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14. ABSTRACT

Few health and social issues, within military or civilian populations, have as far-reaching an impact as family violence and substance abuse. This study advances existing research by using the Army's unique data resources to simultaneously study three problems with known co-occurrence: spouse abuse, child abuse, and substance abuse. By supporting the development of improved responses to troubled families, findings from this study can potentially reduce mortality and morbidity among military personal and their family members and suggest enhanced strategies for nonmilitary service delivery systems.

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1. Introduction and Objectives

Current research has demonstrated the co-occurrence of spouse abuse, child abuse, and substance abuse in the civilian population; however, little is known about the extent of co-occurrence in military families and the level of coordination between service providers to address these complementary problems in military settings. Civilian data and service delivery data for these issues are not centralized, but military environments provide an excellent opportunity to explore these issues because of comprehensive databases about identified cases of child abuse, spouse abuse, and substance abuse and data on on-base service delivery systems.

This study is examining two critical areas of co-occurrence: (1) spouse abuse and child abuse that occur in the same family and (2) substance abuse by soldiers identified as spouse abuse or child abuse offenders. The research is also investigating Army service provider efforts to coordinate services to address co-occurrence, coordination between Army and civilian service providers, barriers to help-seeking and service utilization by families, barriers to service linkage among providers, and characteristics of the Army environment that facilitate or impede early identification and coordinated treatment of co-occurrence. This study will begin to address the gaps in the knowledge base surrounding co-occurrence and will enhance understanding of service delivery coordination efforts to address it. A more in-depth assessment of the needs of families and understanding of service provider practices is vital to ensure and enhance a coordinated social work response to the co-occurrence of child abuse, spouse abuse, and substance abuse in military environments.

The objective of this study is to identify opportunities to help military families experiencing violence and/or substance abuse and establish best practices for coordinating multiple service delivery for these families. Researchers hypothesize significant overlap of child abuse, spouse abuse, and/or substance abuse in Army families experiencing violence, and that Army and civilian social service agency staff are not providing a coordinated response to serving these families.

The study is guided by the following three aims:

- Examine characteristics of Army personnel and families experiencing co-occurrence of child abuse, spouse abuse, and/or substance abuse.
- Identify characteristics of Army service providers and organizations that facilitate or impede service linkage.

- Describe perceptions of Army and civilian responders, service providers, and families about needs regarding service delivery and linkage, current and best practices, and barriers to delivering or receiving services.

2. Body

2.1 Background

The Department of Defense (DoD) has designated the identification, prevention, and treatment of spouse abuse (1–3) and substance abuse (4–6) as separate priorities for improving the health and well-being of U.S. military forces. Prevalence rates controlled by weighting U.S. Army and civilian samples to 1990 U.S. Census characteristics for married, full-time employed persons have shown that men's reports of moderate husband-to-wife spousal aggression were similar in U.S. Army (10 percent) and civilian samples (11 percent), but adjusted rates of severe aggression were significantly higher in the standardized Army sample (2.5%) than in the comparable civilian sample (0.7%) (7). Furthermore, recent spouse homicides at Fort Campbell, Kentucky (8), and at Fort Bragg, North Carolina (9), have sparked much public attention and concern within the Army about this issue. Research by Bray and colleagues with the comprehensive DoD Health Behavior survey series has shown that heavy alcohol use is significantly higher among Army personnel than civilians after controlling for differences in the Army and civilian populations (10). These problems may be exacerbated in soldiers who are facing higher stress, including working in high-risk environments, deployment, frequent relocations, and nights away from home. McCarroll and colleagues found that the probability of severe spousal aggression was significantly greater among soldiers deployed during the past year and that the magnitude of impact increased with the length of deployment (11). Some families experiencing soldier deployment may experience financial difficulties, which may be exacerbated by an increase in long-distance telephone calls to the deployed soldier (12). Familial and parental roles are likely to change during the course of deployment, and issues at home must be renegotiated before a positive reunion after deployment can occur (12, 13), potentially resulting in disappointment, frustration, and conflict between family members. Deployed mothers have reported increased parenting stress when anticipating deployment (14), and temporary emotional and behavioral problems have been identified among children who had a parent deployed for 6 months or less (15). Residual aggression from combat (16) or post-traumatic stress disorder (PTSD) associated with combat experiences may increase risk for a combination of child abuse, spouse abuse, and/or substance abuse by soldiers.

Much of the research on child abuse (17–19), spouse abuse (9, 11, 20, 21), and substance abuse (8, 22–24) in the military has focused on these problems separately, but the co-occurrence

of these problems has been well-established in civilian studies (25). For the purpose of this research, co-occurrence was defined in two ways: (1) spouse abuse and child abuse that occur in the same family and (2) substance abuse by a soldier who is a spouse-abuse or child-abuse offender. Civilian studies indicate that 30 percent to 60 percent of families where either child abuse or spouse abuse occurs experience the other form of violence as well (e.g., 26, 27). The link between spouse abuse and child abuse is beginning to be recognized within the military. For example, the Defense Task Force on Domestic Violence (DTFDV) (3) recently acknowledged keen awareness of the co-occurrence of spouse abuse and child abuse as well as the significant impact on children who witness spouse abuse.[1] Recent research has also found that Army families with an incident case of spouse abuse were twice as likely to have a substantiated report of child abuse compared with Army families with no spouse abuse (29). The link between spouse abuse and child abuse is complex because both offenders and victims of spouse abuse may batter children; for example, one study found that women were eight times more likely to hurt their children while they themselves were being battered than after they left the abusive relationship (30). Although the link between family violence and substance abuse has not been extensively explored in the Army, preliminary findings from an ongoing study indicate an association between alcohol use and spouse abuse (31) and civilian studies have indicated that substance abuse is a risk factor for both spouse abuse (32, 33) and child abuse perpetration (34, 35). In fact, research has generally concluded that substance abuse is a causal agent or contributor to a variety of forms of violence (36–40).

