An Epidemiologic Investigation of Homicides at Fort Carson, Colorado: Summary of Findings

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ABSTRACT In response to an apparent clustering of homicides at Fort Carson, Colorado, the U.S. Army Public Health Command (formerly the U.S. Army Center for Health Promotion and Preventive Medicine) Behavioral and Social Health Outcomes Program conducted a multidisciplinary epidemiologic consultation to identify factors contributing to violent behavior among soldiers at Fort Carson. This article summarizes the findings of the epidemiologic consultation report as provided to the Secretary of the Army and the Fort Carson Senior Mission Commander and released in its entirety publicly July 2009 and elaborates on the mixed-methods analytic approach used to study a complex behavioral issue at the community level. To aid in answering the key study questions, six study arms were designed and carried out: (1) index case analysis, (2) confinee interviews, (3) analysis of installation-level trends, (4) retrospective cohort analysis, (5) soldier focus groups and interviews, and (6) aggression risk factors survey. Although not conclusive, the findings suggest a combination of individual, unit, and environmental factors converged to increase the risk of violent behaviors, which made clustering of negative outcomes more likely.

INTRODUCTION

In October 2008, the Commanding General at Fort Carson, Colorado, initiated a task force to investigate an apparent clustering of homicides and attempted homicides among soldiers currently or recently assigned to the Army installation. The Office of the Army Surgeon General and the U.S. Army Public Health Command coordinated a multidisciplinary epidemiologic consultation (EPICON). The U.S. Army Public Health Command (USAPHC) Behavioral and Social Health Outcomes Program conducted the investigation to (1) examine rates and trends in violent deaths involving Fort Carson soldiers (2005–2008); (2) identify risk factors associated with the violent deaths; (3) assess the adequacy of behavioral health (BH) programs, resources, and social support for soldiers in the units studied; and (4) recommend strategies to enhance current programs and reduce the installation’s incidence of violent death. This article summarizes the analytic methods and findings, with a focus on the mixed-methods analytic approach used to study a complex behavioral issue at the community level.

The impetus for the investigation was 8 homicides allegedly perpetrated from late 2007 through October 2008 by 6 Soldiers assigned to the same brigade combat team (BCT). A BCT is a modular, combined arms force capable of self-sustaining offensive, defensive, stability, and civil support operations. Its core mission is to close with the enemy by means of fire and maneuver to destroy or capture enemy forces, or to repel enemy attacks by fire, close combat, and counterattack. A BCT can fight without augmentation, but it also can be tailored to meet the precise needs of its missions. A typical BCT has 3,000 to 5,000 soldiers. An additional 6 homicides or attempted homicides were allegedly perpetrated by soldiers from Fort Carson between 2005 and 2008.

The investigation addressed the social environment in which they were perpetrated, and potential risk factors and experiences that may have influenced the homicide rate in this population. The investigation focused on common factors among homicide perpetrators, rates of violent or criminal behavior at Fort Carson, whether enlistment waivers were associated with any increase in violence, unique BCT characteristics that could account for increased aggressive behavior, and evidence of any relationship between deployment experiences and risk for aggressive behavior. The USAPHC scientific advisory committee determined this EPICON was a required public health investigation. Under the provisions of Army Regulation 40-5 (Preventive Medicine), USAPHC is the designated public health authority for the Army. Institutional Review Board approval was not required. Participation in surveys, focus groups, and interviews was optional.
METHOD
A mixed-methods approach, using quantitative and qualitative, individual, and population-level assessments, was used. Six study arms were carried out: (1) index case analysis, (2) confinee interviews, (3) installation-level trend analysis, (4) retrospective cohort analysis of the index BCT and a comparison BCT, (5) soldier focus groups and leadership interviews, and (6) development and administration of an aggression risk factors survey (ARFS) of current index BCT soldiers.

