Will You Die for Your Country? Workplace Death in an Era of Mass Incarceration

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ABSTRACT (199/200 Words)

People with criminal records in the United States continue to face limited employment opportunities due to social stigma and legal barriers. In contrast to the civilian sector, the military conducts a “whole person” evaluation to screen potential recruits and regularly hires people with felony and misdemeanor records. Moreover, evidence suggests that the military serves as a socially integrative institution and may facilitate desistance from future crimes. However, critics argue that the military exacerbates inequalities by subjecting marginalized communities to the unequal burden of service. Using the data obtained from the Army, we examine the relative risks of combat exposure and casualties between enlisted soldiers with and without criminal records who joined between 2002 and 2009. The results suggest that soldiers with felony and misdemeanor records are more likely to be assigned to combat occupations than those without criminal records. We also find that among soldiers assigned to positions with low combat exposure, ex-offenders face a higher risk of death compared to those without criminal records. Findings do not dispute the idea that the military facilitates desistance from future crimes and provides second chances to people with criminal records, but reaffirm the fact that military service costs lives and limbs.

KEYWORDS: criminal records, military, inequality, workplace fatalities
INTRODUCTION

The collateral consequences of criminal convictions can result in a “civil death,” or the loss of all political, civil and legal rights, barring them from receiving social assistance and participating in civic activities (Ewald 2002; Pinard 2010). Disenfranchisement of people who come into contact with the criminal justice system in the labor market is well documented (Apel and Sweeten 2010; Pager 2003, 2007; Pager et al. 2009; Western 2007), even without a charge (Harris and Keller 2005; Pager 2006; Raphael 2006; Stoll and Bushway 2008; Uggen et al. 2014). In a sharp contrast, the U.S. Armed Forces conducts a “whole person” evaluation to screen potential recruits and regularly hires people with felony and misdemeanor records (Boucai 2007). Given many ex-offenders are unemployed or underemployed (Nally et al. 2011; 2013), the stable employment, competitive pay, and comprehensive benefits offered by the military are remarkable.

However, military service carries serious risks of injury, adverse mental and cognitive outcomes, and even death (Burk and Espinoza 2012; MacLean and Elder 2007), and the risks of military enlistment, combat assignment and death are not equally distributed across the pool of able-bodied men and women (Gifford 2005; Han 2018; Kleykamp 2006; Lundquist et al. 2018; MacLean 2011). Particularly worrisome is the “cannon fodder” allegation that those from lower socioeconomic backgrounds with limited employment prospects disproportionately shoulder the burden of combat (Armor 1996; MacLean 2011; MacLean and Parsons 2010), because ex-offenders tend to have less education, limited job prospects, and unstable work histories (Greenberg et al. 2007a; Harlow 2003; Nally et al., 2011; 2013; Pompoco et al. 2017). Although preliminary, Lundquist, Pager, and Strader (2018) find higher death rates among ex-felons, but they were unable to say conclusively whether the disparity was due to inequality in combat assignment.
This article follows up on an important yet preliminary observation by Lundquist et al. (2018) suggesting a possible correlation between combat assignment and higher death rates observed for ex-felons in the military. Using the data obtained from the Department of Defense, this paper identifies dangerous Military Occupational Specialties (MOSs) and analyzes relative risks of combat assignment, disability and death between enlisted soldiers with and without criminal records who joined the Army between 2002 and 2009. By sorting through hundreds of MOS codes, this paper provides evidence that those with felony and misdemeanor records are significantly more likely to hold jobs with high combat exposure than those without such records. Overall, higher combat exposure is associated with higher risks of death and disability overall, but the results also suggest that ex-felons face an elevated risk of death compared to those without criminal records when their occupations are not indicative of combat.

What would explain these findings? Perhaps higher risks of death and disability observed for ex-felons with low combat exposure may reflect risk-seeking tendencies of ex-offenders (Gottfredson and Hirschi 1990). Based on the evidence that high-risk youths who are alienated from the legitimate sector join drug-selling street gangs and are willing to accept a risk of death for their survival (Levitt and Venkatesh 2000), one could deduce that a combination of structural and individual factors explain this mortality gap. The broader implications of this study are that because criminal records mark a disadvantage in the civilian world (Pager and Shepherd 2008; Pager et al. 2009; Travis et al. 2014; Wakefield and Uggen 2010), even if the military encourages social integration and desistance from future crimes (Bouffard, 2005, 2014; Brooke and Gau 2018; Greenberg et al. 2007b; Lundquist et al. 2018; Teachman and Tedrow 2016), we cannot ignore the grim reality that a second chance in the military may come with elevated risks of death and disability for ex-offenders.
A SECOND CHANCE IN THE MILITARY

By 2010, over 19 million adults had felony convictions and 7.3 million had been incarcerated at some point in their lives (Shannon et al. 2017). When we include people with arrest records, the number of state and federal criminal history files exceed 110 million as of 2016 (Bureau of Justice Statistics 2018). Joining the licit labor market is a key aspect of reintegration because employment following incarceration has been shown to reduce recidivism (Berg and Huebner 2011; Laub and Sampson 2003; Sampson and Laub 1993; Uggen 2000). However, formerly-incarcerated individuals tend to have limited education and work experience prior to incarceration (Greenberg et al. 2007b; Harlow 2003; Nally et al. 2013; Pompoco et al. 2017), and a combination of stigma and legal barriers discourage potential employers from hiring applicants with criminal records (Harris and Keller 2005; Holzer et al. 2004; May 1995; Pager 2007). Legal disenfranchisement of ex-offenders, a condition referred to as “civil death,” adds to the challenge (Ewald 2002; Pinard 2010).