The costs of child abuse, spouse abuse, and substance abuse to the United States in general and to the military are considerable. A 2001 study by Prevent Child Abuse America, based on data from the U.S. Department of Health and Human Services (DHHS), the U.S. Department of Justice (DOJ), the decennial Census, and other sources estimated that direct costs due to child abuse were about $24.4 billion; this includes health care costs for acute care and chronic health problems, and mental health care (41). Indirect costs associated with long-term or secondary effects of child abuse totaled about $69.7 billion. The full economic cost of spouse abuse has not been determined, but what is known suggests that it is quite high. Direct medical costs for care of battered women are estimated at $1.8 billion per year (42, 43). The National Research Council (NRC) and the Institute of Medicine (IOM) estimated that when time lost from work and other acute and long-term health care costs are added, the overall annual costs range between $5 billion and $67 billion (44). The economic costs to society of substance abuse have been estimated at $280 billion per year (45). Alcohol-related lost productivity alone accounts for

[1]Witnessing domestic violence was recently found to be the most frequently substantiated type of child emotional abuse in a 2-year study of Army cases (28).

half of the total costs. Bray and colleagues confirmed that alcohol use among military personnel is implicated in lowered work performance (10). Soldiers involved in family violence or substance abuse may be more likely than those not involved in these problems to be discharged prematurely.[2] These costs act to reduce military readiness by diverting money from equipment, training, and recruiting additional personnel. In addition to these monetary costs, family violence and substance abuse have also been linked to injury and death (46), serious psychological consequences for victims (47, 48), developmental problems among child victims and witnesses of violence (49–53), and intergenerational repetition of these behaviors (54).

Since 1972, DoD policies and directives have set forth prevention and treatment policies to confront substance abuse among military personnel (e.g., 4, 5, 55–58). In recent years, DoD has intensified efforts to prevent spouse abuse by emphasizing zero tolerance and providing programs in marriage enrichment, communication skills, financial management, and stress and anger management (59). In 2000, the Defense Task Force on Domestic Violence was established by the National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65, to assist DoD in determining ways to address domestic violence more effectively (3). The strategy typically used by the military to combat domestic violence within military families has been mandatory reporting by military personnel of suspected family violence and the establishment of Family Advocacy Programs (FAPs) charged with preventing, investigating, reporting, and treating spouse abuse and child abuse. The FAP protocol encourages social workers to refer spouse abuse or child abuse offenders with identified alcohol or other drug involvement to the on-base counseling center for a substance abuse assessment. The military's response to combat substance abuse involves a combination of education, prevention, random testing for illicit drug use, and substance abuse assessment and treatment for identified substance abusers. Coordinated services addressing child abuse, spouse abuse, and substance abuse can reduce co-occurrence of these problems (60) and has been recommended for child abuse offenders (61) and spouse abuse offenders and victims (3, 62). However, such coordinated treatment is challenging and is not the norm among civilian service providers (61, 63–65). The Defense Task Force on Domestic Violence (3) noted that during visits to installations, rarely did interventions occur simultaneously in families where both spouse-abuse and child-abuse victims were identified. It is not known to what extent military service providers coordinate services for spouse abuse and child abuse or for family violence and substance abuse.

[2]According to the Army Research Institute, the cost of recruiting and basic training for an E1 soldier is $60,000. Clearly, attrition due to family violence or substance abuse by soldiers is costly.

Previous research has yielded essential information on the nature, correlates, and benefits of service linkage to address co-occurrence of child abuse, spouse abuse, and substance abuse. Recent work by RTI investigators has identified correlates and barriers to service linkage among civilian service providers who either work with spouse abuse victims and offenders or substance abuse treatment clients. Nonetheless, despite this emerging knowledge about service linkage to address co-occurrence in civilian families, critical information is not available about the extent of co-occurrence in the military population and their families or about the level of coordination among military service providers to address the co-occurrence of child abuse, spouse abuse, and substance abuse. In addition, little research has examined coordination between military and civilian service providers to address co-occurrence.

2.2 Year 2 Activities

The project's second year has included significant progress in each of the study's three major components.

2.1.1 Task 1: Convene Advisory Committee

Regular contact with the Advisory Committee ensures that the study team has the advantage of diverse perspectives and that study procedures address the Army's procedural and scientific requirements. During Year 2, one meeting of the study's Advisory Committee was convened, on May 11, 2005, at the offices of the Army Center for Substance Abuse Programs (ACSAP). Following an update of progress and concerns related to the secondary data analysis and provider survey, the remainder of the meeting was devoted to planning for the case study component. Discussion topics included site selection, letter of authorization, point of contact and human subjects review issues. Members of the Advisory Committee have also participated in numerous conference calls, as well as *ad hoc* calls and email correspondence to address tasks related to each of the study's components.

Table 1 shows current membership on the Advisory Committee.

Table 1. Advisory Committee Members

Name	Affiliation
LTC Mark Chapin	Uniformed Services University of the Health Sciences
LTC Mary Dooley-Bernard	Community and Family Support Center
Ms. Marsha Drain	Army Center for Substance Abuse Programs
Dr. Les McFarling	Army Center for Substance Abuse Programs
Dr. Rene' J. Robichaux	Army Medical Command
Ms. Laura Radel	U.S. Department of Health and Human Services

2.2.2 Task 2: Secondary Analysis

This task involves analysis of data from three Army sources: the Army Central Registry (ACR), the Drug and Alcohol Management Information System (DAMIS), and Army personnel data archived by the Defense Manpower Data Center (DMDC). During Year 2, we conducted preliminary analyses of ACR and DAMIS data and worked on data access issues with DMDC. Secondary analyses activities were given exempt status by RTI's Institutional Review Board (IRB) on July 15, 2004 and by the Human Subjects Research Review Board (HSRRB) Fort Detrick on February 16, 2005.

Analyses to date have addressed three types of co-occurrence. Descriptive statistics, including percentages, means, and standard deviations, were used to examine the extent and nature of co-occurrence. Chi-square tests were used to compare the characteristics of soldiers in different groups. Relative risks (RRs) and 95% confidence intervals (CIs) were used to compare the type and severity of family violence offenses committed by soldiers with and without co-occurring conditions.

- **Co-occurrence of spouse abuse and child abuse.** More than half of all family violence offenders were spouse offenders who had not committed child abuse (60%), followed by child offenders who had not committed spouse abuse (28%), and lastly those who committed both spouse and child abuse (12%). The three groups of family violence offenders differed in terms of the types of abuse they perpetrated (emotional abuse, physical abuse, etc.), their experiences of being a spouse abuse victim, and their sociodemographic characteristics (sex, age, pay grade). Multiple abusive incidents were perpetrated by 12% of all spouse abusers and 10% of all child abusers. Family violence fatalities were greater among children than spouses, although none of the deaths resulting from child abuse and only one of the deaths resulting from spouse abuse were the result of a soldiers' second or later incident of family violence.

