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Abstract

Data on 7,424 soldier spouse abuse offenders were analyzed to determine the prevalence of substance use during abusive incidents, and to examine differences between substance-using and non-substance-using offenders. Results showed that 25% of all offenders used substances during abusive incidents, with males and non-Hispanic Whites being more likely to have used substances. Substance-using offenders were more likely to perpetrate physical spouse abuse and more severe spouse abuse. These findings underscore the importance of educating military personnel (including commanders) about links between substance use and domestic violence, and of coordinating preventive and therapeutic substance abuse and violence-related interventions.

Keywords

alcohol, Army, drugs, intimate partner violence, soldier, spouse abuse, substance use, violence

Intimate partner violence, including spouse abuse, is now recognized as an important and prevalent public health problem that affects many families (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002; Tjaden & Thoennes, 2000), including military families (Bohannon, Dosser, & Lindley, 1995; Marshall, Panuzio, & Taft, 2005; Martin et al., 2007; McCarroll et al., 1999;

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Pan, Neidig, & O'Leary, 1994; Rentz et al., 2006; Rosen, Kaminski, Parmley, Knudson, & Fancher, 2003; Rosen, Knudson, et al., 2002; Rosen, Parmley, Knudson, & Fancher, 2002a, 2002b). Not only does spouse abuse occur in military families, but research suggests that there is a higher prevalence of severe spouse abuse perpetration by active-duty males in the military compared to civilian males. For example, research by Heyman and Neidig (1999) found that, after controlling for age and race, 2.5% of the Army husbands they studied perpetrated severe aggression against their wives compared to 0.7% of a comparison group of civilian husbands.

Although research examining intimate partner violence within military families is growing, relatively little attention has focused on the role that substance use by the violent offender may play in such abuse. Limited research on the links between substance use and violence in the military is of concern because, even though illicit drug use by the military is relatively rare compared to such use by civilians, alcohol use (including heavy alcohol use) is much more common. For example, Bray and colleagues (Bray, Marsden, & Peterson, 1991) found that illicit drugs were used by only 8.6% of males in the military compared to 25% of civilian males; however, 84.6% of males in the military drank alcohol (with 22.3% drinking heavily), whereas only 77.8% of civilian males drank alcohol (with 11.8% drinking heavily).

Fortunately, the research that does exist concerning substance use and intimate partner violence perpetration in families of active-duty military personnel is beginning to offer insight into this problem, with this research being set within various branches of the military (Marshall et al., 2005). For example, a study of male U.S. Army soldiers found that heavy alcohol drinkers were 66% more likely than nondrinkers to be spouse abusers, and that there was an exposure–response relationship between the amount of alcohol consumed and the likelihood that the soldier had been drinking during a spouse abuse incident (Bell, Harford, McCarroll, & Senier, 2004). A survey of 713 soldiers stationed at an Army post in Alaska found that alcohol problems were significantly associated with moderate to severe intimate partner violence (Rosen et al., 2003), and a survey of Army soldiers in intimate relationships (married or cohabiting) who were preparing for deployment while in Texas found that 32% of soldiers who perpetrated partner violence engaged in risky alcohol behaviors compared to 9% of all soldiers (Fonseca et al., 2006). A study of Army soldiers in a batterer treatment program found that they were significantly more likely than other soldiers to evidence problem drinking behaviors (Hurlbert, Whittaker, & Munoz, 1991). Research with active-duty Navy trainees found that, among both males and females, alcohol problems were positively associated with the perpetration of intimate partner physical violence (Merrill, Hervig, & Milner, 1996), and research with Air Force servicemen and servicewomen found that those with a history of alcohol problems perpetrated more severe intimate partner violence than those without a history of such problems (Brewster, Milner, Mollerstrom, Saha, & Harris, 2002; Rosen, Parmley et al., 2002b).

Studies of military veterans also have found links between substance use or abuse and intimate partner violence perpetration. Studies of Vietnam veterans have demonstrated positive associations between alcohol abuse/dependence and perpetration of intimate partner violence; moreover, an exposure–response relationship has been noted in that more

frequent and heavy alcohol consumption has been positively correlated with a greater likelihood of intimate partner violence perpetration (Savarese, Suvak, King, & King, 2001; Taft et al., 2005). Clinical studies of veterans also have noted frequent co-occurrence of substance abuse problems and intimate partner violence. For example, 39% of male veterans in an inpatient alcohol treatment program reported assaulting their wives or partners at least once during the past year (Gondolf & Foster, 1991), and 45% of male batterers receiving care within a VA health care facility evidenced a current substance abuse disorder (Gerlock, 1999).