Being largely excluded from the labor market, many ex-offenders find employment at the lowest-tier segments of the economy, “where jobs are precarious, working conditions are perilous, violations of labor laws are pervasive, and wages are paltry (Purser 2012:400).” Beyond the temporary services sector, post-release employment is concentrated in low-wage labor intensive industries such as the accommodation, food services, and retail trade sectors (Lichtenberger 2006; Nally et al. 2014). Employers are less willing to hire people with criminal records if the job requires frequent contact with customers, but are more willing to hire in industries such as manufacturing, construction, and transportation (Holzer et al. 2003). Professional industries that offer higher pay, job stability, and benefits rarely hire ex-offenders because they require credential verifications and background checks (Lichtenberger 2006).
Against this backdrop, the U.S. military stands out for its willingness to recruit and hire ex-offenders (Boucai 2007). Federal law prohibits enlistment of people with a felony conviction (10 USC §504), but a waiver can be granted on meritorious basis if the applicant’s character or suitability for enlistment can be proven based on information about the “who, what, when, where, and why (p.11)” of the offense in question (Department of Defense 2018b). During World War II, it became possible and even acceptable for probation and parole officers, as well as the court, to recommend men awaiting trial and those convicted to join the Army as an alternative to trial or prison (Mattick 1960; Shattuck 1945), based on the widely-held belief that military-style training facilitates rehabilitation of ex-offenders (Bouffard and Laub 2004). Specifically, “knifing-off” of negative past experiences through strict supervision and military socialization has been hypothesized as a positive turning point for those with delinquent past (Laub and Sampson 2001).

Overtime, the evidence suggesting the desistance effect of military service began to accumulate, especially for men who joined during the later years of the Vietnam War and around mid-1980s to 1990s (Bouffard, 2005, 2014; Brooke and Gau 2018; Greenberg et al. 2007b; Teachman and Tedrow 2016). However, studies have also shown that risks of arrest and imprisonment are higher for active duty personnel and veterans, especially among those who joined during the early years of the Vietnam War (Bouffard and Laub 2004; Culp et al. 2013; Lindo and Stoecker 2014; Wright et al. 2005). These seemingly divergent findings reflect the fact that military service impacts the life trajectories of individuals differently. In fact, some have argued that the military reproduces inequality found elsewhere in society, because risks of military enlistment, combat assignment, and death are not equally distributed across the pool of able-bodied men and women (Gifford 2005; Han 2018; Kleykamp 2006; MacLean 2011). After all, the military is an extension of society, which has long struggled to provide equal opportunities.
MILITARY SERVICE AND REPRODUCTION OF INEQUALITY

The meritocratic environment of the military, combined with its provision of steady income, excellent benefits and job training, has been argued to reduce or eliminate racial and class disparities found in the civilian sector (Armor and Gilroy 2010; Kleykamp 2006; Lundquist 2004, 2006; Lundquist et al. 2014; Lutz 2008; Moskos and Butler 1996; Teachman and Tedrow 2008). Citing in-service training and education under the G.I. Bill as positive influencers, Sampson and Laub (1996) have similarly argued that service during the World War II reduced the socioeconomic disadvantage associated with a past criminal conviction. Therefore, it may not be surprising that modern-day military service seems to facilitate socioeconomic integration of ex-offenders (Lundquist et al. 2018). However, the military differs from other professions in a number of important respects, namely heightened risk of injury and death.

Because joining the military is a profound life decision not everyone makes, studies have sought to understand who joins the military. The consistent finding is that those from disadvantaged backgrounds are far more likely to enlist (Armor and Gilroy 2010; Elder et al. 2010; Kleykamp 2006; Lutz 2008; MacLean and Parsons 2010) so long as they are not incarcerated (Han 2018; Sutton 2000). Although black representation has fluctuated since the transition to an all-volunteer force (AVF) in 1973, blacks remain overrepresented, making up 19% of enlisted personnel in 2017. Hispanics are underrepresented except in the Marine Corps, but their share has increased steadily since the 1980s (Armor and Gilroy 2010; Department of Defense 2018a). The sociodemographic composition of the military became a national concern during the Vietnam War, when blacks accounted for roughly 1 in 5 combat casualties (Burk and Espinoza 2012). During the Persian Gulf War, similar allegations that blacks and those from lower socioeconomic backgrounds unequally shoulder the burden of war as “cannon fodder” were raised (Armor 1996).
However, mortality risks do not simply depend on race or class. According to Gifford (2005), the risks of injury and death in the military depend on the processes of units and occupational assignments, the composition of units that participate in military operations, and the battlefield conditions. Therefore, the low rate of black casualties in post-Vietnam era can be explained by underrepresentation of blacks in combat specialties (Gifford 2005; MacLean 2011), whereas the higher than expected casualties for Hispanics may be due to their overrepresentation in combat units during intense conflicts (Fischer 2009; Gifford 2005). The question then arises as to whether combat assignment process is impartial. It is unclear how the military expunged the racial disparities in combat casualties during the late 1960s (Burk and Espinoza 2012), but the evidence shows that blacks nowadays are more likely to be assigned to support roles and see less combat than whites (Gifford 2005; MacLean 2011). Women are underrepresented in ground combat units and are less likely to be deployed than men (Fulton et al. 2012; Woodruff et al. 2006), because women were barred from combat roles until December 2015 (Carter 2015).