- **Co-occurrence of substance abuse and child abuse.** Among soldiers who were child abuse offenders, 16% had identified substance abuse. Among child abuse offenders, those with identified substance abuse were more likely to be male, younger and in lower pay grades. Child abuse offenders with identified substance abuse were more likely to have committed child neglect or emotional abuse, and less likely to have committed physical abuse. Co-occurring substance abuse was identified prior to the first child abuse offense in approximately half of cases. The severity of abuse and likelihood of repeated incidents did not vary with the presence of identified substance abuse. Both the prevalence and characteristics of co-occurrence in the Army differ substantially from those believed to exist in civilian child welfare. Findings suggest opportunities for prevention and services within the military.

- **Co-occurrence of substance abuse and spouse abuse**. Among soldiers who were spouse abuse victims or offenders, 22% had an identified substance abuse problem, with the rate of substance abuse highest among those who were spouse abuse offenders only, and lowest among those who were spouse abuse victims only. Spouse abuse offenders with identified substance abuse were less likely to commit emotional abuse, and more likely to commit physical abuse than those who did not have identified substance abuse. For approximately half of the family violence offenders who also had identified substance abuse, substance abuse was identified prior to the first substantiated family violence incident.

A manuscript describing the analysis of co-occurring spouse and child abuse has been submitted for publication; it is included as Appendix 1. Draft manuscripts on the co-occurrence of substance abuse and child abuse, and substance abuse and spouse abuse are in preparation. Preliminary findings on these analyses were presented at the Family Advocacy Program (FAP) Worldwide Biennial FY05 Training Conference in Charlotte, NC on July 26, 2005. They will also be presented as a poster at the Military Health Research Forum in San Juan, PR, in May 2006, and at the International Family Violence and Child Victimization Research Conference in July 2006.

Additional analyses examine the effect of military service characteristics and experience on co-occurring family violence and substance abuse, and the impact of co-occurrence on length of stay in the military. These analyses have been delayed by problems accessing DMDC data and matching IDs to those from the DAMIS and ACR files. In particular, findings related to the co-occurrence of spouse abuse and substance abuse, and the co-occurrence of child abuse and substance abuse, are considered preliminary while we continue work to resolve data quality issues related to matching ID numbers.

This work will continue in Year 3 and result in additional manuscripts and presentations.

2.2.3 Task 3: Survey of Army Service Providers and Directors

The provider survey will compile data from substance abuse and family advocacy providers and directors. Survey development continued through the first part of Year 2. Members of the Advisory Committee provided extensive feedback on these drafts to ensure that instruments focus on areas of highest priority and use appropriate terminology for Army service settings. Instruments are constructed to include parallel items for respondents in social work and substance abuse, and to minimize overlap between director and provider instruments except where comparisons are desired. All instruments have been programmed for administration via the world wide web, or by computer-assisted telephone interview.

RTI's IRB determined that the provider survey materials and instruments qualified for expedited review, and approved the survey component on March 11, 2005. The application for HSRRB review was submitted on March 28, 2005 and approved on March 13, 2006.

2.2.4 Task 4: Case Studies

The case study component will provide a broader variety of perspectives on issues related to co-occurrence and service responses. During Year 2, RTI worked with Advisory Committee members to compile a list of recommended sites and alternate sites for the case study site visits. A case study protocol was developed, including detailed plans for initial contact with installations, identification and recruitment of individuals for data collection, data management and analysis. The protocol also includes all lead letters, informed consent forms and data collection instruments

RTI's IRB approved the case study component on August 3, 2005. The review package was submitted to HSRRB on August 8, 2005, and comments were received on February 9, 2006. The study team is currently working on its response to HSRRB comments on the case study package. We anticipate HSRRB approval during April of 2006.

2.2.5 Task 5: Integration and Dissemination of Findings

No activities during Year 2.

2.3 Project Schedule

Extensive delays in data access and HSRRB approval for the provider survey have delayed these tasks, so that they will occur concurrently with the case study site visits rather than consecutively. Therefore, in order to allow adequate time for thorough integration of findings

from the three components, we will need to request an extension of the project end date. Our current anticipated project schedule, based on the revised Statement of Work (SOW) in Appendix 2, assumes that we will request a one-year extension.

2.4 Year 3 Plans

2.4.1 Task 1: Convene Advisory Committee

During Year 2, we anticipate holding one meeting of the Advisory Committee. The focus of this meeting will be on (1) review of findings from secondary analysis; (2) discussion of preliminary analysis of survey results; and (3) plans for case study site visits. We will work with members of the Advisory Committee to identify a mutually convenient date, probably late summer or early fall. We will continue frequent communication with Advisory Committee members, as well as requesting their review of any publications or presentations.

2.4.2 Task 2: Secondary Analysis

RTI will continue to work on resolving data quality issues, in order to finalize ongoing analyses of DAMIS and ACR data and conduct planned analyses incorporating DMDC data. Analyses resulting in journal manuscripts are planned for the following:

- Patterns of co-occurrence of child abuse and substance abuse, including estimates of the extent of co-occurrence, characteristics of soldiers with co-occurrence, variations in the severity and type of child abuse among soldiers with and without co-occurring substance abuse and which abuse was likely to be detected first
- Patterns of co-occurrence of spouse abuse and substance abuse, including estimates of the extent of co-occurrence, characteristics of soldiers with co-occurrence, variations in the severity and type of spouse abuse among soldiers with and without co-occurring substance abuse and which abuse was likely to be detected first
- Descriptive analysis of services provided for victims and perpetrators of spouse abuse and child abuse
- Relationship between deployment and family violence

2.4.3 Task 3: Survey of Army Service Providers and Directors

Project team members are currently planning and implementing the pre-testing protocol, which includes cognitive interviews, web useability testing and a pilot test. We will submit any changes resulting from the pre-testing to HSRRB for approval prior to fielding the full survey. Current plans call for the survey to be fielded between August 15, 2006 and October 15, 2006.

Following completion of data collection, RTI will create an analytic dataset. This data will then be used to describe provider behavior in terms of screening and service delivery for co-occurring conditions and to analyze the effect of provider motivation and organizational resources on providers' response to co-occurrence.

2.4.4 Task 4: Case Studies

Once we have received HSRRB approval, we will work with our point of contact at the Installation Management Agency to initiate plans for final site selection and site visit scheduling. Data collection is planned for June through September, 2006. Following completion of data collection, we will analyze case study data to describe the similarities and disparities related to service delivery and barriers to addressing co-occurrence among Army and civilian providers and Army families.