Index Case Analysis
Index cases were defined as any soldier assigned to Fort Carson (or departed from Fort Carson and discharged from service within 90 days) charged with homicide, attempted homicide, or accessory to homicide from January 1, 2005, through October 30, 2008. Fourteen soldiers were identified as index cases for the analysis. Demographic, medical, administrative, deployment, and legal information on the index cases was obtained. These data allowed for detailed examination of medical diagnoses, negative behaviors, misuse of alcohol/illicit drugs, administrative and legal actions, and deployment experiences.

Confinee Interviews
Interviews were conducted with 9 of 14 index cases who were incarcerated and consented to be interviewed during the EPICON. Since many confinees were still involved in the judicial process or pending an appeal, measures were taken to ensure confidentiality and ethical treatment. All interviews were conducted by the EPICON team social worker/forensic psychiatrist. A standardized script and series of questions were developed and used during the interviews. Questions were drafted so as NOT to ask about specific alleged crimes. At the beginning of each interview, the interviewers identified themselves, emphasized they did NOT want to know anything about the index case’s alleged crime(s), and described the intent of the interview was to obtain better understanding of the index case’s experiences and general thoughts regarding soldier support, deployment experience, and command climate in order to improve things in the Army. The index cases were told the interview was voluntary, they could refuse to participate outright and refuse to answer any particular question, and/or they could terminate the interview at any time. All interviews were carried out in private. In two instances, the confinee’s legal counsel was present in the interview. Most interviews were 60 to 90 minutes.

Installation-Level Trend Analysis
A population-level analysis was conducted to identify trends of risk factors related to aggression and violence in the Fort Carson community. When possible, data from Fort Carson were compared with other “power-projection” installations (of similar size and mission) and/or the overall Army to assess whether observed trends were common or unique to Fort Carson. Installation-level data included: major crime charges and/or arrests (i.e., murder, rape, aggravated assault, aggravated sexual assault, and arson); suicides; Reintegration Unit Risk-Inventory measures that screen for high-risk behaviors and attitudes affecting military unit readiness and individual well-being; rates of mental health diagnoses; and mental health service utilization (both at installation medical facilities and through TRICARE network sources).

Retrospective Cohort Analysis of Index and Comparison BCTs
A retrospective cohort analysis was conducted to assess differences in the rate of exposures and mental health outcomes between the index BCT from which the majority of the perpetrators came and another Fort Carson BCT with a similar number of Iraq combat-deployments. To assess the potential cumulative effect of deployments and the pace of training for combat on the outcomes of interest as well as the effect of enlistment waivers, demographic, medical, deployment, and associated enlistment records were obtained for 20,737 soldiers assigned to the two BCTs from 2003 to October 2008 (date of most recent homicide). Two types of comparative analyses were conducted: (1) an overall comparison of data from all soldiers within the index BCT to another BCT at Fort Carson and (2) a time phased comparison before, during, and after deployment for all soldiers who previously deployed with the BCTs. T-test and z-test statistics were calculated to estimate whether mean values and proportions within and between the two populations were significantly different (p < 0.05). Adjusted relative risks were calculated, using generalized linear mixed modeling to account for the hierarchical nature of the data, to assess the association between enlistment waivers and subsequent negative behavioral outcomes (alcohol/drug problems, domestic abuse, or attrition from Army).

