

ABSTRACT

Title of Thesis:

MILITARY SERVICE, COMBAT EXPOSURE,
AND POST-SERVICE ARREST IN ALL-
VOLUNTEER FORCE VETERANS

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The advent of the wars in Afghanistan and Iraq in 2001 and 2003, respectively, has generated a renewed interest in the negative consequences of contemporary warfare on U.S. military personnel. The United States' War on Terror resulted in the deployment of an estimated 1.9 to 3 million servicemembers between 2001 and 2021 (Watson Institute for International and Public Affairs, 2024). These veterans suffer disproportionately from homelessness, substance abuse, traumatic brain injury, and post-traumatic stress disorder because of their military service, and some research has suggested that Iraq and Afghanistan veterans are at a higher risk of offending than non-veterans. Among veterans who were arrested following the 2021 siege of the U.S. Capitol Building on January 6th, 2021, 70% joined the military after 2000, serving in wars in Afghanistan and Iraq (Milton & Mines, 2021). Despite heightened media coverage, limited research has explored the relationship between modern military service and offending, and almost no literature has examined how combat exposure may affect the likelihood of veteran crime commission. This study builds upon previous research on AVF veterans, examining

exposure to combat while on active duty and the prevalence of post-service arrest, using a nationally representative sample of youth who served in the military during the wars in Iraq and Afghanistan. This study found that AVF veterans appeared less likely than non-veterans to be arrested after their service, and that combat veterans appeared less likely than non-combat veterans to be arrested. These results lacked statistical significance across most rounds, inviting future research on AVF veterans and the differential impact of individual characteristics of modern military service on future offending.

THE ENDURING IMPACT OF MODERN WARFARE: MILITARY SERVICE, COMBAT
EXPOSURE, AND POST-SERVICE ARREST IN ALL-VOLUNTEER FORCE VETERANS

by

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Introduction

The 2001 terrorist attacks on the World Trade Center and the subsequent War on Terror have generated a renewed interest in the relationship between military service and criminal behavior. This interest has intensified due to the influx of media coverage following the siege of the U.S. Capitol Building on January 6th, 2021. Among veterans who were arrested following the 2021 assault, 70% joined the military after 2000, serving in wars in Afghanistan and Iraq (Milton & Mines, 2021). This finding echoes much of the current research on modern military service, which is that veterans who served during the All-Volunteer Force (AVF) may be more likely to engage in post-service offending than non-veterans. The military has changed markedly since its inception, but the shift to the AVF in 1973 was particularly significant. This transition resulted in a U.S. military population that was the result of self-selection, not compulsory recruitment. Additionally, wars characteristic of the AVF era differ considerably from those during the conscription era. Asymmetric warfare, the increased use of improvised explosive devices (IEDs) by terrorist organizations, and prolonged overseas engagement are characteristic of service during the AVF. Thus, the transition to the AVF and changes in modern warfare warrant a reevaluation of the association between military service and veteran offending.

Much of the prior literature examining veterans' post-service outcomes has examined military service as homogenous, neglecting to address the variability of individual military experience. Some research has narrowed its focus to particular characteristics of one's military service, but there is still a large gap in empirical literature on AVF veterans. Importantly, variation in military service, especially exposure to combat, may lead to differential effects on the likelihood of post-service offending. Sampson and Laub (1993) described military service as an important turning point along the life course, emphasizing that the quality of military service,

not simply one's participation, may produce differences in post-deployment outcomes, including criminal behavior. Further, the authors stress that the extent to which turning points produce changes in criminal propensity is independent of prior offending behavior. Thus, Sampson and Laub's Age-Graded Theory of Informal Social Control argues that military service may serve as a positive turning point for some, encouraging desistance from crime, but for others, participation in the armed forces may foster persistent criminal behavior. Prior literature on draft-era veterans has typically found military service to be a positive turning point along the life course. However, modern military service may permit engagement in offending through state-sanctioned violence, leading to offending persistence. Military service may be either a positive or a negative turning point, with post-service outcomes dependent upon the character and quality of one's experience in the armed forces.