This past research regarding substance use and intimate partner violence within military families has enhanced our knowledge on this important topic. However, because there have been relatively few studies in this area, additional research on this topic is needed so that professionals who develop and implement preventive and therapeutic interventions for military spouse abuse perpetrators, including those with substance problems, have an empirical base from which to do their work.

This study extends past research on spouse abuse perpetration and substance use in military families by addressing the following research questions:

1. Among soldiers who are spouse abuse offenders, what is the prevalence of their use of substances during violent incidents, including their use of alcohol and illicit drugs?
2. Among soldiers who are spouse abuse offenders, do those who were using substances at the time of abusive incidents differ from those who were not using substances in terms of their sociodemographic characteristics, including their sex, race/ethnicity, age, military status (enlisted vs. officer), and military pay grade?
3. Do the characteristics of spouse abuse incidents differ by whether or not the soldier offender was using substances at the time of the incident, with these characteristics including whether the offender was also a victim of spouse abuse during the incident, the type of spouse abuse perpetrated (physical abuse only, emotional abuse only, sexual abuse only, or more than one type of abuse), and the severity of abuse perpetrated (severe or moderate vs. mild)?
4. Among soldiers who are spouse abuse offenders, were those using substances at the time of the abusive incident more (or less) likely than those not using substances to have received services from the Army Substance Abuse Program after the abusive event?

Materials and Method

Data Source and Study Sample

Two computerized Army data sources provided information for this investigation. These included the Army Central Registry and the Drug and Alcohol Management Information System.

The Army Central Registry is a confidential electronic information system maintained by the U.S. Army Medical Command, with data provided by the Army's Family Advocacy Program. The Family Advocacy Program is the organization primarily responsible for the prevention, identification, and treatment of all types of family violence among military families, including spouse abuse (Department of the Army, 2007). All cases of spouse abuse involving a soldier that are substantiated by the Family Advocacy Program are entered into the Army Central Registry database.

The analysis data set used in this study included Army Central Registry data from a 5-year period (January 1, 2000 through December 31, 2004). It included all records of spouse abuse incidents that were reviewed by a Case Review Committee of the Family Advocacy Program and were substantiated as abusive based on the preponderance of information. At the time these data were collected, spouse abuse was defined by the U.S. Army as assault, battery, threats to injure or kill, any other unlawful act of force or violence, or emotional abuse (psychological abuse) inflicted by one spouse in a marriage against the other, when the victim, regardless of age, is a member of the military or legally married to a member of the military. Thus, all spouse abuse offenders in this analysis were married. The analysis data set was restricted to substantiated initial incidents of spouse abuse perpetrated by active-duty Army soldiers which occurred during the 5-year study period. Therefore, the analysis data set did not include spouse abuse cases that began before the study period, those in which the offender was not on active duty in the Army, or those that were not substantiated.

To determine whether or not the soldier spouse abuse offenders received services from the Army Substance Abuse Program subsequent to the spouse abuse incident, data from the Drug and Alcohol Management Information System were linked to the Army Central Registry data. The Drug and Alcohol Management Information System contains information from the Army Substance Abuse Program, the organization responsible for the prevention, identification, and treatment of alcohol abuse and illicit drug use by Army soldiers (Department of the Army, 2009). Thus, linking information from these two data sources allowed determination of whether or not the spouse abuse offenders received services from the Army Substance Abuse Program.

To protect the confidentiality of the families in this study, all identifying information was removed by Army personnel before it was provided to the research team.

Study Variables

Several variables from the Army Central Registry were analyzed in this research. Of primary importance for this research note were the variables documenting whether or not the spouse abuse offender was using substances (including alcohol and/or illicit drugs) at the time of the spouse abuse incident. In addition, other variables describing the spouse abuse incident were examined, including a variable documenting whether or not the spouse abuse offender also was a victim of spouse abuse during the abusive incident. Another variable noted the type of spouse abuse perpetrated, specifically, physical abuse only, emotional abuse only, sexual

