differences. *Archives of Family Medicine, 4*, 956-962.
- Yllö, K., & Straus, M. A. (1984). The status of women, marital equality, and violence against wives: A contextual analysis. *Journal of Family Issues, 5*, 307-320.

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