Besides race and gender, human capital, class bias, and institutional screening have been found to influence job assignment. Servicemen who grew up in non-intact families tend to be assigned to combat positions (MacLean and Parsons 2010), but the college-educated and those with at least one college-educated parent were less likely to end up in combat (MacLean 2011). Although applicants who score too low on the Armed Forces Qualifying Test (AFQT) are ineligible to join, once in the military, recruits with lower AFQT scores are more likely to be assigned to combat positions (MacLean and Parsons 2010). On the account of human capital, class bias, and institutional hypotheses, it is not surprising that Lundquist et al. (2018) have found a possible correlation between combat assignment and criminal records. Based on Gifford’s (2005) explanation, soldiers with greater exposure to combat should expect higher rates of mortality.
Alternatively, we may find that soldiers with criminal records are more prone to injury and death in general. A study based in the state of Washington estimates the overall mortality rate of former inmates to be 3.5 times higher than that of general population around 1999 to 2003, hypothesizing the lack of protective socioeconomic resources as possible mechanisms driving this gap (Binswanger et al. 2007). Therefore, even after controlling for combat exposure, ex-offenders may face higher risks of injury and death in the military. Another possibility is that soldiers with criminal records exhibit more risk-taking behaviors (Gottfredson and Hirschi 1990), which results in elevated baseline levels of mortality for ex-offenders. It is also plausible that institutional and individual factors together determine the fate of ex-offenders in the military. A study has shown that marginalized youths who are faced with limited employment prospects demonstrate a willingness to accept a risk of death, joining street gangs and selling drugs (Levitt and Venkatesh 2000). A cursory comparison of gangs and the military reveals some similarities, such as minority overrepresentation, hierarchical organizational structure, and the division and specialization of combat, though the military likely offers the better chance of upward mobility as the typical gang member earns roughly the minimum wage (Levitt and Venkatesh 2000).

The available literature thus paints a bleak picture for ex-offenders seeking employment, where they are relegated to the “bottom-of-the-barrel (Purser 2012:399)” jobs, risking their lives selling drugs (Levitt and Venkatesh 2000), or risking their lives serving in the military but with the chance of upward mobility (Lundquist et al. 2018). Given that military service continues to be regarded as a possible correctional tool for delinquent youths, while ex-offenders remain vulnerable in the labor market and beyond, it is important to understand how the military reduce and reproduce disadvantages associated with criminal records in an era of mass incarceration.
DATA

Administrative data, which tracks all new active-duty recruits with no record of prior service who joined the Army during 2002 through 2009 without a college degree, was obtained from the U.S. Department of Defense through a Freedom of Information Act (FOIA) request. To focus our analysis on the differences in combat exposure between those with and without criminal records, we limit our analysis to the Army because the assignment of occupational categories and duties, which has been found to impact risks of injuries and death, varies across branches (Gifford 2005). This methodological choice was also guided by previous studies finding that enlistees with felony-level records are overrepresented in the Army (Lundquist et al. 2018), and serving in the Army increases one’s risk of developing combat-related PTSD among military personnel (Xue et al. 2015). The unit of analysis is the individual soldier, and the original data contained 495,828 new recruits. However, those who are missing information on length of service and dependent status were excluded, which brought down our valid sample size by 2.55% to 483,195.

This study employs two sets of dependent variables to estimate the risks of combat exposure and casualties in two stages. Because our data lacks information that can be used to identify location assignments or deployment, we categorized the Military Occupational Specialty (MOS) codes into low, medium, and high combat exposure groups by carefully examining detailed job descriptions rather than identifying combat units in binary terms. Occupational specialties that provide non-combat related operational support such as plumber (21K), musician (42R), or dental specialist (68E) are classified as low combat exposure (= 0, the reference category). Occupational specialties such as field artillery meteorological crewmembers (13W), firefighters (21M), civil affairs officers who act as liaisons between the Army and civilian population (38B), or combat medic specialists (68W) are classified as medium combat exposure (= 1) because many of them
perform physically hazardous tasks and/or provide support related to combat. Lastly, occupations that are directly related to combat, such as the main land combat force of the Army, namely infantryman (11B) and indirect fire infantryman (11C), multiple launch rocket system crewmember (13M), or M1 armor crewman (19K), are classified as high combat exposure (= 2).

Risks of disability/injury and death are measured using the 4-digit separation codes that were included in the administrative record. Therefore, our analyses cannot capture those who were injured but not discharged. The first dichotomous measure identifies those who have separated from the Army due to permanent and/or temporary disability and injury. The second dichotomous measure indicates separations that were due to battle and non-battle related death, death caused by diseases, and death without a specified cause. We provided disability and death per 1,000 soldiers by combat exposure level in Table 1, alongside descriptive statistics about our sample. To put these numbers into context, the Centers for Disease Control and Prevention (2019) estimates that crude death rates for men and women aged 20 to 24 years were 95.0 per 100,000 in 2002 and 100.5 per 100,000 in 2006 for all causes (2019). Therefore, it is safe to say that military service is a dangerous profession, especially for those who are assigned to occupations that are indicative of combat. However, based on the annual death rates of 7% estimated by Levitt and Venkatesh (2000), the military environment appears less violent than the gang they studied around mid-1980s to 1990s.