abuse only, or more than one type of abuse. The U.S. Army Family Advocacy Program Spouse Abuse Manual (U. S. Army Family Advocacy Program, 2009) defines spouse physical abuse as being the use of physical force that causes physical injury to the spouse, defines spouse emotional abuse as being a pattern of acts or omissions that adversely affect the psychological well-being of the victim, and defines spouse sexual abuse as being a forced engagement in any sexual activity via physical violence, intimidation, or threats. A variable documenting the severity of abuse also was examined in this research, with this severity being classified as “severe or moderate” versus “mild.” The U.S. Army Family Advocacy Program Spouse Abuse Manual (U.S. Army Family Advocacy Program, 2009) gives some examples of such abuse, with severe/moderate spouse abuse including behaviors such as choking, strangling, severely beating, cutting with a knife, shooting with a gun, hitting with a fist, and kicking, and examples of mild spouse abuse including behaviors that either inflict no injury or inflict only minor physical injury that does not require medical treatment. Additional variables examined in this research include those describing the soldier offenders’ sociodemographic characteristics, including their sex, race/ethnicity, age, officer/enlisted status, and pay grade (classified as “lower” if the pay grade was E1 through E4 which includes personnel up to the rank of Corporal, and “higher” if the pay grade was E5 or greater which includes the rank of Sergeant and above). Finally, information from the Drug and Alcohol Management Information System was used to ascertain whether or not the spouse abuse offender received services from the Army Substance Abuse Program after the spouse abuse incident.

Data Analysis

A prevalence estimate and an associated 95% confidence interval (95% CI) were computed to assess the extent of substance use by the soldier spouse abuse offenders at the time of the abusive incidents. Descriptive statistics (including percentages and means), chi-square analyses, and analysis of variance (ANOVA) were used to compare the two groups of soldier spouse abuse offenders (those using substances at the time of the abusive incident and those not using substances at the time of the abusive incident) in terms of their sociodemographic characteristics. Chi-square analyses and a Fisher’s exact test were used to compare the characteristics of spouse abuse incidents perpetrated by the two groups of offenders. In addition, descriptive statistics and a relative risk (RR) estimate with an associated 95% CI, were used to examine the likelihood that the offenders who were using substances at the time of the abusive incident subsequently received services from the Army Substance Abuse Program relative to the other soldier offenders who were not using substances at the time of the abusive incident. All study analyses were performed using SAS software, version 9.1, of the SAS System for Windows.

Institutional Review Board Approval

The study protocol was reviewed and approved by the United States Army Medical Research Material Command Human Subjects Research Review Board. In addition, the

Institutional Review Board of Research Triangle International (RTI) and the Institutional Review Board of the Gillings School of Global Public Health at the University of North Carolina in Chapel Hill reviewed and approved the study.

Results

Prevalence of Substance Use by the Offenders During Abusive Incidents

The Army Central Registry records showed that 1,873 of the 7,424 soldier spouse abuse offenders who were substantiated and recorded in the Army Central Registry between January 1, 2000 and December 31, 2004 were using substances at the time of the abusive incident. Thus, the prevalence of substance use by the offenders during abusive events was 25% (95% CI = 24.7%-25.7%). Examination of the types of substances used by these 1,873 offenders during the spouse abuse incidents showed that 96% (95% CI = 94.9%-96.7%) were using alcohol only, 1% (95% CI = 0.7%-1.7%) were using illicit drugs only, and 3% (95% CI = 2.3%-3.8%) were using both alcohol and drugs.

Sociodemographic Characteristics of the Offenders

Table 1 compares the sociodemographic characteristics of all active-duty Army soldiers with those of the 7,424 Army soldier spouse abuse offenders (including the 1,873 using substances at the time of the spouse abuse incident and the 5,551 not using substances at the time of the spouse abuse incident). Compared to all Army soldiers, the two groups of spouse abuse offenders were less likely to be female, were less likely to be non-Hispanic White, and were more likely to be non-Hispanic Black. The spouse abuse offenders were less likely than all Army soldiers to be officers, and the offenders were more likely to be in the lower pay grades. As anticipated, the greatest difference between the spouse abuse offenders and all Army soldiers was in terms of their marital status because, by definition, the spouse abuse offenders were married. Finally, the two groups of spouse abuse offenders were slightly younger than all Army soldiers.

Table 1 also shows that the spouse abuse offenders who were using substances at the time of the abusive incident differed significantly from those not using substances in terms of some of their sociodemographic characteristics. Offenders using substances were significantly less likely to be female compared to those not using substances (3% vs. 6%, respectively, $p < .0001$). The race/ethnicity of the two groups differed significantly ($p < .0001$), with those using substances being more likely to be non-Hispanic White (51% vs. 40%, respectively) and less likely to be non-Hispanic Black (33% vs. 45%, respectively). The substance-using offenders were slightly older than the non-substance-using offenders (mean age of 27.5 years for the substance users vs. 27.1 years

Table 1. Sociodemographic Characteristics of All Army Soldiers and Spouse Abuse Offenders (Including Those Who Used Substances at the Time of the Spouse Abuse Incident and Those Who Did Not Use Substances at the Time of the Spouse Abuse Incident)