Soldier Focus Groups and Leader Interviews
Focus groups were conducted using semistructured interview guides with soldiers across rank groups and battalions in the index BCT to obtain a detailed understanding of current perceptions and attitudes. BCT leadership assisted with recruitment by randomly selecting soldiers to participate. Before beginning, all soldiers were provided an overview of the purpose by the facilitators and had the option to decline to participate. Fifty-nine focus groups were conducted anonymously with 402 soldiers (~15% of index BCT soldiers). Most groups consisted of 8 to 10 soldiers; however, group sizes ranged from 2 to 15 soldiers. Groups were conducted with ranking soldiers. Conducting groups with junior- and senior-enlisted soldiers together can be problematic because junior enlisted are less likely to report opinions differing or contradicting senior enlisted, and junior enlisted may be less likely to report information that could...
result in trouble for themselves or fellow soldiers. All groups were asked similar questions pertaining to awareness and utilization of BH resources, command climate, discipline standards, quality of soldiers currently joining the Army (i.e., how new soldiers compare to past soldiers), perceptions of the increase in homicides, and considerations for change (i.e., what they would recommend to reduce unit risk). BCT leaders and mental health service providers were interviewed individually or in small groups to ensure their information was completely captured and to ensure their influence would not bias soldier groups. Data was analyzed by two analysts, using the constant comparison method, whereby major themes were extracted and compared across rank groups and battalions to determine whether there were any similarities or differences in the strength and interpretation of the group composition themes.

The Aggression Risk Factors Survey

The ARFS was developed for this EPICON to assess the experiences, attitudes, and climate of the index BCT population with whom many perpetrators served. Previously, validated scales were included, to the extent possible. Domains for the questionnaire items were based on main contributory factors of criminal behavior, including mental illness, criminal/violent history, alcohol abuse, and antisocial attitudes. Attitudes toward noncombatants and improper behaviors during deployment that could indicate the construct of antisocial/social attitudes were measured using a scale adapted from the U.S. Army Mental Health Advisory Team. Demographic (i.e., gender, age, race/ethnicity, education level, current marital status) and military (i.e., years in the military, rank, Army enlistment waivers, and deployment history) characteristics were assessed.

A modified version of the Revised Conflict Tactics Scale (CTS2) was used to assess minor and severe physical aggression among both married and single soldiers. This scale was used according to strict licensing agreements. (Material from the CTS2 copyright 2003 by Western Psychological Services. Adapted and reprinted by the U.S. Army Public Health Command, for use in specific investigation under license of the publisher, Western Psychological Services [WPS]. 12031 Wilshire Boulevard, Los Angeles, California 90025, U.S.A. [rights@wpspublish.com]. No additional reproduction, in whole or in part, by any medium or for any purpose, may be made without the prior, written authorization of WPS. All rights reserved.) The Post-Traumatic Growth Inventory was included to quantify positive experiences following deployment such as spiritual change, personal strength, relating to others, appreciation for life, and new possibilities.

Population responses to a 15-item combat experience survey were categorized into tertiles to include a third of the deployed population within each level to approximate combat intensity: low (0–4), moderate (5–8), and high (9–15) number of combat experiences. Logistic regression modeling, adjusting for potential covariates using stepwise backward deletion of the least significant factors, was used to assess the association between cumulative combat experiences and negative behavioral outcomes (i.e., aggression [dichotomized into the highest 25% of scores or not]; problematic alcohol use [yes or no]; criminal conviction [yes or no], mental health problems [yes or no], and physical altercation with a significant other [yes or no]).

RESULTS

Index Case Findings

Of the 14 index cases, 10 involved Fort Carson soldiers charged with homicide, 2 charged with attempted homicide, and 1 charged as an accessory to homicide. One individual committed homicide followed by suicide, thus was never charged. Commonalities identified among the index cases included: military unit of assignment, deployment/combat exposure, military occupational specialty, and behavioral risk factors. Ten of 14 index cases were assigned to the index BCT, and 6 were assigned to a specific infantry battalion within the index BCT. Twelve of 14 index cases, including all 10 of those assigned to the index BCT, were deployed at least once to Iraq and were assigned to a unit that experienced higher levels of combat intensity than other units deployed from Fort Carson as indicated by a comparison of combat casualties.