Some research has suggested that the degree of combat exposure experienced while deployed on active duty may help explain differences in post-service offending among AVF veterans, but this relationship lacks empirical analysis. Few studies critically examine the effect of combat exposure on veteran crime commission, yet research on veteran offending recognizes that there are differences between combat and non-combat veterans. Among veterans who served in Afghanistan and Iraq, combat exposure has consistently been found to increase the likelihood of post-service offending (Cesure et al., 2022). Research examining combat exposure and its association with criminal behavior is minimal. Further, many studies use substance abuse, mental health difficulties, or indicators of intimate partner violence (IPV) to examine post-service outcomes, not measures of criminal justice involvement.

The current study builds upon previous research on AVF veterans and offending by examining military service as heterogeneous, focusing on whether veterans were exposed to

combat while on active duty and the prevalence of post-service criminal justice contact. While prior literature has examined veteran offending over the life course, few, if any, studies have compared the risk of post-service offending over the life course among AVF veterans with and without combat exposure. This research examines the cumulative prevalence of post-service arrests – the proportion of the sample who reported being arrested at least once after their military service – among AVF veterans who served on active duty, comparing veterans with and without combat exposure. I have two research questions. First, are AVF veterans who served on active duty more likely to be arrested after their military service compared to non-veterans? Second, among AVF veterans who served on active duty, are combat veterans more likely to be arrested after their military service than non-combat veterans? I test these hypotheses using longitudinal survey data from a nationally representative sample of youth born between 1980 and 1984. My research is solely descriptive. Thus, if service in the AVF is associated with post-service arrest or if combat exposure is associated with post-service arrest, this study only suggests the need for more research on AVF veterans and their unique military experiences. If future research finds similar results, it may have implications for veteran services and criminal justice policy, including increased attention toward targeted veteran reintegration programming, the expansion of veteran treatment courts, and more emphasis on the adverse effects of adult exposure to violence more broadly.

Background and Theoretical Development

The Conscription Era and Age-Graded Theory of Informal Social Control

A considerable amount of research on the impact of military service has been conducted on veterans who served during conscription, or the draft era. Conscription lasted from 1940 to

1973 and was created to address manpower deficiencies in response to the United States' escalating involvement in World War II (Selective Service System, n.d.). Prior literature on draft-era veterans has consistently found military service to be a protective factor along the life course. Mattick (1960) found that parolees who served in the Army during World War II were less likely to recidivate than parolees who had never served in the military, and Bouffard (2003) found that those who served during Vietnam were less likely to offend after their military service, in general (Mattick, 1960; Bouffard, 2003). The positive role of military participation is especially evident among those from low socioeconomic backgrounds before serving in the armed forces. Draft-era veterans with disadvantaged pre-service backgrounds benefited from increased occupational achievement, higher marriage stability, reduced associations with delinquent peers, increased job stability, and enhanced socioeconomic attainment because of their military service (Sampson & Laub, 1996; Elder, 1986).

Sampson and Laub's (1993) reanalysis of Sheldon and Eleanor Glueck's study of 500 delinquent and 500 nondelinquent boys found results consistent with prior literature on conscription veterans. This sample of men born during or right before the Great Depression came from low-income families and served in either World War II, the Korean War, or during peacetime (Glueck, 1956). In their study, Sampson and Laub found military service to be a positive turning point along the life course, contributing to offending desistance. Sampson and Laub's 1993 Age-Graded Theory of Informal Social Control defines turning points as 'changes in the life course,' emphasizing that these life-altering changes occur over time and need not be acute events (Sampson & Laub, 1993). Turning points may alter an individual's bond to society, leading to changes in criminal behavior. The strength of social bonds is evaluated by the attachment to key institutions of informal social control, such as employment, marriage, military

service, and school. Sampson and Laub emphasize that the quality and strength of social bonds in adulthood predict future offending regardless of prior criminal propensity. Turning points may either facilitate desistance from or encourage engagement in criminal behavior, but changes in offending depend on the strength and quality of one's attachment to key institutions of informal social control, not simply the existence of changes in the life course.