	All Army Soldiers ^a (<i>n</i> = 465,100)	Offenders Using Substances at the Time of the Spouse Abuse Incident (<i>n</i> = 1,873)	Offenders Not Using Substances at the Time of the Spouse Abuse Incident (<i>n</i> = 5,551)	<i>p</i> Value ^c
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Sex ^b				<.0001
Female	73,087 (16)	54 (3)	308 (6)	
Male	392,013 (84)	1,816 (97)	5,236 (94)	
Race/ethnicity				<.0001
Non-Hispanic White	270,308 (58)	953 (51)	2,220 (40)	
Non-Hispanic Black	123,399 (27)	615 (33)	2,509 (45)	
Hispanic/Other	71,393 (15)	305 (16)	822 (15)	
Status				.0833
Officer	64,797 (14)	35 (2)	140 (3)	
Enlisted	400,303 (86)	1,838 (98)	5,411 (97)	
Pay Grade				.5380
Lower (E1-E4)	226,638 (48)	1,122 (60)	3,370 (61)	
Higher (E5 or higher)	238,462 (52)	751 (40)	2,181 (39)	
Marital status				—
Married	238,144 (51)	1,873 (100)	5,551 (100)	
Other	226,956 (49)	0 (0)	0 (0)	
	<i>M</i>	<i>M</i>	<i>M</i>	<i>p</i> value ^c
Age ^b	28.0	27.5	27.1	.0085

a. Data from fiscal year 2001 (United States Office of the Under Secretary of Defense, Personnel and Readiness, 2003).

b. Because of some missing information on the sex and age variables among the spouse abuse offenders, the samples sizes in this table range from 1,870 to 1,873 for the offenders using substances and from 5,544 to 5,551 for the offenders not using substances.

c. *p* values are from statistical tests that compared the offenders using substances at the time of the spouse abuse incident and the offenders not using substances at the time of the spouse abuse incident. The categorical variables were analyzed using chi-square tests and the continuous variable was analyzed using an ANOVA.

for the nonusers, *p* = .0085). Although a somewhat smaller percentage of substance-using offenders than non-substance-using offenders were officers (2% vs. 3%, respectively), this difference did not reach the .05 level of statistical significance (*p* = .0833).

Military pay grade did not differ significantly between offenders using substances during spouse abuse incidents and those not using substances during spouse abuse incidents ($p = .5380$).

Characteristics of the Spouse Abuse Incidents Perpetrated by Offenders Using and Not Using Substances

Table 2 shows that the two groups of spouse abuse offenders differed significantly in terms of their experiences of being a victim of spouse abuse during the abusive incident. In particular, offenders who were using substances at the time of the incident were less likely than offenders who were not using substances to have also been victims of spouse abuse during the abusive incident (22% vs. 29%, respectively, $p < .0001$).

The types of spouse abuse incidents committed by substance-using offenders also differed significantly from the types of spouse abuse incidents perpetrated by other offenders ($p = .0005$), even though the magnitude of this effect was not great (see Table 2). In particular, offenders using substances at the time of the incident were more likely than non-substance-using offenders to perpetrate physical abuse only (86% vs. 83%, respectively); in addition, they were less likely to perpetrate emotional abuse only (8% vs. 11%, respectively). The two groups of offenders were similarly likely to commit sexual abuse (less than 1% of each group) and multiple types of abuse (6% of each group).

In general, offenders using substances at the time of the incident were more likely than non-substance-using offenders to commit more severe acts of violence (see Table 2). More specifically, among those who perpetrated physical abuse only, those using substances were significantly more likely than those not using substances to commit severe/moderate acts of abuse (59% vs. 55% respectively, $p = .0072$). Similarly, among those who perpetrated emotional abuse only, those using substances were significantly more likely than those not using substances to commit severe/moderate acts of abuse (68% vs. 59% respectively, $p = .0396$). Although all of the substance-using offenders who committed sexual abuse only committed acts of severe/moderate acts of abuse compared to 85% of the non-substance-using offenders who committed sexual abuse only, this difference was not statistically significant ($p = .5098$). Finally, a greater percentage of the spouse offenders who committed multiple types of spouse abuse committed severe/moderate acts of abuse compared to the non-substance-using spouse offenders who committed multiple types of spouse abuse; however, this difference did not reach the 0.05 level of statistical significance (82% vs. 75%, $p = .1655$).