Six of 12 index cases who deployed returned home early from deployment [for combat injuries (1), suicide attempt (1), suicidal ideation (1), misconduct (2), and family reasons (1)] and did not receive standard Army reintegration training. This training is completed after deployment, but before soldiers going on postdeployment leave, and consists of multiple classroom sessions intended to assist soldiers in their transition from combat to home and to help identify individuals at risk for subsequent medical and behavioral problems. Five cases received an enlistment waiver for otherwise disqualifying conditions [related to prior criminal or drug/alcohol related charges (3) and medical conditions (2)]. Behavioral risk factors were prevalent among index cases, including alcohol/substance abuse history (79%), mental health diagnoses (71%), and criminal activity while in the military (79%) (Table I).

Based on aggregate population data comparisons, before perpetrating the alleged crimes, index cases were at higher risk for clustering of negative behavioral outcomes (mental illness, criminal history/past history of violence, and substance abuse) compared with the overall index BCT. Fifty-seven percent (8 of 14) of index cases had documentation of all 3 major risk factors, significantly more (p < 0.05) than soldiers from the BCT completing the survey (4.7%). Index cases were more likely to exhibit both criminal behavior and at least one other negative behavioral risk factors (i.e., alcohol or drug abuse, mental health disorder, domestic violence) than other soldiers who deployed with the BCT.
Confinee Interviews
Most confinees interviewed reported significant combat exposure, and more than half reported witnessing unethical conduct while in Iraq. Upon returning home, they reported struggling with the consequences of what had occurred in Iraq—both psychologically and morally. They felt “naked”/unsafe without a weapon and consequently carried weapons around with them. Many reported drinking, taking illegal drugs, or misuse of prescription medications as a coping mechanism. Many of the confinees reported efforts to self-medicate only complicated their problems and, in some cases, made getting help more difficult. Many reported not transitioning well from combat to home—particularly when it came to shifting roles and conventions. As one confinee put it, “There [in Iraq] we were the law; here the cops are the law.” The confines reported mixed support from command and peers for getting help, but on the whole, command and peers did not promote help-seeking. In some cases, leadership verbally supported help-seeking, but their actions contradicted their message and ultimately discouraged help-seeking. The perception of the confinees, on the whole, was that they came home to a BH system overwhelmed, severely short-staffed, fragmented, and poorly organized. To the confines who did engage the BH system, the system seemed chaotic, sporadic, and uncaring.

Installation-Level Trends
Although the rates of arrests for major crimes (i.e., murder, rape, aggravated assault, aggravated sexual assault, arson) increased across the Army and comparison installations from 2003 to 2008, the rate of arrests for major crimes was higher at Fort Carson than comparison installations in 2007 (~14 per 10,000 vs. ~9 per 10,000) and 2008 (~23 per 10,000 vs. 14 per 10,000). The average number of murders doubled from 2 to 4 per year at Fort Carson from 2003–2006 to 2007–2008, but murder remained a rare event in this population of nearly 18,000 soldiers. Murder rates based on small counts may reflect random variation rather than statistical significance.

Combat Deaths and Experiences
Based on combat death data, soldiers deployed with the index BCT generally experienced greater combat intensity than soldiers deployed with the comparison BCT (Table II). As observed in the retrospective cohort study, soldiers in the index BCT experienced higher levels of postdeployment mental health problems, traumatic brain injury (TBI), and positive tests for illicit drug use than soldiers in the comparison BCT (Table III).

Based on responses from the ARFS, increasing levels of self-reported combat intensity were significantly associated with increased odds for self-reported aggression, problematic alcohol use, criminal convictions, mental health problems, and physical alterations with a significant other (Table IV).

Drug and Alcohol Abuse
Soldier focus groups revealed a strong theme of alcohol/drug use to “self-medicate”; soldiers perceived inconsistent discipline for substance abuse, positive drug tests, and misconduct. On the ARFS, previously deployed soldiers reported higher levels of problematic alcohol use than soldiers never deployed. Cohort data revealed many soldiers in both the index and comparison BCTs who tested positive for illicit drugs never received required Army Substance Abuse Program screening (20% were screened within 30 days and 60% within 180 days).