2.4.5 Task 5: Integration and Dissemination of Findings

No activities are planned during Year 3.

3. Key Research Accomplishments

Accomplishments during Year 2 include the following:

- Convened one meeting of the study Advisory Committee and maintained contact with Advisory Committee members
- Developed procedures for ID recoding and data transfer that enabled us to receive data from ACR, DAMIS and DMDC.
- Submitted manuscript on the co-occurrence of spouse and child abuse for publication
- Presented preliminary analyses of co-occurrence of spouse and substance abuse and co-occurrence of child and substance abuse at the FAP Biennial Worldwide Training Conference.
- Received HSRRB approval for provider survey.
- Programmed provider survey for web and CATI administration
- Received approval from RTI IRB for case studies and submitted application to HSRRB.

4. Reportable Outcomes

Results of our analyses of co-occurring spouse abuse and child abuse, detailed in the attached manuscript, include the following:

- The majority of substantiated family violence offenders were spouse offenders who had not committed child abuse (60%), followed by child offenders who had not

committed spouse abuse (28%), and finally those who committed both spouse and child offenses (12%).

- The three groups of family violence offenders differed in terms of the types of abuse they perpetrated, their experiences of being a spouse abuse victim, and sociodemographic characteristics.
- Twelve percent of all spouse abusers committed multiple abuse incidents, and 10% of all child abusers committed multiple abuse incidents.
- Fatalities due to family violence were much greater among children than spouses, with deaths being caused by 21 of the child offenders and only 5 of the spouse offenders. None of the deaths resulting from child abuse and only one of the deaths resulting from spouse abuse were the result of a soldiers' second or later incident of family violence.

Findings from analyses of the co-occurrence of spouse abuse and substance abuse, and child abuse and substance abuse, are not reportable, pending resolution of data quality issues.

5. Conclusions

At this time there are no conclusions to be made due to the early stage of the study.

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APPENDIX 1

SUBMITTED MANUSCRIPT

Spouse Abuse and Child Abuse by Army Soldiers

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ABSTRACT

This study analyzed data collected by the Army's Family Advocacy Program, the group primarily responsible for family violence prevention, identification, evaluation, treatment, and follow-up on Army installations. Patterns of spouse abuse and child abuse perpetrated within a five year period (2000-2004) were examined in a sample of 10,864 Army soldiers who were substantiated for family violence offences. Three groups of family violence offenders were compared: (i) those who perpetrated spouse offenses only; (ii) those who perpetrated child offenses only; and (iii) those who perpetrated both spouse and child offenses. The results showed that the majority of substantiated family violence offenders were spouse offenders who had not committed child abuse (60%), followed by child offenders who had not committed spouse abuse (28%), and finally those who committed both spouse and child offenses (12%). The three groups of family violence offenders differed in terms of the types of abuse they perpetrated (neglect, emotional abuse, physical abuse, and sexual abuse), their experiences of being a spouse abuse victim, and sociodemographic characteristics. Twelve percent of all spouse abusers committed multiple abuse incidents, and 10% of all child abusers committed multiple abuse incidents. Even though the majority of family violence offenses were for spouse abuse rather than for child abuse, fatalities due to family violence were much greater among children than spouses, with deaths being caused by 21 of the child offenders and only 5 of the spouse offenders. None of the deaths resulting from child abuse and only one of the deaths resulting from spouse abuse were the result of a soldiers' second or later incident of family violence.

KEY WORDS: Child abuse, domestic violence, family violence, injury, military, spouse abuse, U.S. Army, violence.

Family violence, including spouse abuse and child abuse, has been recognized as a widespread public health problem that exacts a high toll on the health and well-being of U.S. families (American Psychological Association, 1996; Department of Health and Human Services [DHHS], 2005). Although there have been numerous studies of family violence, a relatively small number have been set within military populations. Thus, less is known concerning family violence among persons who are in the military, including Army soldiers. Such limited knowledge is of special concern since particular aspects of military life (such as military deployments, relocations, and long work hours) may place additional stress on family members that may increase the risk of family violence (Kelly, 1994; Prier & Gulley, 1987; Segal, 1989; Wasileski *et al.*, 1982). In addition, the aggressive nature of some aspects of military training could potentially translate into higher levels of serious violence occurring during family conflicts for at least some soldiers (Miller & Veltkamp, 1993).

The few investigations concerning violence in military families that do exist have generally focused on either spouse abuse or child abuse, rather than simultaneously examining these two types of violence. These studies have often found that the types of violence perpetrated in military families, and the risk factors associated with this violence, are generally similar to those found among civilian families. For example, as in civilian families, spouse abuse among military families commonly takes the form of physical abuse and/or emotional abuse (McCarroll *et al.*, 1999; McCarroll *et al.*, 2004c; Mollerstrom *et al.*, 1992; Rentz *et al.*, in press; Tjaden & Thoennes 2000). Spouse abuse in military families is more common among younger persons (McCarroll *et al.*, 1999; Rosen *et al.*, 2002), African Americans (McCarroll *et al.*, 1999; Newby *et al.*, 2000) and persons with lower incomes (Rosen *et al.*, 2002; Wasileski *et al.*, 1982). Physical abuse and neglect are the most common forms of child abuse in both

military families and civilian families (DHHS, 2005; McCarroll *et al.*, 2004a; McCarroll *et al.*, 1999; McCarroll *et al.*, 2004; Mollerstrom *et al.*, 1995; Raiha & Soma, 1997; Rentz *et al.*, in press). Perpetrators of child abuse in military families tend to be younger in age (Mollerstrom *et al.*, 1995) and have lower income levels (Mollerstrom *et al.*, 1995; Raiha & Soma, 1997), similar to the perpetrators of child abuse in civilian families.

Although past research concerning violence among military families has enhanced our understanding of this important topic, only one publication was located that examined both child abuse and spouse abuse, thus allowing a description of patterns of family violence (Rumm *et al.*, 2000). This paper focused on Army families and found that child abuse was approximately twice as likely among families in which there was spouse abuse (Rumm *et al.*, 2000); however, this research had several limitations, such as not examining a wide range of potentially important sociodemographic characteristics of the violent offenders (e.g., sex, race/ethnicity, etc.) and various aspects of the violence perpetrated (e.g., fatalities resulting from the violence, etc.).

More information concerning patterns of family violence perpetration among military families is needed so that those who develop and implement preventive and therapeutic interventions for violence in military families have an empirical base from which to do their work. In the U.S. military, the Family Advocacy Program is the organization that is primarily responsible for family violence prevention, identification, evaluation, treatment, and follow-up (Army Regulation 608-18). Each Army installation has a Family Advocacy Program which is staffed by clinical social workers, psychologists, and others who are involved with promoting the health and well-being of Army families.