Army Substance Abuse Program Services

Spouse abuse offenders who were using substances at the time of the incident were significantly more likely than other offenders to receive services from the Army Substance Abuse Program after the spouse abuse incident (see Table 3). Approximately half (51%) of the offenders who were using substances at the time of the spouse abuse incident later

Table 2. Characteristics of the Spouse Abuse Incidents by the Soldiers' Use or Nonuse of Substances at the Time of the Incident

	Offenders Using Substances at the Time of the Spouse Abuse Incident (<i>n</i> = 1,873)	Offenders Not Using Substances at the Time of the Spouse Abuse Incident (<i>n</i> = 5,551)	<i>p</i> Value ^a
	<i>n</i> (%)	<i>n</i> (%)	
Also a victim of spouse abuse during the incident			<.0001
Yes	415 (22)	1,584 (29)	
No	1,458 (78)	3,967 (71)	
Type of spouse abuse perpetrated			.0005
Physical abuse only	1,607 (86)	4,629 (83)	
Emotional abuse only	141 (8)	600 (11)	
Sexual abuse only	5 (<1)	13 (<1)	
More than one type of abuse	120 (6)	309 (6)	
Severity of each type of spouse abuse perpetrated			
Severity of physical abuse			.0072
Severe/moderate	948 (59)	2,552 (55)	
Mild	659 (41)	2,077 (45)	
Severity of emotional abuse			.0396
Severe/moderate	96 (68)	352 (59)	
Mild	45 (32)	248 (41)	
Severity of sexual abuse			.5098
Severe/moderate	5 (100)	11 (85)	
Mild	0 (0)	2 (15)	
Severity of multiple types of abuse ^b			.1655
Severe/moderate	98 (82)	233 (75)	
Mild	22 (18)	76 (25)	

Source: Army Central Registry Data, January 1, 2000 through December 31, 2004.

a. all *p* values are based on chi-square tests, except for the analysis of the severity of sexual abuse for which the *p* value is based on a Fisher's exact test.

b. To classify the severity of abuse for offenders who perpetrated more than one type of abuse, the most severe category was recorded.

received such services compared to only 12% of the offenders who were not using substances at the time of the spouse abuse incident (chi-square *p* = .0001). Thus, substance-using offenders were more than four times as likely as non-substance-using offenders to

Table 3. Army Substance Abuse Program Service Use After the Spouse Abuse Incident

	Offenders Using Substances at the Time of the Spouse Abuse Incident (<i>n</i> = 1,873)	Offenders Not Using Substances at the Time of the Spouse Abuse Incident (<i>n</i> = 5,551)	RR (95% CI)
	<i>n</i> (%)	<i>n</i> (%)	
Army substance abuse program services	955 (51)	642 (12)	4.41 (4.05-4.80)
No Army substance abuse program services	918 (49)	4,909 (88)	

Source: Army Central Registry Data and Drug and Alcohol Management Information System Data, January 1, 2000 through December 31, 2004.

have received services from the Army Substance Abuse Program after the spouse abuse incident (RR = 4.41, 95% CI = 4.05-4.80).

Discussion

This study found that a quarter of Army soldier spouse abuse offenders were using substances, primarily alcohol, at the time of the spouse abuse incident. This estimate of the extent and type of substance use during abusive incidents is similar to that found in other research with active-duty military populations (Brewster et al., 2002; Chapin & Brannen, 2002; McCarroll et al., 1999). The predominant use of alcohol, rather than illicit drugs, may be because of the routine testing for illicit drugs that occurs in the Army, and the fact that illicit drug use could result in being discharged from the Army (Department of the Army, 2009).

This study extends past research on soldier spouse abuse offenders by showing that those who were using substances at the time of the incident were less likely than those who were not using substances to also have been victims of violence during the incident. This may, at least in part, be due to the fact that there was a smaller percentage of female offenders in the substance-using group, and that female perpetrated spouse abuse may be more likely than male perpetrated spouse abuse to be “defensive” in nature (i.e., females perpetrate spouse abuse in response to being a spouse abuse victim; Barnett, Lee, & Thelen, 1997; Melton & Belknap, 2003).

The findings also showed that offenders who were using substances at the time of the incident differed from those who were not using substances in terms of the type and severity of spouse abuse perpetrated. Offenders using substances during the offense were more likely to commit physical abuse and were less likely to commit emotional abuse. In addition, the substance-using offenders tended to commit more severe abusive acts.

The finding that substance-using soldier spouse abuse offenders were four times more likely than non-substance-using offenders to have received services from the Army Substance Abuse Program after the abusive incident suggests that the Family Advocacy Program staff are aware of the need to treat substance-related problems that co-occur with violence problems. It is important to note that the Army Substance Abuse Program offers treatment at no cost to service members. These services are typically offered on installation, and providers in both the Army Substance Abuse Treatment Program and Army Family Advocacy Program are encouraged to refer to each other when co-occurring problems are indicated.