Enlistment Waivers
The proportion of soldiers receiving enlistment waivers of any type for otherwise disqualifying conditions increased from 2003 to 2007 across the Army and among soldiers assigned to both BCTs. No difference was evident, however, in the proportion of soldiers with moral waivers (i.e., a waiver granted for behavioral, drug, and/or legal actions) between the index and comparison BCTs. Soldiers from both BCTs granted a waiver for alcohol/drugs or serious nontraffic offenses were approximately 2 to 3 times more likely to later test positive for illicit drugs and were significantly more likely to be discharged from the Army for misconduct and/or military violations (Table V). Examples of serious nontraffic offenses include conviction or adverse disposition for carrying of weapon on school grounds; an act of violence including threats against any school faculty members; domestic battery/violence not resulting in a qualifying Lautenberg conviction.

<table>
<thead>
<tr>
<th>TABLE II.</th>
<th>Comparison of Combat Death Rates (per 1,000) by Deployment for the Index BCT and a comparison BCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battle-Related Deaths</td>
<td>Index BCT</td>
</tr>
<tr>
<td>Deployment A</td>
<td>23.2</td>
</tr>
<tr>
<td>Deployment B</td>
<td>13.0</td>
</tr>
</tbody>
</table>

Data Source: Unit Casualty Rosters, Fort Carson. *p < 0.001 for difference between BCTs for both deployments.
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**TABLE III.** Description of Mental Health Diagnoses, Substance-Related Disorders, and TBI for Soldiers by BCT and Deployment (Rates/10,000 Soldiers)

<table>
<thead>
<tr>
<th></th>
<th>Index BCT</th>
<th></th>
<th></th>
<th>Comparison BCT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deployment A</td>
<td>Deployment B</td>
<td>Deployment A</td>
<td>Deployment B</td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Any MH Diagnosis</td>
<td>258.2</td>
<td>2515.0*</td>
<td>2009.5</td>
<td>4087.3</td>
</tr>
<tr>
<td>Acute Stress</td>
<td>7.5</td>
<td>269.5*</td>
<td>95.0</td>
<td>187.0</td>
</tr>
<tr>
<td>PTSD*</td>
<td>11.2</td>
<td>621.3*</td>
<td>118.7</td>
<td>780.6</td>
</tr>
<tr>
<td>Anxiety Disorders, Not PTSD</td>
<td>18.7</td>
<td>160.9*</td>
<td>65.3</td>
<td>374.0</td>
</tr>
<tr>
<td>Adjustment Disorder</td>
<td>104.8</td>
<td>434.1*</td>
<td>270.1</td>
<td>875.6</td>
</tr>
<tr>
<td>Mood Disorder</td>
<td>67.4</td>
<td>505.2*</td>
<td>270.1</td>
<td>572.9</td>
</tr>
<tr>
<td>Substance-Related Disorders</td>
<td>44.9</td>
<td>632.5*</td>
<td>382.9</td>
<td>418.5</td>
</tr>
<tr>
<td>TBI</td>
<td>11.2</td>
<td>250.7*</td>
<td>95.0</td>
<td>1392.1</td>
</tr>
</tbody>
</table>

Postdeployment data reflects diagnoses in the 6 months following redeployment. A focused study of TBI in the index BCT following their first deployment may have resulted in a disproportionate number of TBI diagnoses. *p < 0.01 comparing diagnosis rates during pre- and postdeployment periods between the 2 BCTs. "Post-traumatic stress disorder (PTSD)."