[Table 1 About Here]

The independent variables of our interest are defined using the conduct waiver category code, and we separately identify those with felony and misdemeanor records. Because the administrative records provided by the DoD do not indicate the circumstances behind each waiver, felony conduct waivers reflect histories of arrest, conviction, and/or incarceration. A felony is defined as a crime that is severe enough in nature to be imprisoned for more than a year, whereas
a misdemeanor can result in up to a year in jail and expensive fines in most states. A little over 1 percent of the enlistees have felony-level records and 4.5% have committed misdemeanor-level offenses prior to joining the Army. Although it is possible that some enlistees have both felony- and misdemeanor-level records, our data only contain information on the highest-level conduct waiver. Those with felony records are overrepresented in MOSs that are indicative of combat, which substantiates the concern expressed by Lundquist, Pager and Strader (2018).

However, bivariate comparisons are often subject to confounding because sociodemographic factors that precipitate involvement with the criminal justice system are also correlated with the characteristics that predict military enlistment and/or combat exposure. Therefore, we control for individual and contextual factors that influence occupational assignment and the probability of disability and death in the Army. We control for gender, marital and dependent status because these factors influence occupational assignment in the military. Gender is included as a binary variable using men as the reference category (= 0) because women (= 1) are less likely to enlist and be assigned to combat positions than men (Fulton et al. 2012; Woodruff et al. 2006). As can be seen in Table 1, women only make up about 17% of the Army, though the presence of active-duty enlisted women has been increasing steadily across the Armed Forces. Marital status and dependents not only shape one’s eligibility to enlist, but also impact location assignment and deployment. Using binary measures, we compare those who are married against others (= 0), and those with dependents against childless enlistees (= 0). As shown in Table 1, roughly 14% are married and 16% of the sample had minor dependents at the time of entry.

We also control for race, ethnicity, and citizenship status because these demographic factors have been found to impact the probability of enlistment and combat assignment in past studies. Racial category is coded using white as the reference category (= 0), with black/African
American, Asian/Asian American, American Indian/Alaska Native, Native Hawaiian/other Pacific Islanders, mixed-race, and missing/other. Ethnic origin is coded using non-Hispanic as the reference category (= 0), with Hispanic and missing/other. Citizenship is measured as a binary variable using native-born citizens as the reference category (= 0). Confirming what we know from the literature, whites are overrepresented in MOSs with high combat exposure, whereas blacks are underrepresented in MOSs with high combat exposure but are overall overrepresented in the Army. Although there have been some concerns about high casualties among Hispanics, they are more likely to be assigned to MOSs with low combat exposure in the Army. Immigrant soldiers are also underrepresented in MOSs with high combat exposure.

Educational attainment at the point of entry is included to account for differences in human capital, and is measured using those with a high-school diploma as the reference group in relation to high-school dropouts, those with GED equivalent credentials, and those with some college education. We treat those with a high-school diploma from GED holders as two distinctive groups because the latter has been found to cause more disciplinary problems and are terminated twice as likely than the former (Laurence 2014). High-school dropouts and those with GED equivalent degrees are overrepresented in MOSs that are indicative of combat, while high-school graduates and those with some college education are concentrated in MOSs with low to medium combat exposure. These distributions confirm earlier findings that college-educated recruits are less likely to end up in combat than those with lesser education (MacLean 2011).

Delayed Entry Program (DEP) status is measured using a binary variable, identifying recruits who delayed their start date (= 1). DEP allows recruits to finish school, prepare to meet the weight or physical training standards, or take care of family obligations and so on, so that they can first enlist into the inactive reserves and then into active service later. Overall, 27.5% of
recruits have delayed their entries. We also flagged those who joined the Army before the official start of Operation Iraqi Freedom (OIF) in March 2003 to account for the significant increase in the number of active-duty soldiers being deployed to Iraq and Afghanistan through 2009 (Bonds et al. 2010). Recruits with high combat exposure were underrepresented among those who joined before the start of OIF. These two variables control for different circumstances in which each recruit joined the Army.

We also account for physical and mental fitness. The Army has a regulation specifying standards of medical fitness, but some enlistees with normally disqualifying medical conditions or disabilities can still serve if they qualify for medical waivers (Department of the Army 2019). We flagged those who joined with a medical waiver (= 1) using a binary variable to account for possible associations between pre-existing conditions, occupational assignment, and the risks of injury and disability. Roughly 5% of the enlistees join using such a waiver. AFQT percentile rank was calculated by the DoD based on the Armed Services Vocational Aptitude Battery (ASVAB) test, and is used to assess one’s verbal, arithmetic, and analytical reasoning skills to screen applicants for eligibility. AFQT is not as comprehensive as ASVAB and covers less subject areas, but we nonetheless found that the average AFQT percentile rank is significantly lower for the group with high combat exposure. In our analyses, we mean-centered AFQT percentile rank.

Lastly, we measure recruit’s age at accession in actual years and the length of active service in months. The average soldier is about 20.65 years old, but recruits who are assigned to occupations that are indicative of combat tend to join at younger ages. We measure the length of service in months because the average contract length is four years. Without controlling for other factors, those assigned to high combat occupations appear to have served less months than others.
ANALYTICAL STRATEGY

The analysis proceeds in two steps by first examining the proportional odds of being assigned to an MOS with low, medium or high combat exposure, and then estimating the probability of termination due to disability/injury and death. To investigate whether records of past felony and misdemeanor offenses influence the level of combat exposure, we use occupational specialty clusters as our outcome variable ranging from MOSs that are unlikely to see combat (= 0), may be dangerous and/or see combat (= 1), and indicative of combat (= 2). Because the outcome variable is categorical and ordered, neither ordinary least squares regression nor logistic regression are appropriate. Therefore, we employ ordinal logistic regression models to examine the determinants of combat exposure and account for variability in occupational assignment process across locations by correcting the standard errors through clustering of recruits within Military Entrance Processing Station (MEPS). There are 65 MEPS branches across the U.S. at which each prospective enlistee takes the ASVAB, undergoes a physical fitness test, discusses the job opportunities in relation to occupational demands suitable for their predicted capabilities, and are sworn in.