However, half of the substance-using spouse abuse offenders did not receive services from the Army Substance Abuse Program subsequent to the violent incident. Although information was not available in these data on the offenders' levels of substance use during the abusive incidents, it may be that the substance-using soldier offenders not receiving substance-related services were those who were least impaired by their substance use during the spouse abuse incident. It also could be that follow-up assessments conducted by Family Advocacy Program clinicians with the substance-using spouse abusers may have shown that at least some of these offenders did not have a substance abuse problem that indicated the need for treatment, or that the offending soldier's commander (who is involved in the substance abuse evaluation process; Department of the Army, 2009), did not feel that substance abuse treatment was warranted.

One should view these study findings in light of the methodological limitations of this research, with a primary concern being that in the military, as in the civilian world, many incidents of spouse abuse do not come to the attention of the authorities; therefore, the substantiated spouse abuse cases recorded in the Army Central Registry are a subset of all spouse abuse incidents that occur within Army families (Marshall et al., 2005). Moreover, it has been suggested that estimates of the prevalence of spousal violence based on data from the Army Central Registry are underestimates of the true extent of such violence, especially in certain types of families (e.g., higher ranking families whose violence may be less likely to come to the attention of military authorities; Rosen, Knudson, et al., 2002). It is noteworthy that a survey of a representative sample of married Army personnel estimated that 228 of every 1,000 active-duty male soldiers and 311 of every 1,000 active-duty female soldiers committed moderate or severe acts of violence against their spouse during the past year (Heyman, Schaffer, Gimbel, & Kerner-Hoeg, 1996), a much higher prevalence of spousal violence than found in the Army Central Registry data (Caliber Associates, 1996). Some of the difference in these prevalence estimates may be because Army families face the same barriers to reporting spouse abuse as those faced by all families (e.g., embarrassment, shame, fear of being blamed), as well as additional barriers to reporting, such as fearing that these reports will adversely affect the military career of the soldier offender (Joyce & Coolbaugh, 1994; U.S. General Accounting Office, 2000). These fears appear to be well-founded because there is some evidence to suggest that those who have been identified as spouse abusers in the military are somewhat less likely than their peers to be promoted in a timely fashion if they stay in the military, and are somewhat more likely than their peers to leave the military early (U.S. Office of the Under Secretary of Defense, Personnel and Readiness, 1994). Moreover, even when a spouse abuse incident is reported,

it is not necessarily substantiated (approximately 70% of the reported spouse abuse incidents are substantiated by the Family Advocacy Program; U.S. General Accounting Office, 2000).

There are several other limitations of this research. In particular, this study did not examine cases of spouse abuse in Army families that were perpetrated by the nonmilitary spouse (e.g., those in which the civilian spouse abused their military spouse); therefore, the study findings may not be generalizable to these other families. In addition, even though we had information concerning the Army Substance Abuse Program, we did not have information concerning other types of substance abuse treatment that the soldiers may have received, such as those offered by civilian providers; therefore, we may have underestimated the extent of substance abuse treatment received by these soldiers. Finally, because this study focused on Army soldiers, the study results may not be generalizable to those in other branches of the military.

Despite these study limitations, the findings from this research provide information concerning the links between substance use and spouse abuse perpetration by Army soldiers that have implications for practice, policy, and research. The finding that substance-using spouse offenders tend to perpetrate more physical and severe violence underscores the importance of continuing to educate military personnel (including Army commanders, senior noncommissioned officers, military police, health care personnel, and others) concerning risk factors for domestic violence, including substance abuse, a recommendation in line with the Defense Task Force on Domestic Violence's (2003) call for improved and continuous training of military personnel on domestic violence issues. The importance of educating Army commanders regarding these issues cannot be emphasized enough given the critical role that they play in assuring that soldiers receive needed interventions. In addition, the relatively common occurrence of substance use during spouse abuse incidents suggests the need for treatment approaches that concurrently address relationship issues and substance abuse issues, and suggests the importance of prevention education that addresses the risk of conflict escalation when one or both spouses are drinking (see, for example, O'Farrell, Murphy, Stephan, Fals-Steward, & Murphy, 2004). This dual approach, focused on both spouse abuse and substance abuse, requires a coordinated partnership between the Army Family Advocacy Program and the Army Substance Abuse Program. It is encouraging to note that recent findings from a worldwide survey of Army Family Advocacy Program and Army Substance Abuse Program clinical providers and directors showed that 60% of Army Family Advocacy Program providers and 70% of Army Family Advocacy Program directors (social work chiefs) characterized the effectiveness of the working relationship between the Army Family Advocacy Program and the Army Substance Abuse Program as being "very effective;" similarly, 53% of Army Substance Abuse Program providers and 76% of Army Substance Abuse Program directors characterized the effectiveness of the working relationship between the Army Substance Abuse Program and the Army Family Advocacy Program as being "very effective" (Hardison Walters, Clinton-Sherrod, Gibbs, & Martin, 2008). Finally, in line with the Defense Task Force on Domestic Violence's (2003) call for research that differentiates various types of abusers and abusive