**TABLE IV.** Adjusted Odds Ratios (aOR) for the Association Between Self-Reported Combat Intensity and Behavioral Outcomes Among Soldiers Who Completed the Aggression Risk Factors Survey (n = 2,775)

<table>
<thead>
<tr>
<th></th>
<th>Minor Agression†</th>
<th>Major Agression‡</th>
<th>Problematic Alcohol Use§</th>
<th>Criminal Conviction¶</th>
<th>Self-Reported BH Problem¶</th>
<th>Physical Alteration w/Sig Other¶</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% aOR</td>
<td>% aOR</td>
<td>% aOR</td>
<td>% aOR</td>
<td>% aOR</td>
<td>% aOR</td>
</tr>
<tr>
<td>Never Deployed</td>
<td>24.1</td>
<td>14.6</td>
<td>2.1</td>
<td>19.0</td>
<td>5.9</td>
<td>—</td>
</tr>
<tr>
<td>Low Intensity</td>
<td>18.0</td>
<td>13.7</td>
<td>3.9</td>
<td>26.8</td>
<td>10.7</td>
<td>1.81*</td>
</tr>
<tr>
<td>Moderate Intensity</td>
<td>22.8</td>
<td>16.8</td>
<td>4.0</td>
<td>33.3</td>
<td>8.4</td>
<td>1.35</td>
</tr>
<tr>
<td>High intensity</td>
<td>30.7</td>
<td>26.3</td>
<td>6.8</td>
<td>48.4</td>
<td>13.1</td>
<td>2.30*</td>
</tr>
</tbody>
</table>

Aggression Risk Factors Survey (n = 2,775). *p < 0.05. **Odds Ratios (aOR) adjusted for race/ethnicity, grade/rank, education, marital status, and served in infantry battalion. †Combat intensity based on number of events encountered on deployments (15-item scale). ‡Modified CTS2, 2003, WPS, within past 12 months. §RAPS4 2 or more affirmative responses. ¶Any after joining Army. ¶Any in lifetime.

**TABLE V.** Adjusted Relative Risks (RR) for Negative Outcome among Soldiers Receiving Enlistment Waivers

<table>
<thead>
<tr>
<th></th>
<th>Any Waiver</th>
<th>Alcohol/Drug Waiver</th>
<th>Serious Nontrafic Waivers§</th>
<th>Multiple Waivers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RR</td>
<td>RR</td>
<td>RR</td>
<td>RR</td>
</tr>
<tr>
<td>Positive test for illicit substance</td>
<td>1.41*</td>
<td>3.31*</td>
<td>1.83*</td>
<td>2.17*</td>
</tr>
<tr>
<td>Attrition for misconduct/UCMJ</td>
<td>1.61*</td>
<td>2.87*</td>
<td>1.36</td>
<td>2.00*</td>
</tr>
</tbody>
</table>

*p < 0.05. *Adjusted for sex, race/ethnicity, home of record, marital status, age, grade, time in service, battalion, and brigade. †Examples of serious nontrafic offenses include conviction or adverse disposition for carrying of weapon on school grounds; an act of violence including threats against any school faculty members; domestic battery/violence not resulting in a qualifying Lautenberg conviction (Public Law 104-208, 1996; 18 USC, Section 922, 1996); conviction or other adverse disposition for driving while intoxicated, driving under the influence or driving while impaired; and possession of marijuana or drug paraphernalia.

**Behavioral Health Resource Utilization**

Postdeployment utilization of mental health resources by soldiers at Fort Carson increased from around 300 medical encounters for a BCT following combat in 2004 to more than 1,000 for a BCT following combat in 2008; however, the overall mental health staffing at the hospital on Fort Carson from 2006 to 2008 was at 65% of authorized positions. From 2004 to 2008, approximately 50% of outpatient mental health care received by Fort Carson soldiers shifted from military treatment facilities to off-post purchased-care network, reflecting efforts to establish linkages with civilian providers to meet demand for services. Soldiers and unit leaders who participated in focus groups reported difficulty accessing mental health services at Fort Carson and perceived an over-reliance on pharmacotherapy, particularly from military providers.