As a part of our effort to better understand inequality in combat assignment, we examine both men and women in our sample and include an interaction term between gender and parenthood. Although our data comes from years prior to the opening of all combat roles to men and women, evidence suggests that women are deployed to combat zones or dangerous areas, even when they are not assigned to direct combat positions and are deployed to provide support functions (Fulton et al. 2012). Therefore, by examining the impact of gender in combat assignment, this study aims to build on prior studies examining the determinants of combat exposure and casualties that placed their focus on the roles of race and class, but not gender (Gifford 2005; MacLean 2011; MacLean and Parsons 2010). We include an interaction term between gender and
dependent status at the entry because “female biological considerations of pregnancy and menstruation (p. 502)” have always been the center of debate surrounding occupational assignment policy and exclusion of women from combat (Fulton et al. 2012).

The probability of separation due to disability/injury and death are estimated using logistic regression models controlling for months of active service. To consider the possibility that those with and without criminal records face different odds of separation due to disability/injury or death even when they are assigned to similarly dangerous occupations, we include interaction terms between past offenses and combat exposure. For robustness checks, we ran additional logistic regression models by applying Coarsened Exact Matching (CEM) to our data to account for imbalance in covariates between those with and without felony-level records. The biggest drawback of using this data is that although we have near-complete information about the individuals who joined the Army between 2002 to 2009, our data does not include those who did not or failed to join the Army. Therefore, we cannot rule out the possibility that those who joined with a felony-level moral conduct waiver are characteristically different from those who joined without such a waiver in some meaningful ways.

Our data shows that those with felony-level records on average tend to be older, are more likely to be male, are less likely to be black, are less likely to be non-Hispanic, are less likely to be high-school dropouts, and have higher AFQT percentile ranks than those without felony-level records. Therefore, we matched the sample of soldiers with and without felony-level records using age, gender, race measured as black or others, ethnicity measured as non-Hispanic or others, education level at the entry, and AFQT percentile rank to account for the imbalance in covariates. Using the matched sample, we re-estimated the models predicting the probability of disability/injury or death but the findings remained unchanged (results available upon request).
FINDINGS

Model 1 in Table 2 provides estimated coefficients from ordinal logistic regression models predicting combat exposure. As expected, enlistees with criminal records are more likely to be assigned to occupations with higher combat exposure than their comrades without criminal records, especially among those with felony-level records. The odds of being assigned to MOSs with high combat exposure against the combined medium and low combat exposure clusters is 1.29 times higher among those with felony-level records than those without, given that all other covariates are held constant. As for those with misdemeanor-level records, the odds of being assigned to combat positions instead of positions with medium and low combat exposure is 1.15 times higher than their counterparts with no criminal records. Therefore, analogous to the “cannon fodder” allegation raised during the Vietnam War about the overrepresentation of blacks and those from lower socioeconomic backgrounds in combat occupations (Armor 1996), the modern day inequality in combat assignment is marked by past criminal offenses.

[Table 2 About Here]

Control variables largely confirm what we already know from the existing literature about disparity in combat assignment. Women are significantly less likely to be exposed to combat, and those with minor dependents at the time of joining the Army are also less likely to be assigned to combat positions. Although most newly enlisted recruits are young and not married, those who were married at the time of entry are less likely to be assigned to combat positions. Building on the studies documenting underrepresentation of blacks in combat occupations, the results indicate that Asian/Asian Americans, Native Hawaiian/other Pacific Islanders, and those with two or more races are also less likely to be assigned to combat positions than their white counterparts in the Army. There have been some concerns over higher casualties among Hispanic service members.
during recent conflicts in Iraq and Afghanistan (Fischer 2009; Gifford 2005), but our analysis indicates that in the case of the Army, Hispanic soldiers are less likely to be exposed to combat than non-Hispanic soldiers, the reference group. On a related note, some have questioned the ethics of recruiting immigrants in exchange for expedited citizenship process (Wong 2007), but we find that non-citizens are less likely to be exposed to combat than native-born citizens and immigrants who were already naturalized at the time of enlistment.

In terms of human capital factors, high-school dropouts and those with GED equivalent degrees are 1.52 and 1.32 times more likely than those with a high school diploma to be assigned to occupations that are indicative of combat versus occupations with medium and low combat exposure. Having a higher AFQT percentile rank on the other hand reduces one’s odds of being assigned to combat occupations. Although class bias and institutional screening hypotheses were developed based solely on the experiences of men (MacLean 2011; MacLean and Parsons 2010), findings presented in this study provide support for these theories using a sample that includes both men and women. As for military-specific accommodations that were made at the entry, joining through the DEP or entering with a medical waiver does not impact one’s likelihood of combat exposure. Lastly, those who joined the Army before the official start of the Iraq War were significantly less likely to be assigned to MOSs with high combat exposure. This finding confirms what Gifford (2005) has argued about the importance of accounting for battlefield conditions when understanding factors determining casualties.