To further enhance our knowledge concerning various patterns of family violence perpetration among military families, this study examines aspects of both spouse abuse and child

abuse among Army families, and describes several characteristics of the violence perpetrators. More specifically, this study compares three groups of Army soldiers who were substantiated as family violence offenders, namely, those who perpetrated spouse offenses only, those who perpetrated child offenses only, and those who perpetrated both spouse and child offenses. These three groups will be compared in terms of:

(1) the characteristics of the soldiers, including their sex, age, race/ethnicity, enlisted/officer status, Army pay grade, marital status, and whether or not they had been a victim of spouse abuse; and

(2) several aspects of the family violence perpetrated, including the number of substantiated incidents of family violence (a single incident vs. multiple incidents), the types of family violence offenses (neglect of children, emotional abuse, physical abuse, and/or sexual violence), and whether a fatality resulted from the violence.

MATERIALS AND METHODS

Data Source

The Army Central Registry provided the data for this study. This registry is a confidential electronic information system that is maintained by the U.S. Medical Command, with data provided by the Family Advocacy Programs. All reported cases of spouse abuse and child abuse are presented to a Family Advocacy Program's Case Review Committee, a multidisciplinary team of individuals who coordinates the assessment, intervention, and treatment of violence in Army families. The Case Review Committee conducts investigations of reported cases, documents the type of abuse that was perpetrated (i.e., emotional abuse, physical abuse, sexual abuse, and/or child neglect), and renders an opinion that either substantiates the case (i.e., determines that abuse occurred based on the preponderance of evidence) or does not

substantiate the case. All cases of child abuse and spouse abuse involving a soldier that are reported to the Case Review Committee, whether substantiated or unsubstantiated, are entered into the Army Central Registry database.

Study Sample and Variables

This report examines Army Central Registry data from a 5-year period between January 1, 2000 and December 31, 2004. All information was de-identified by Army personnel before it was provided to the research team to protect the confidentiality of the families. The analysis data set included records of substantiated incidents of familial spouse abuse and familial child abuse that were initiated by active duty Army soldiers during the five year study period (i.e., the analysis data set did not include abuse incidents that began before the 5 year study period, those in which someone other than a family member perpetrated the abuse, those in which the offender was not on active duty in the Army, or those that were not substantiated).

Several variables from the Army Central Registry are examined in this report. Of primary importance is the description of the substantiated family violence offense perpetrated by the soldier, namely, spouse abuse and/or child abuse. Spouse abuse is defined by the U.S. Army Family Advocacy Program as assault, battery, threats to injure or kill, any other unlawful act of force or violence, or emotional 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 (U.S. Army Community and Family Support Center, 1996). Thus, for spouse abuse to occur the partners must be married. Because the Army's Family Advocacy Program is designed to provide services to victims who are eligible for Army benefits, data concerning abuse against unmarried partners is not collected in the Army Central Registry database (U.S. Army, n.d.). Child abuse is considered to be physical harm, mistreatment, or injury of a child by

a parent, guardian, foster parent, or caregiver under circumstances indicating that the child's welfare is threatened or harmed (Army Regulation 608-18). For the purpose of this report, each of the family violence perpetrators were classified into one of three mutually exclusive groups based on their Army Central Registry records: (1) both spouse and child offender (which included soldiers who had at least one incident of substantiated spouse abuse and at least one incident of substantiated child abuse); spouse offender only (which included soldiers who had at least one incident of substantiated spouse abuse, but no substantiated child abuse incident); and child offender only (which included soldiers who had at least one incident of substantiated child abuse, but no substantiated spouse abuse incident).

This paper also examines an assortment of other variables. The characteristics of the soldiers who perpetrated the violence are examined, including their sex, age, race/ethnicity, enlisted/officer status, pay grade (classified as "lower" if the pay grade was E1 through E3, with these lower salary levels including enlisted personnel who are trainees or at the apprentice level, and "higher" if the pay grade was E4 or higher), marital status, and whether or not they had been a victim of spouse abuse within the five year study period (as documented in the Army Central Registry). Several aspects of the family violence are examined, including the number of days on which violence was perpetrated (i.e., a single incident being abuse that occurred on one day vs. multiple incidents being abuse that occurred on more than one day). In addition, the analysis examines the types of family violence offenses committed against the children and/or spouses (i.e., neglect of children, emotional abuse, physical abuse, and/or sexual abuse), and whether a fatality resulted from the abuse.

Data Analysis

Descriptive statistics, including percentages, means and standard deviations, were used to examine the characteristics of the study sample. Chi-square tests and analyses of variance were used to compare the three groups of family violence offenders (those who perpetrated both spouse and child offenses, those who perpetrated spouse offenses only, and those who perpetrated child offenses only) in terms of their sociodemographic characteristics and their experiences of having been a victim of spouse abuse. Relative risks (RRs) and 95% confidence intervals (95% CIs) were used to compare the groups of offenders in terms of their likelihood of perpetrating multiple incidents of abuse, various types of offenses (emotional, physical, sexual or neglect), and fatalities resulting from the violence. 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 by the U.S. Army Human Subjects Research Review Board, the Institutional Review Board of the Research Triangle Institute (RTI), and the Institutional Review Board of the School of Public Health at the University of North Carolina in Chapel Hill. All of these groups approved the study protocol.

RESULTS

The analysis data set included 10,864 Army soldiers who committed family violence offenses that were substantiated by the Family Advocacy Program. The most common pattern of family violence was spouse offender only, with 6,606 (or 60% of all offenders, 95% CI=59%-61%) falling within this category. The next most common pattern was child offender only, with 2,965 (28% of all offenders, 95% CI=27%-29%) having this pattern of family violence. Being both a spouse and child offender was the least common family violence pattern, with 1,293 (12% of all offenders, 95% CI=11%-13%) being in this category.