Military participation in itself is not sufficient to predict changes in criminal behavior. Length of service, combat exposure, age at entry, service during peacetime or war, branch type, and active-duty status may be defining elements of military service that could lead to changes in veterans' outcomes upon returning to civilian society. These characteristics are indicative of the quality of one's military experience. Thus, participation in the armed forces may reduce the likelihood of post-service offending for some; for others, negative war experiences may facilitate future criminal behavior.

The All-Volunteer Force and Post-Service Offending

Modern military service during the AVF era may be associated with an increased likelihood of post-service offending and criminal justice involvement. The AVF began in mid-1973, representing a shift from conscription to voluntary military participation. The transition to voluntary military recruitment drastically altered the U.S. military population, as military service resulted from self-selection, not compulsory recruitment. Therefore, the U.S. military became an occupation, not an obligation, and was required to compete with private industries within the traditional labor market (Clever & Segal, 2012).

The shift from conscription to the AVF, technological advancements, and changes in modern warfare may have created additional post-deployment complications for modern military veterans' reintegration into civil society. Thus, contemporary military service may be less likely

to be a positive turning point along the life course for AVF veterans. Rather, AVF veterans may be more likely than non-veterans to engage in offending. In their sample, Culp and colleagues found that while military service in general did not increase the probability of incarceration, those who served in the AVF were over two times more likely to be incarcerated compared to other veterans and non-veterans (Culp et al., 2011). Similar results were also found when comparing AVF veterans to non-veterans of a similar age and ethnicity (Greenberg & Rosenheck, 2011).

However, there is still a large gap in empirical research on AVF veterans' criminal justice involvement, resulting in mixed findings on whether modern military service facilitates desistance from criminal behavior or the onset of offending. Some literature has found that military service during the All-Volunteer Force era served as a positive turning point along the life course, consistent with Sampson and Laub's 1993 study (Bouffard, 2005). Tsai and colleagues (2013) found Operation Enduring Freedom, Operation Iraqi Freedom, and Operation New Dawn veterans were half as likely to be incarcerated and report fewer lifetime arrests than other veterans (Tsai et al., 2013). Conversely, Carlton-Ford & Ender (2011) highlighted that the length and frequency of modern military deployments, namely those for the wars in Afghanistan and Iraq, have led to the "hyperutilization" of servicemembers and increased stress on military families (Carlton-Ford & Ender, 2011; Huskey, 2015). Additionally, due to the structure of the AVF, the U.S. military was likely under-resourced and unprepared for the prolonged military engagements in Iraq and Afghanistan, subjecting military personnel to heightened stress and psychological difficulties (Tanielian & Jaycox, 2008).

Overall, the limited body of research on AVF veterans is rather inconsistent and lacks empirical rigor. Many studies have attributed individual-level characteristics as an explanation

for why there are differences in post-service offending behaviors within AVF veterans (Bouffard, 2005; Brooke & Gau, 2015). One's military experience is highly individualized, and some prior literature has theorized that the decision to join the military may attract violence-prone individuals. These self-selection effects create challenges for studying AVF veterans because research must account for pre-service characteristics that may distinguish those who choose to join the military from the general population. Some research has proposed that more violence-prone individuals may self-select into military service to engage in state-sanctioned violence, leading to offending persistence (Nussio, 2017).

There may be a larger proportion of violence-prone individuals who choose to join the armed forces. Military service may provide a means for persistent criminal behavior, in which individuals continue offending patterns by engaging in state-sanctioned violence. Other research argues that there is a process of socializing soldiers into committing violence, especially following 9/11 and the War on Terror (Lankford, 2009). The advent of wars in Iraq and Afghanistan in the early 21st century coincided with significant changes in modern military training. The increased use of drones and other depersonalized killing strategies may have reduced Iraq and Afghanistan veterans' resistance to killing (Cesur et al., 2020). Thus, the structure of the AVF, changes in military training, and technological advancements may facilitate AVF veterans' criminal behavior, especially among those with prior offending histories (MacManus et al., 2015).