**Stigma Regarding Mental Health**

Stigma, a key barrier to seeking mental health care, was reported differently across the ranks of soldiers during focus...
groups. Junior-enlisted soldiers from the index BCT reported being viewed as “weak” or labeled “bad soldiers” by peers if they sought mental health care or received mental health diagnoses. Some junior-enlisted soldiers reported during focus groups, “Senior NCOs were the main ones who create stigma.” Senior-enlisted soldiers and officers reported concerns that seeking mental health care would negatively impact their career. One senior-enlisted soldier reported, “If you go to see someone, you’re committing [career] suicide.”

Peer perceptions and personal factors were reported at least as important in perpetuating stigma as leadership issues. The junior-enlisted groups expressed fear of retaliation for seeking mental health care (i.e., being ridiculed or treated differently by unit leaders and fellow soldiers). One junior-enlisted soldier reported, “the mentality here is that you deal with it.” They also perceived a lack of confidentiality when using military providers because of information being shared with/ by unit leaders. Senior-enlisted groups reported concerns seeking mental health care would reflect negatively on their leadership abilities. One senior-enlisted soldier reported, “seeking help is even more difficult for senior enlisted because others think they can’t lead.”

DISCUSSION

Soldiers allegedly involved in crimes related to homicide at Fort Carson (2005–2008) were, in retrospect, at risk for engaging in violent behavior based on a clustering of known risk factors for violence. These included prior criminal behavior and psychopathology (particularly, alcohol/drug disorders, mood disorders, and anxiety disorders). Similar results have been reported among civilian populations. Nearly 80% of the alleged perpetrators had documented alcohol/drug abuse problems, yet less than half of those individuals had evidence of receiving alcohol/drug treatment. Over 80% of those with alcohol/drug abuse problems were charged for criminal activity or misconduct while in the military (before the alleged homicide), by civilian law enforcement or the Uniformed Court of Military Justice, and, therefore, were at particularly high risk for continued criminal and/or violent behavior. The index BCT, however, did not have a higher proportion of individuals with psychopathologic risk factors than the comparison BCT; thus, those risk factors alone do not entirely explain the apparent clustering of crime in this population.

Alleged perpetrators were clustered within a single BCT at Fort Carson and within a particular infantry battalion. No demographic or individual level risk-factor characteristics of the two BCTs or infantry battalion within the index BCT accounted for the observed difference in criminal behavior. The index BCT and the infantry battalion experienced significantly higher levels of combat intensity than the comparison BCT and the comparison battalion. Data suggests a possible association between increasing levels of combat exposure and risk for negative behavioral outcomes. These findings are consistent with recent research on combat exposure and subsequent behavioral outcomes among soldiers. One model of aggression suggests aggressive impulses are expressed as overt aggressive behaviors mitigated by “amplifiers” and “attenuators,” which increase and decrease the probability of aggressive behavior, respectively. In the present study, amplifiers could include combat experiences/intensity and stigma with seeking help for mental health problems; attenuators could include the close social structure of military units, availability of medical and mental health care, and unit cohesion. In the context of this framework, the findings might suggest soldiers in the index BCT and battalion experienced more “amplifiers” and fewer “attenuators” than soldiers in other units, perhaps driven by differences in combat experiences/intensity and stigma related to seeking care for mental health problems.

Analysis of enlistment waiver data did not demonstrate a significant association between waivers and the clustering of homicide in the index BCT. Although 3 of the index cases received an enlistment waiver (21%) for moral issues, there was no difference in the proportion of soldiers with moral enlistment waivers between the two BCTs. Approximately 14% of total U.S. Army accessions were granted moral enlistment waivers during 2007–2008 (USAREC Waivers [by Component] Briefing, Army G-1, Department of Military Personnel Management, EOM February 2009). Soldiers from the index and comparison BCTs, however, who received enlistment waivers for alcohol/drugs were more likely to be discharged from the Army for misconduct and/or military violations.