As part of an effort to deepen our knowledge of social and institutional factors influencing combat exposure in the Army, Model 2 in Table 2 includes an interaction term between gender and dependent status at the time of entry. The main effects of gender and dependent status on the likelihood of being assigned to combat position did not change in direction, but did change in
magnitude. The results suggest that the odds of female soldiers without dependents being assigned to occupations with high combat exposure against the combined medium and low combat exposure clusters is 0.18 times lower than male soldiers without dependents. The odds of being assigned to high combat occupations is 0.87 times lower for men with dependents than men without dependents.

Because women and those with dependents are less likely to be assigned to combat positions, we were surprised to find that the odds of women being assigned to MOSs with high combat exposure increases by a factor of 1.55 if they joined the Army with dependents. A plausible explanation for this finding is that mothers relative to childless women may be more likely to express their preferences for in-demand occupations offering higher enlistment bonuses to provide for their children. Although the majority of new enlistees are single and childless, a survey taken at Fort Lewis, Washington during 2002 indicates that 19% of the first-term enlistees mentioned need to support a family as part of their motivations to serve (Woodruff et al. 2006). Army recruiting data also shows that occupations such as infantry and field artillery were high in demand and saw significant increases in bonus amount as the Iraq War unfolded (Asch et al. 2010). More studies are needed to unpack this unexpected and puzzling finding.

Table 3 presents estimates from logistic regression models predicting the probability of separation due to disability/injury. First and foremost, the results recapitulate the point made by Gifford (2005) that the probability of injury depends on occupational assignments, because those who are assigned to occupations with medium and high combat exposure are significantly more likely to be disabled. Model 1 in Table 3 reveals that the odds of separation due to disability/injury is 1.19 times higher among enlistees with MOSs that are dangerous and may be exposed to combat,
whereas those with MOSs that are indicative of combat face the odds 1.26 times higher than those who are assigned to occupations with low combat exposure. However, we find that past offenses and sociodemographic factors also shape one’s likelihood of being injured or disabled in the Army.

Our estimates suggest that the odds of separation due to disability/injury for ex-felons and those with a misdemeanor-level offense are 1.25 and 1.13 times higher respectively than recruits with no criminal conviction. Although we earlier found that women are less likely to be assigned to occupations with high combat exposure than men, Model 1 in Table 3 shows that women are 1.43 times as likely to be disabled or injured than men. Enlistees with dependents are less likely to be assigned to combat positions, but dependent status does not significantly impact the likelihood of disability/injury. Married soldiers in contrast are 1.07 times more likely to be injured or disabled than those who were not married. Corroborating and expanding on previous studies finding underrepresentation of blacks in combat positions (Gifford 2005; MacLean 2011), we find that all racial and ethnic minority groups face reduced probabilities of separation due to disability/injury relative to white and non-Hispanic soldiers. Moreover, those who lacked citizenship at the time of accession were less likely to separate than native-born citizens and naturalized immigrants.

In the previous set of analyses, we found that high-school dropouts and those with GED equivalent degrees face elevated odds of being assigned to high combat occupations. However, Model 1 in Table 3 indicates that once we account for occupational assignments, high-school dropouts are less likely to be disabled or injured compared to recruits with a high school diploma. In contrast, recruits who joined before the official start of OIF are predicted to face 2.32 times higher odds of being disabled or injured, likely because they were among the first to be deployed. Soldiers who delayed their entries or joined with a medical waiver face higher odds of separation due to disability/injury, even though we earlier found that these factors do not significantly
influence one’s likelihood of combat exposure (see Table 2). Lastly, we find that entering with higher AFQT percentile ranks is associated with lower odds of disability/injury.

Model 2 in Table 3 includes interaction terms to test whether the likelihood of disability/injury varies by criminal record among recruits with similar levels of combat exposure. We find no significant difference in the odds of separation between those with a felony waiver and those without any criminal history among medium and high combat exposure groups. However, ex-felons who are assigned to occupations that provide non-combat related operational support face 1.3 times higher odds of being disabled or injured compared to their non-felon counterparts. Among those who are assigned to occupations that are indicative of combat, our estimates indicate that the odds of separation due to disability/injury differ between those with a misdemeanor and those without any criminal conviction. To examine whether this interaction is significant in terms of predicted probability of separation due to disability/injury, we produced Figure 1, where the predicted probability of separation is shown in light gray bars with whiskers indicating 95 percent confidence intervals.

[Figure 1 About Here]

Predicted probabilities shown on the left side of Figure 1 capture the significant main effect found for the reference group of recruits who are assigned to non-combat related operational support roles. Holding all other variables at means, we estimate the probability of separation due to disability/injury to be 0.046 among soldiers without any criminal conviction who are assigned to occupations with low combat exposure and 0.059 among their ex-felon counterparts. Because whiskers do not overlap, the difference in predicted probabilities between recruits with a felony waiver and those without any criminal record is statistically significant among soldiers with low levels of combat exposure. The predictions shown on the right side of Figure 1 illustrate that
recruits with past offenses who are assigned to combat occupations face significantly higher probability of disability/injury than their counterparts without any criminal record. These findings demonstrate that criminal records not only predict inequality in combat assignment, but also predict one’s likelihood of being injured or disabled while serving in the Army.