Table I shows that soldiers in each of the three patterns of family violence offender groups differed in terms of several characteristics. Five percent of the soldiers in the both spouse and child offender group were female, as were 5% of those in the spouse offender only group; however, 25% of the soldiers in the child offender only group were female. The race/ethnicity of the three groups differed, with soldiers in the child offender only group being somewhat more likely to be white (49%) compared to those in the spouse offender only group (42%) and those in the both spouse and child offender group (43%); furthermore, soldiers in the child offender only group were somewhat less likely to be Hispanic/Other (11%) compared to those in the spouse offender only group (15%) or those in the both spouse and child offender group (14%). Even though all three of the offender groups were comprised overwhelmingly of enlisted soldiers rather than officers, the percentage of enlisted soldiers was slightly greater in the spouse offender only group (98%) than in the child offender only group or in the both spouse and child offender group (96% in each). In addition, the percentage of offenders with a lower pay grade was greatest among those in the spouse offender only group (25%), followed by those in the both spouse and child offender group (22%), and finally those in the child offender only group (17%). Somewhat similarly, there was a greater percentage of younger soldiers in the spouse offender only group (51% were 25 years old or younger, with a mean age of 27), followed by the both spouse and child offender group (39% were 25 years old or younger, with a mean age of 28), and, lastly, the child offender only group (33% were 25 years old or younger, with a mean age of 30). As expected, the child offender only group was less likely to be married (86%) compared to the spouse offender only group (100%) or the both spouse and child offender group (99%).

Examination of the soldiers' histories of having been a victim of spouse abuse within the five year study period found that being a victim of spouse abuse was more common among each

of the groups who perpetrated spouse abuse compared to the group who did not perpetrate spouse abuse. More specifically, being a victim of spouse abuse was most common among those in the both spouse and child offender group (38%), followed by those in the spouse offender only group (32%), and lastly those in the child offender only group (8%).

Some of the family violence perpetrators had repeated incidents of substantiated spouse abuse or child abuse documented in the Army Central Registry during the five year study period, with the percentage of those with multiple incidents varying by the patterns of family violence perpetration. In particular, Table II shows that 21% of the group of soldiers who perpetrated both spouse and child offenses had multiple spouse abuse incidents, whereas only 11% of the group of soldiers who perpetrated spouse offenses only had multiple incidents; thus, those who committed offenses against both children and spouses were twice as likely to have multiple spouse abuse incidents compared to those who had only spouse abuse incidents (RR=2.00, 95% CI=1.76- 2.27). Fourteen percent of soldiers who committed both spouse and child offenses and 9% of soldiers who committed only child offenses had multiple incidents of child abuse; therefore, soldiers who committed both spouse and child offenses were approximately one and a half times more likely than soldiers who committed child offenses only to have multiple child offenses (RR=1.59, 95% CI=1.33, 1.91). A slightly greater percentage of spouse offenders committed multiple incidents of abuse compared to child offenders. In particular, approximately 12% of all spouse abuse perpetrators (including the 1,293 who committed both spouse and child offenses and the 6,606 who committed spouse offenses only) committed multiple spouse offenses, and approximately 10% of all child abuse perpetrators (including the 1,293 who committed both spouse and child offenses and the 2,965 who committed only child offenses) committed multiple child offenses.

Table III presents information concerning the types of family violence offenses perpetrated (neglect of children, emotional abuse, physical abuse, and/or sexual abuse) and whether the abuse resulted in a fatality. Emotional spouse abuse was fairly common, with soldiers who were both spouse and child offenders being almost twice as likely as soldiers who were spouse offenders only to have committed this form of abuse (26% vs. 14%; RR=1.88, 95% CI=1.68-2.10). Physical abuse was the most widespread form of spouse abuse; however, a smaller percentage of the soldiers who committed both spouse and child offenses committed this type of violence compared to the soldiers who committed only spouse offenses (84% vs. 91%; RR=0.92, 95% CI=0.90-0.95). Sexual spouse abuse was very rare, with similar percentages of soldiers who committed both spouse and child offenses and those who committed spouse offenses only perpetrating this type of abuse (0.7% vs. 0.6%; RR=1.12, 95% CI=0.55-2.30). Five spouse fatalities resulted from spouse abuse during the five year study period, all of which were committed by soldiers who perpetrated only spouse offenses.

A somewhat similar pattern of findings appeared when the types of child offenses and child fatalities were examined. Table III shows that neglect was the most common offense against children, with half of the soldiers who perpetrated both spouse and child offenses and approximately half of those who perpetrated only child offenses neglecting their children (50% vs. 48%; RR=1.03, 95% CI=0.96-1.10). However, soldiers in the both spouse and child offender group were almost four times more likely to have been emotionally abusive to their children compared to soldiers in the child offender only group (41% vs. 10%; RR=3.94, 95% CI=3.48-4.54). In contrast, physical child abuse was half as likely among the soldiers who were both spouse and child offenders compared to those who were only child offenders (20% vs. 40%; RR=0.50, 95% CI=0.45, 0.56). Although sexual child abuse was rare, it was much less likely

among those who committed both spouse and child offenses compared to those who committed only child offenses (1.6% vs. 8%; RR=0.18, 95% CI=0.13-0.31). Child offenses committed by 21 of the soldiers in the child offender only group resulted in the deaths of 22 children (i.e., 1 of the 21 soldiers killed 2 children), but no child deaths resulted from the child offenses perpetrated by the group who were both spouse and child offenders.

It is noteworthy that 21 (0.49%) of the total of 4,258 soldiers who committed offenses against children (including the 1,293 who committed both spouse and child offenses as well as the 2,965 who committed only child offenses) were responsible for the death of a child. In comparison, only 5 (0.06%) of the 7,899 soldiers who committed offenses against spouses (including the 1,293 who committed both spouse and child offenses as well as the 6,606 who committed only spouse offenses) were responsible for the death of a spouse. Thus, a greater percentage of the soldiers who committed offenses against children committed acts that resulted in fatalities compared to soldiers who committed offenses against spouses.

Although one (20%) of the 5 fatal spouse offenses was due to a soldier's second incident of spouse abuse (i.e., 4 of the spousal deaths were due to a soldier's first incident of spouse abuse noted within the Army Central Registry), none (0%) of the 21 fatal child abuse offenses were due to a soldier's second or later incident of child abuse (i.e., all of the deaths of children were due to a soldier's first incident of child abuse noted within the Army Central Registry).

DISCUSSION

This study found that the majority of soldiers who were substantiated family violence offenders documented in the Army Central Registry were spouse offenders who had not committed child abuse (60%), followed by child offenders who had not committed spouse abuse (28%), and finally those who committed both spouse and child offenses (12%). The much

greater percentage of spouse abusers compared to child abusers found among those substantiated for family violence is interesting given that similar percentages of active duty soldiers in the entire Army are married (52%) and have children (47%) (Military Family Resource Center, 2003). The 12% overlap in spouse and child offenses that was found in this study of Army soldiers is similar to that found in some investigations of family violence, including studies conducted with Army and civilian populations (Gelles & Straus, 1988; O'Keefe, 1996; Rumm *et al.*, 2000; Silvern *et al.*, 1995; Straus *et al.*, 1980), but less than that found in other civilian investigations (Edelson, 1999).