Similar character traits may exist between developmental pathways leading to aggression and the types of misconduct covered by moral enlistment waivers granted to U.S. Army recruits. If true, soldiers with known criminal activity (before or during enlistment) may represent a population with higher preexisting risk factors for negative behaviors, including substance abuse and propensity for rule-breaking behavior. Preexisting risk factors may play a greater role than exposure to combat stress in the expression of antisocial behavior, and the existence of multiple comorbid risk factors in individuals may pose the greatest risk for potential expression of violent behavior. Soldiers exposed to a multitude of environmental and occupational stressors are at increased risk for development of mental health problems. The diathesis–stress model, which postulates stressful situations can activate a diathesis, transforming potential biologic predispositions into the presence of psychopathology, may explain how preexisting factors and events experienced in childhood/early life can be triggered by stressful situations and manifested as negative behavioral outcomes among soldiers during and following intense combat experiences. An increase in the proportion of soldiers with a high risk for negative behavioral outcomes, in conjunction with unit and/or environmental risk factors, may increase overall population risk, resulting in a population with a higher likelihood...
of violent outcomes. Based on these results, it is plausible that multiple factors converged to increase overall population risk in the index BCT as a function of increased risk among individuals in combination with unit/environmental factors, thus increasing the likelihood for a clustering of negative behavioral outcomes within the BCT.

This EPICON was conducted under a compressed 90-day schedule. Some limitations should be considered when interpreting the results. Foremost, risk factors identified in the 14 index cases may not be representative of all Army homicide perpetrators. The results from the BCT comparison are based on characteristics of soldiers in two units, one of which experienced a unique set of deployment circumstances and an unexpected clustering of violent crime. Results from the comparison study, focus groups, and survey are likely not representative of the overall Army. Information collected through surveys and focus groups is based on self-reported measures and perceptions, and although soldiers were assured their responses would be kept confidential, we cannot guarantee all soldiers answered completely and honestly for fear of repercussion or stigmatizing beliefs. The cross-sectional nature of the survey data does not allow for making causal inferences.

Comparison data that could provide further context for all measures was not available at the time of the study. It was not possible to obtain the percent of U.S. Army soldiers returning from deployment early that completed reintegration training. Typically, the completion status of reintegretion training is tracked for all soldiers returning from deployment by their respective units; however, it is less clear whether completion status is tracked as individual soldiers return from deployment early. Each Army installation is unique and caution should be used when interpreting installation comparisons. In spite of these limitations, this EPICON represents a unique mixed-methods approach to studying complex behavioral issues at the community level and the most in-depth recent examination of violent crimes in an Army unit.

Before the conclusion of this EPICON, Fort Carson started addressing many issues identified. Fort Carson’s Evans Army Community Hospital increased staffing and implemented BH outreach and mobilization teams to address many issues described, and also provided dedicated BH assets at the BCT level. Other ongoing/current actions to address issues identified include: enhanced reintegration training for redeployed soldiers; mental toughness training for deploying units; increased utilization of installation prevention team to help Command identify trends, soldier care issues, and treatment options; and innovative efforts to improve the Soldier Readiness Processing process by using screening methods that overcome soldiers’ reluctance to truthfully report symptomology.

Although not conclusive, the findings suggest a combination of individual, unit, and environmental factors converged to increase population risk in the index BCT, which increased the likelihood for clustering of negative behavioral outcomes. Accumulated risk based on individual predisposing factors may increase overall population-level risk for negative outcomes. The overall risk is best impacted by population-based mitigation programs, while maintaining strategies to effectively identify and intervene with individual soldiers. Mitigating strategies are suggested, which decrease both individual and population-level risk, such as improved screening and case-management to identify and follow-up with high-risk soldiers and units; elimination of barriers to substance abuse and mental health treatment; expedited processes for providing treatment and/or military discharge when appropriate; enhanced resources/training for small-unit leaders; and improved social support programs for soldiers and their families.

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