situations and research that determines which interventions work best for particular types of offenders, future researchers are encouraged to undertake further rigorous investigations to learn more about the links between spouse abuse perpetration and substance use/abuse in military families, including evaluation of the effectiveness of coordinated services for the prevention and treatment of intimate partner violence and substance abuse.

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References

- Barnett, O. W., Lee, C. Y., & Thelen, R. E. (1997). Gender differences in attributions of self defense and control in interpartner aggression. *Violence Against Women, 3*, 462-481.
- Bell, N. S., Harford, T., McCarroll, J. E., & Senier, L. (2004). Drinking and spouse abuse among U. S. Army soldiers. *Alcoholism: Clinical and Experimental Research, 28*, 1890-1897.
- Bohannon, J. R., Dosser, D. A., & Lindley, S. E. (1995). Using couple data to determine domestic violence rates: An attempt to replicate previous work. *Violence and Victims, 10*, 133-141.
- Bray, R. M., Marsden, M. E., & Peterson, M. R. (1991). Standardized comparisons of the use of alcohol, drugs, and cigarettes among military personnel and civilians. *American Journal of Public Health, 81*, 865-869.
- Brewster, A. L., Milner, J. S., Mollerstrom, W. W., Saha, B. T., & Harris, N. (2002). Evaluation of spouse abuse treatment: Description and evaluation of the Air Force Family Advocacy Programs for spouse physical abuse. *Military Medicine, 167*, 464-469.
- Caliber Associates. (1996, September). *Final report on the study of spousal abuse in the Armed Forces*. Prepared for the Office of the Assistant Secretary of Defense, Washington, DC.
- Chapin, M. G., & Brannen, S. J. (2002, September). *Modeling overlap of substance abuse and axis II features in maritally violent couples*. Presented at the 7th International Conference on Family Violence: Working Together to End Abuse, San Diego, CA.
- Defense Task Force on Domestic Violence. (2003). *Defense task force on domestic violence third year report*. Retrieved May 8, 2009, from <http://www.ncdsv.org/images/Year3Report2003.pdf>

- Department of the Army. (2007). *Army regulation 608-18. The Army Family Advocacy Program*. Washington, DC: Author.
- Department of the Army. (2009, February 2). *Army regulation 600-85: The Army Substance Abuse Program*. Washington, DC: Author.
- Fonseca, C. A., Schmalig, K. B., Stoeber, C., Gutierrez, C., Blume, A. W., & Russell, M. L. (2006). Variables associated with intimate partner violence in a deploying military sample. *Military Medicine, 171*, 627-631.
- Gerlock, A. A. (1999). Health impact of domestic violence. *Issues in Mental Health Nursing, 20*, 373-385.
- Gondolf, E. W., & Foster, R. A. (1991). Wife assault among VA alcohol rehabilitation patients. *Hospital and Community Psychiatry, 42*, 74-79.
- Hardison Walters, J. L., Clinton-Sherrod, M., Gibbs, D., & Martin, S. L. (2008). *Addressing co-occurring family violence and substance abuse: A survey of Army clinical directors and service providers*. Report prepared for the U. S. Army Medical Research & Materiel Command, RTI International, Research Triangle Park, NC.
- Heyman, R., & Neidig, P. (1999). A comparison of spousal aggression prevalence rates in U. S. Army and civilian representative samples. *Journal of Consulting and Clinical Psychology, 67*, 239-242.
- Heyman, R., Schaffer, R., Gimbel, C., & Kerner-Hoeg, S. (1996). *A comparison of the prevalence of Army and civilian spouse violence: Final report*. Prepared for the U. S. Army Community and Family Support Center.
- Hurlbert, D., F., Whittaker, K. E., & Munoz, C. J. (1991). Etiological characteristics of abusive husbands. *Military Medicine, 156*, 670-670.
- Joyce, K., & Coolbaugh, K. (1994). *Victims survey preliminary report*. Technical report submitted to the Department of Defense (Contract F\$9650-92-D5006). Fairfax, VA: Caliber.
- Krug, E., Dahlberg, L., Mercy, J., Zwi, A., & Lozano, R. (Eds.). (2002). *World report on violence and health*. Geneva, Switzerland: World Health Organization.
- Marshall, A. D., Panuzio, J., & Taft, C. T. (2005). Intimate partner violence among military veterans and active duty servicemen. *Clinical Psychology Review, 25*, 862-876.
- Martin, S. L., Gibbs, D. A., Johnson, R. E., Rentz, E. D., Clinton-Sherrod, M., & Hardison, J. (2007). Spouse abuse and child abuse by Army soldiers. *Journal of Family Violence, 22*, 587-595.
- McCarroll, J., Newby, J., Thayer, L., Norwood, A., Fullerton, C., & Ursano, R. (1999). Reports of spouse abuse in the U. S. Army central registry (1989-1997). *Military Medicine, 164*, 77-84.
- Melton, H. C., & Belknap, J. (2003). He hits, she hits: Assessing gender differences and similarities in officially reported intimate partner violence. *Criminal Justice and Behavior, 30*, 328-348.
- Merrill, L. L., Hervig, L. K., & Milner, J. S. (1996). Childhood parenting experiences, intimate partner conflict resolution, and adult risk for child physical abuse. *Child Abuse and Neglect, 20*, 1049-1065.
- O'Farrell, T. J., Murphy, C. M., Stephan, S. H., Fals-Stewart, W., & Murphy, M. (2004). Partner violence before and after couples-based alcoholism treatment for male alcoholic patients:

- The role of treatment involvement and abstinence. *Journal of Consulting and Clinical Psychology*, 72, 202-217.
- Pan, H. S., Neidig, P. H., & O'Leary, K. D. (1994). Predicting mild and severe husband-to-wife physical aggression. *Journal of Consulting and Clinical Psychology*, 62, 975-981.
- Rentz, E. D., Martin, S. L., Gibbs, D. A., Clinton-Sherrod, M., Hardison, J., & Marshall, S. W. (2006). Family violence in the military: A review of the literature. *Trauma, Violence, & Abuse*, 7, 93-108.
- Rosen, L. N., Kaminski, R. J., Parmley, A. M., Knudson, K. H. & Fancher, P. (2003). The effects of peer group climate on intimate partner violence among married male U. S. Army soldiers. *Violence Against Women*, 9, 1045-1071.
- Rosen, L. N., Knudson, K. H., Brannen, S. J., Fancher, P., Killgore, T. E., & Barasich, G. G. (2002). Intimate partner violence among U. S. Army soldiers in Alaska: A comparison of reported rates and survey results. *Military Medicine*, 167, 888-691.
- Rosen, L. N., Parmley, A. M., Knudson, K. H., & Fancher, P. (2002a). Gender differences in the experience of intimate partner violence among active duty U. S. Army soldiers. *Military Medicine*, 167, 959-963.
- Rosen, L. N., Parmley, A. M. Knudson, K. H., & Fancher, P. (2002b). 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.
- Savarese, V. W., Suvak, M. K., King, L. A., & King, D. W. (2001). Relationships among alcohol use, hyperarousal, and marital abuse and violence in Vietnam veterans. *Journal of Traumatic Stress*, 14, 717-732.
- Taft, C. T., Pless, A. P., Stalans, L. J., Koenen, K. C., King, L. A., & King, D. W. (2005). Risk factors for partner violence among a national sample of combat veterans. *Journal of Consulting and Clinical Psychology*, 73, 151-159.
- Tjaden, P., & Thoennes, N. (2000). *Extent, nature and consequences of intimate partner violence: Findings from the National Violence Against Women Survey*. Washington, DC: U.S. Department of Justice.
- U.S. Army Family Advocacy Program. (2009). *The U. S. Army Family Advocacy Program spouse abuse manual*. Retrieved May 4, 2009, from <http://child.cornell.edu/army/spam/spam3.htm>
- U.S. General Accounting Office. (2000, April). *Military dependents; Services provide limited confidentiality in family abuse cases*. Washington, DC: Author.
- U.S. Office of the Under Secretary of Defense, Personnel and Readiness. (1994). *Abuse victims study final report*. Retrieved May 4, 2009, from http://www.dtic.mil/dtfs/doc_research/p18_8.pdf
- U.S. Office of the Under Secretary of Defense, Personnel and Readiness. (2003, March). *Population representation in the military services, fiscal year 2001*. Retrieved May 11, 2009, from <http://www.dod.mil/prhome/poprep2001/index.htm>

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