The three groups of family violence offenders (spouse offender only, child offender only, and both spouse and child offender) differed in several ways, with those who perpetrated only spouse offenses being more likely than offenders in the other two groups to be enlisted, of a lower pay grade, and younger. In contrast, those who perpetrated only child offenses were more likely than those in the other two groups to be female, white, of higher pay grade, older, and not married. The finding concerning marital status is likely due to the fact that the Army Central Registry dataset contains incidents of spouse abuse (namely, abuse by a person against his/her marital partner), but it does not contain information concerning abuse of non-married partners. In addition, the two groups of soldiers who perpetrated spouse offenses (including those who committed only spouse offenses and those who committed both spouse and child offenses) were more likely than those who perpetrated only child offenses to have been victims of spouse abuse. This finding is consistent with past research that has shown that spouse abuse perpetrators have often been victims of abuse perpetrated by their spouse (Caetano *et al.*, 2005; Caliber Associates, 1996; Capaldi & Owen, 2001; McCarroll *et al.*, 2004b; Straus *et al.*, 1980; Vivian & Langhinrichsen-Rohling, 1994).

Ten percent of the child abusers in this study had multiple incidents of substantiated child abuse. This level of repeated child abuse seen within this Army sample is somewhat similar to that found within civilian samples. For example, in one civilian study, 9% of males and 12% of females had a second occurrence of child maltreatment within 12 months of the first finding (Shusterman & Fluke, 2005).

Twelve percent of the spouse abusers in this study had multiple incidents of spouse abuse. Although there has been little comparison of military and civilian populations in terms of repeated spouse offenses, one such study found that active duty Army soldiers were less likely than civilians to have repeated substantiated incidents of spouse abuse (McCarroll *et al.*, 2000). One might expect that Army soldiers who are spouse abusers may be unlikely to re-offend for a number of reasons. For example, the Army provides therapeutic family violence services via the Family Advocacy Program. In addition, one might expect a lower level of repeat offenders seen within the Army's data since most enlisted soldiers only stay within the Army for a limited number of years; therefore, repeat incidents of family violence that occur after the soldier has been discharged from the Army would not be documented in the Army's Central Registry dataset. In fact, one study of spouse abuse in the Armed Forces found that 43% of the active duty offenders were separated from the military within three years of their initial offense (Caliber Associates, 1996). Another potential reason for the limited number of repeat family violence offenses found in the Army Central Registry may be because families may hesitate to report repeat incidents of violence knowing that such behaviors limit a soldier's career advancement in the Army.

Even though few of the offenders had multiple incidents of abuse, the soldiers who committed both spouse and child offenses were more likely than the soldiers who committed

spouse offenses only to have multiple incidents of spouse abuse. Furthermore, the soldiers who committed both spouse and child offenses were more likely than the soldiers who committed child offenses only to have multiple incidents of child abuse. The greater likelihood of repeated family violence in the group who committed both spouse and child abuse may indicate that these "double offenders" may have been more resistant to changing their behavior in spite of the interventions provided by the Army's Family Advocacy Program.

Several interesting findings were noted when the types of abuse offenses and the fatalities resulting from this violence were compared between soldiers in the three family violence groups. Soldiers who perpetrated only spouse abuse and soldiers who perpetrated only child abuse were more likely than soldiers who perpetrated both spouse and child abuse to commit physical abuse offenses, but were less likely to commit emotional abuse offenses. This pattern was seen for offenses against spouses and offenses against children. Somewhat similarly, sexual abuse (including child sexual abuse and sexual abuse perpetrated against a spouse) was more common among soldiers who committed only child offenses compared to those who committed both spouse and child offenses. Given these patterns of findings, and the finding that child neglect was similar between soldiers who committed both spouse and child offenses and those who committed child offenses only, it is understandable why all of the fatalities resulted from violence perpetrated by soldiers who committed spouse offenses only or child offenses only. It may be that soldiers who concentrate abuse on only their spouses or only their children may be more dangerous than those who are abusive to both their spouse and children.

Even though the majority of family violence offenses were for spouse abuse rather than for child abuse, fatalities due to family violence were four times higher among child victims than spouse victims. Because children are dependent on others and are less able to protect themselves

against abuse, it is not surprising that more deaths occurred among children. It is noteworthy that none of the deaths resulting from child abuse and only one of the deaths resulting from spouse abuse were the result of a soldier's second or later incident of family violence noted by the Family Advocacy Program. This may suggest that although the Family Advocacy Program cannot prevent all of the deaths due to family violence, the program may be effective in treating non-fatal family violence so that it seldom escalates to a fatal incident.

Caution is urged in interpreting these findings due to the methodological limitations of this research. Since many incidents of spouse abuse and child abuse go undetected and unreported, the estimates provided in this study based on substantiated abuse incidents recorded in the Army Central Registry are underestimates of the actual occurrence of family violence in Army families. This study examined only family violence perpetrated by Army soldiers and did not examine family violence perpetrated by the spouses of soldiers or other persons (e.g., violence by other family members against a child, etc.). Further, because these analyses focused on Army Central Registry data the results may not be generalizable to patterns of family violence in other branches of the military.

Despite these study limitations, these research findings may inform practice and policy making among those developing and providing family violence prevention and therapeutic services. Because the Army's Family Advocacy Program addresses both spouse and child abuse within a single service organization, it may be better positioned than civilian service delivery agencies to identify and address these two types of family violence. Variations in the characteristics of abuse perpetrators suggest a potential need for tailoring interventions specific to the perpetrators to facilitate the treatment of complex family problems and mitigate the impacts of abuse.