Next, we present the results from models predicting the likelihood of separation due to death. Model 1 in Table 4 suggests that recruits who are assigned to occupations with medium combat exposure face 1.36 times higher odds of being killed than those who are assigned to occupations with low combat exposure, whereas those in combat occupations face 2.32 times higher odds. Compared to soldiers who joined after the official start of the Iraq War, those who joined prior and were likely among the first to be deployed to Iraq face 2.26 times higher odds of separation due to death. These findings once again support the argument that the probability of survival in the military depends highly on occupational assignments and conditions of battlefield (Gifford 2005). Comparing the results from Table 4 with those of Table 3, we can see that many of the significant predictors of disability/injury such as marital status, race, DEP status, medical waiver, and AFQT percentile rank did not predict one’s likelihood of death at a statistically significant level.

[Table 4 About Here]

At the same time, Model 1 in Table 4 indicates that the odds of separation due to death are 1.74 times higher among recruits with felony records and 1.4 times higher among those with misdemeanors compared to their counterparts without any criminal record. We also find that non-citizens face 1.36 times greater odds of being killed than citizen soldiers, despite the earlier finding that non-citizen soldiers face reduced likelihood of being assigned to combat positions than their citizen counterparts. More studies are needed to make sense of this puzzling result, but it does raise
the question of whether it is ethical for noncitizens to serve in the military in exchange for citizenship (Wong 2007). These findings extend previous studies by recapitulating the idea that risks of death are not equally shared across the recruits (Gifford 2005; MacLean 2011; MacLean and Parsons 2010).

Lastly, we examine whether the likelihood of death varies by past offenses among soldiers with similar levels of combat exposure using interaction terms. Because Model 2 in Table 4 returned no significant interaction term, we deduce that the effects of being assigned to medium or high combat occupations on the odds of separation do not differ significantly between those with and without criminal records. However, the significant main effect suggests that ex-felons who are assigned to occupations with low combat exposure face 2.47 times higher odds of being killed compared to their non-felon counterparts. Predicted probabilities of separation due to death are shown in Figure 1 using darker gray bars with whiskers indicating 95 percent confidence intervals. The mortality probabilities among soldiers with low combat occupations are shown on the left side of Figure 1, and we predict the probability of separation due to death to be 0.004 without any criminal conviction and 0.009 with a felony conviction. The disparity in predicted mortality risks by felony conviction status is statistically significant because the whiskers do not overlap.

Taken these findings together, we conclude that recruits with past offenses are more likely to be assigned to combat positions, but the elevated risk of deaths among ex-felons documented by Lundquist, Pager and Strader (2018) does not appear to be simply due to ex-felons being assigned to combat positions. We replicated these models using matched samples, but the findings remain robust and consistent even after adjusting for imbalance in covariates between those with and without felony records (results are available upon request).
DISCUSSION AND CONCLUSION

The results presented in this study paint a complicated picture of soldiers with criminal records serving in the Army. We find that soldiers with criminal records are 1.15 to 1.3 times more likely to be assigned to occupations with higher combat exposure than those without, which supports the idea that the burden of combat is unequally distributed across men and women serving in the Army (Gifford 2005; MacLean 2011; MacLean and Parsons 2010). Our findings also give credence to the concern that there are disparities in the risk of casualties between enlisted soldiers with and without criminal records (Lundquist et al. 2018). However, the results presented in this paper introduces a new puzzle, where soldiers with felony records are 2.47 times more likely to die than their comrades without criminal records when they are not assigned to combat positions.

As we hypothesized earlier, a plausible explanation for our findings is that soldiers with criminal records are generally more susceptible to injury and death than soldiers without any criminal conviction. Contrary to public perception, most fatalities in the military occur as a result of accidents, illness, or self-inflicted injuries rather than combat-related injuries. While our data cannot compare causes of death by past offenses and combat exposure levels, the Bureau of Labor Statistics (2009) estimates that between 2003 and 2008, 61% of fatal injuries that occurred to the members of the resident military on work premises within the U.S. were due to transportation incidents. Although fatalities due to combat increased in its share during the Iraq War troop surge of 2007, the majority of fatalities were due to other causes before and after the surge (Defense Manpower Data Center 2019). Therefore, if those who have committed crimes in the past engage in more risky behavior than those without (Gottfredson and Hirschi 1990), it is probable that ex-offenders on average are more prone to fatal accidents and injuries in the Army.

Along this line of reasoning, some have questioned whether military service facilitates
rather than discourages illegal behavior, including violence and self-harm, because their work is highly stressful, provides opportunities to learn how to inflict pain on others, and legitimizes violence (Bouffard 2005; Culp et al. 2013; Lindo and Stoecker 2014). While some assert that the environment of the military promotes desistance from future crimes (Bouffard, 2005, 2014; Brooke and Gau, 2018; Greenberg et al. 2007b; Teachman and Tedrow, 2016), others caution that risks of arrest and imprisonment are higher among those who have served in the military than those who have not (Bouffard 2005; Bouffard and Laub 2004; Culp et al. 2013; Lindo and Stoecker 2014; Wright et al. 2005). Therefore, it is possible that soldiers with criminal records are more prone to assaults and violent acts that result in fatalities. However, the overwhelming majority of non-combat occupational fatalities that were reported as assaults and violent acts between 2003 and 2008 appear to be suicides (Bureau of Labor Statistics 2009).