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TABLE I. Characteristics of Soldiers With Various Patterns of Substantiated Family Violence Offenses (Army Central Registry Data, January 1, 2000-December 31, 2004, n=10,864)

	Both Spouse and Child Offender	Spouse Offender Only	Child Offender Only	
	(n=1,293)	(n=6,606)	(n=2,965)	
	n (%)	n (%)	n (%)	*p*-value[a]
Sex				**<0.0001**
Female	62 (5)	348 (5)	755 (25)	
Male	1,230 (95)	6,242 (95)	2,207 (75)	
Race/Ethnicity				**<0.0001**
Hispanic/Other	181 (14)	1,006 (15)	337 (11)	
Black	559 (43)	2,793 (42)	1,182 (40)	
White	553 (43)	2,807 (42)	1,445 (49)	
Status				**<0.0001**
Enlisted	1,236 (96)	6,469 (98)	2,847 (96)	
Officer	57 (4)	137 (2)	118 (4)	
Pay Grade				**<0.0001**
Lower (E1-E3)	286 (22)	1,675 (25)	509 (17)	
Higher (E4 or more)	1,007 (78)	4,930 (75)	2,455 (83)	
Age Group				**<0.0001**
Younger (≤ 25)	507 (39)	3,380 (51)	965 (33)	
Older (> 25)	785 (61)	3,222 (49)	1,990 (67)	
Marital Status				**<0.0001**
Single	4 (<1)	0 (0)	191 (7)	
Married	1,280 (99)	6,606 (100)	2,495 (86)	
Divorced	3 (<1)	0 (0)	211 (7)	
Spouse Abuse Victim				**<0.0001**
Yes	485 (38)	2,132 (32)	240 (8)	
No	808 (62)	4,474 (68)	2,725 (92)	
	Mean (SD)	Mean (SD)	Mean (SD)	
Age	28 (6)	27 (6)	30 (6)	**<0.0001**

Note. Boldface type indicates statistically significant ($p < .05$) findings.

[a] *p*-values are based on chi-square tests for categorical variables and on an analyses of variance (ANOVA) of three groups for the continuous variable.

TABLE II. The Number and Percentage of Soldiers with Multiple Incidents of Substantiated Family Violence Offenses, Stratified by the Various Patterns of Family Violence (Army Central Registry Data, January 1, 2000-December 31, 2004, n=10,864)

	Both Spouse and Child Offender (n=1,293)	Spouse Offender Only (n=6,606)	
	n (%)	n (%)	RR (95% CI)[a]
Multiple Spouse Abuse Incidents[b]	276 (21)	705 (11)	**2.00 (1.76 - 2.27)**
	Both Spouse and Child Offender (n=1,293)	Child Offender Only (n=2,965)	
	n (%)	n (%)	RR (95% CI)
Multiple Child Abuse Incidents	177 (14)	255 (9)	**1.59 (1.33 - 1.91)**

Note. Boldface type indicates statistically significant ($p<.05$) findings.
[a] RR=relative risk. CI= Confidence Interval.
[b]Those classified as having multiple incidents include offenders who perpetrated violence on more than one day (i.e., they had 2 or more dates of incident reports in the Army Central Registry).

TABLE III. Number and Percentage of Soldiers with Various Types of Substantiated Family Violence Offenses and Fatalities that Resulted from the Offenses (Army Central Registry Data, January 1, 2000-December 31, 2004, n=10,864)

	Both Spouse and Child Offender (n=1,293)	Spouse Offender Only (n=6,606)	
	n (%)	n (%)	Relative risk (95% CI)
Emotional Spouse Abuse	335 (26)	910 (14)	**1.88 (1.68 - 2.10)**
Physical Spouse Abuse	1,185 (84)	6,013 (91)	**0.92 (0.90 - 0.95)**
Sexual Spouse Abuse	9 (0.7)	41 (0.6)	1.12 (0.55 - 2.30)
Spouse Fatalities	0 (0)	5 (0.07)	0.00
	Both Spouse and Child Offender (n=1,293)	Child Offender Only (n=2,965)	
	n (%)	n (%)	Relative risk (95% OR)
Neglect of Child	645 (50)	1,437 (48)	1.03 (0.96 - 1.10)
Emotional Child Abuse	532 (41)	310 (10)	**3.94 (3.48 - 4. 54)**
Physical Child Abuse	262 (20)	1,198 (40)	**0.50 (0.45 - 0.56)**
Sexual Child Abuse	21 (1.6)	244 (8)	**0.18 (0.13 - 0.31)**
Child Fatalities	0 (0)	21 (1)	0.00

Note. Some soldiers perpetrated more than one type of offense, so the percentages of the types of offenses may sum to more than 100%.
Note. Boldface type indicates statistically significant ($p<.05$) findings.

APPENDIX 2

REVISED STATEMENT OF WORK

Statement of Work
Revised 3/15/06

Spouse Abuse, Child Abuse and Substance Abuse among Military Families: Co-Occurrence, Correlates and Service Delivery Issues PR033161

Task	TIMEFRAME	STATUS
TASK 1. TO CONVENE A STUDY ADVISORY COMMITTEE	THROUGHOUT PROJECT.	ONGOING
***Task 2*. To conduct secondary analysis of Army data**	**Months 1- 34**	**Ongoing**
a. Obtain study approvals, military clearance, and Institutional Review Board clearance	Months 1-12.	Done
b. Develop analysis plan	Months 5-6.	Done
c. Access data	Month 13-21	Done
d. Link datasets	Months 15-26.	Ongoing pending resolution of data quality questions
e. Clean data files and create variables	Months 16-26.	
f. Conduct data analysis	Months 18-31.	Ongoing
g. Prepare papers and final reports	Months 21-34.	Ongoing
***Task 3.* To conduct a survey of Army service providers**	**Months 4-43**	**Ongoing**
a. Develop survey instruments	Months 4-12.	Done
b. Obtain Institutional Review Board clearance	Months 12-24.	Done
a. Program web survey	Months 19-22	Done
b. Pilot test instrument and make revisions	Months 25-28.	Ongoing
c. Identify final sample and update IRB clearances	Month 29.	
d. Conduct main survey	Months 30-32.	
e. Clean data and conduct analyses	Months 33-39.	
f. Prepare papers and final reports	Months 38-43.	

Task	TIMEFRAME	STATUS
***Task 4*. To conduct case studies at six Army installations**	**Months 6-42**	
a. Develop case study protocol	Months 14-17.	Done
b. Obtain Institutional Review Board clearance	Months 18-26	Ongoing
c. Plan and coordinate site visit	Months 25-27.	Ongoing
d. Conduct case study site visits	Months 28-31.	
e. Conduct analyses	Months 31-36.	
f. Prepare papers and final reports	Months 35-40.	
***Task 5.* To integrate findings across Tasks 2-4**	**Months 40-54:**	
a. Conduct additional analysis if necessary	Months 40-45.	
b. Prepare final recommendations, briefings to Army, and papers	Months 46-54.	