An alternative explanation is that despite the greater access to healthcare in the military (Lundquist et al. 2015), ex-offenders face a greater risk of mortality than non-offenders because they have less protective capacity against the high burden of disease, such as drug overdose, violence, and injury (Binswanger et al. 2007; Travis et al. 2014). Insights from the civilian world suggest that marginalized communities with limited resources and grim employment prospects are willing to take on dangerous tasks and deadly work (Levitt and Venkatesh 2000; Purser 2012), which likely aggravates the risks of injury and death. We also know that blacks and immigrant Latino workers in the civilian sector report higher rates of workplace injury and fatality as a result of discriminatory job assignment practices (Seabury et al. 2017; Snipes et al. 2017). While it is difficult to determine causality for casualties in the military with criminal record and combat assignment, a combination of both structural- and individual-level processes likely operate in a similar fashion to perpetuate inequality.
Our findings have important implications for policy and practice to enhance equity in combat assignment and casualties within the U.S. military, but more broadly, our research highlights the need to evaluate the nature of jobs that are available to people with criminal records. At the time of this writing, the military is the largest single employer of ex-offenders in the U.S. (Boucai 2007; Lundquist et al. 2018), and it is likely to remain so until more employers consider hiring people with criminal records. Because second chances are scarce, it is vital that people with past offenses are eligible to serve in the military through the moral waiver process. However, because former felons are denied full participation in the democratic process (Manza and Uggen 2006; Pettit and Sykes 2015; Uggen et al. 2006), it is also critical that we understand the full extent of collateral consequences associated with criminal convictions.

Lastly, we see two avenues for future research. First, workplace injury and death across industries and occupations between workers with and without criminal records should be examined. If ex-offenders with limited education are far more likely to work in dangerous temporary jobs (Purser 2012), we will likely find similar injury and mortality trends emerge in the civilian sector. Second, it is crucial for future studies to investigate the motivations for enlistment among ex-offenders. Woodruff, Kelty and Segal (2006) show that soldiers who reported low propensity to serve were more likely to have joined the Army for occupational motivations, such as lack of better options and to support one’s family. To fully understand how combat assignment and death are marked by criminal records in the Army, it is important to understand whether ex-offenders enlist for similar occupational motivations out of desperation.
REFERENCES


Bonds, Tim, Dave Baiocchi, and Laurie L. McDonald. 2010. *Army Deployments to OIF and OEF*. Santa Monica, CA: RAND.


Purser, Gretchen. 2012. “‘Still Doin’’ Time:’ Clamoring For Work In The Day Labor Industry.”


Raphael, Steven. 2006. “Should Criminal History Records Be Universally Available?”


*Health Affairs* 36: 2: 266–73.


Table 1. Descriptive Statistics of New Enlistees in the Army by Combat Exposure Level

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<th>Medium</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>((n = 264,787; 54.80%))</td>
<td>((n = 58,989; 12.21%))</td>
<td>((n = 159,419; 32.99%))</td>
<td>((n = 483,195; 100.00%))</td>
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<td>Disability per 1,000</td>
<td>48.1406</td>
<td>59.4348</td>
<td>52.9360</td>
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<tr>
<td>Death per 1,000</td>
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<td>5.1874</td>
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**Categorical Independent Variables**

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<th>Mean</th>
<th>Sig2</th>
<th>Mean</th>
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<td>High</td>
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**Continuous Independent Variables**

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<td>37.03 ***</td>
<td>(23.88)</td>
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</table>

**Notes.** Standard deviations in parentheses. Sig1 = Mean Low vs. Mean Medium, Sig2 = Mean Medium vs. Mean High, Sig3 = Mean Low vs. Mean High. *\(p \leq .05\). **\(p \leq .01\). ***\(p \leq .001\).
Table 2. Ordered Logit Models Predicting Combat Exposure Level (N = 483,195)

<table>
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<tr>
<th></th>
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<tr>
<td></td>
<td>OR</td>
<td>(z)</td>
<td>OR</td>
<td>(z)</td>
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<td>(7.74)</td>
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<td>(7.82)</td>
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<td>(8.68)</td>
<td>1.1558***</td>
<td>(8.82)</td>
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<td>(-72.73)</td>
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<td>(-4.80)</td>
<td>0.8705***</td>
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<td>Female × Dependants at Entry</td>
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<td></td>
<td>(16.14)</td>
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<td>0.7447***</td>
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<tr>
<td>Race</td>
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<tr>
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Notes. *p ≤ .05. **p ≤ .01. ***p ≤ .001. Standard errors are clustered by MEPS.
Table 3. Logistic Models Predicting Separation Due to Disability/Injury (N = 483,195)

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<td>1.2472*** (13.48)</td>
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Notes. *p ≤ .05. **p ≤ .01. ***p ≤ .001.
Table 4. Logistic Models Predicting Separation Due to Death (N = 483,195)

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<td>(1.27)</td>
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<tr>
<td>Race</td>
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<td>1.3588**</td>
<td>(2.90)</td>
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<tr>
<td>Below High School</td>
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<td>0.6589*</td>
<td>(-2.33)</td>
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<td>2.2610***</td>
<td>(15.96)</td>
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<td>1.1404</td>
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<td>1.1402</td>
<td>(1.47)</td>
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<td>(1.17)</td>
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Notes. *p ≤ .05. **p ≤ .01. ***p ≤ .001.
Figure 1. Predicted Probability of Separation

- Disability/Injury
- Death

Probability levels for different offense types and severity levels.

- No Offense
- Misd
- Felony

Severity levels:
- Low
- Medium
- High

Bars represent prediction intervals for each category.