However, the Age Graded Theory of Informal Social Control stresses that military service may change future criminal behavior regardless of prior offending behaviors (Sampson & Laub, 1993). What is important is the quality of one's experience in the AVF. Prior research has overwhelmingly acknowledged that AVF veterans are suffering from one or more negative

service-related outcomes. Increased use of IEDs in warfare has resulted in higher rates of Traumatic Brain Injury (TBI) in Afghanistan and Iraq veterans, with IEDs accounting for 70% of service-related injuries in Iraq and Afghanistan (Le et al., 2023). AVF veterans also report higher rates of post-traumatic stress disorder than non-veterans (Bilmes, 2021). Both PTSD and TBI are associated with increased anger and aggression post-service (Sreenivasan et al., 2013), and post-traumatic stress disorder, traumatic brain injury, and substance abuse are all related to future offending (Taylor et al., 2020; Finlay et al., 2019; Blonigen et al., 2014). Additionally, AVF veterans are spending considerable time overseas, away from their families. Afghanistan and Iraq veterans report increased disconnection from family and friends because of multiple deployments and exposure to violence overseas (Ahern et al., 2015).

Sampson and Laub's 1993 Age-Graded Theory of Informal Social Control emphasizes the importance of social connectedness and the quality of social bonds in predicting offending trajectories (Sampson & Laub, 1993). These bonds may be especially important for active duty service members who are deployed overseas. In their study, Ahern and colleagues found that almost half of all AVF veterans in their sample stated that they viewed other service members as family, emphasizing the importance of social bonds formed during military service in increasing social connectedness (Ahern et al., 2015). When veterans return to civilian society, social connectedness likely decreases because they are separated from those with whom they formed close bonds overseas and must rebuild connections with family and friends who may be unable to relate to their experiences. A loss of social connectedness may decrease veterans' ability to reintegrate into civilian life and reduce protective factors from offending.

However, one's experience in the military is highly individualized, with significant variation regarding branch served, level of combat exposure, length of service, and assigned unit

(Bouffard, 2005; Brooke & Gau, 2015). Thus, levels of social connectedness differ among AVF veterans. Combat exposure is a particularly unique characteristic of military service and may help explain variation in post-service crime commission among AVF veterans.

Combat Exposure Among All-Volunteer Force Veterans and Post-Service Offending

Exposure to combat among AVF veterans may be associated with an increased likelihood of post-service offending and may help explain differences in AVF veterans' criminal behavior. Combat exposure is a defining characteristic of veterans' military service. What this exposure entails has changed over time, especially since the beginning of the Iraq and Afghanistan Wars, but prior research has consistently found a relationship between exposure to violence and future criminal behavior. Among youth, witnessing violence directly is strongly related to future criminal behavior (Eitle & Turner, 2002) and often results in symptoms of psychological trauma, contributing to future violent behavior (Song et al., 1998; Ardino, 2012). While this research has overwhelmingly been conducted on youth, Aubele and colleagues found that in their study, adult exposure to violence was associated with severe distress and social functioning problems (Aubele et al., 2020).

Among military veterans, combat exposure has consistently been found to be related to negative post-service outcomes, including future offending. Combat veterans serving in the military after September 2001 report disproportionately high levels of PTSD, TBI, and substance abuse compared to other veterans (Cesure et al., 2022). These characteristics may put these veterans at a greater risk of incarceration than the general population (Greenberg & Rosenheck, 2011). Orak and colleagues (2023) examined the association between juvenile exposure to violence and future offending, evaluating the extent to which combat exposure mitigated this relationship. The authors found that those who had a history of violent victimization and served

in the military on combat missions were over seven times more likely to engage in offending during adulthood (Orak et al., 2023). For some, military service was a protective factor, reducing the likelihood of future offending. For others, military service was a negative turning point, contributing to the onset of criminal behavior. A potential explanation for this discrepancy is that among AVF veterans, there may be differences in the quality of social bonds formed while overseas.

The bonds formed between those serving in combat units are highly unique and foster social resilience, that is, the capacity to sustain positive relationships, adapt to life stressors, and address social isolation (Cacioppo et al., 2011). Military service promotes a sense of community by fostering certain values such as leadership, social responsibility, and structured discipline. These values are even more emphasized in combat units, leading to a stronger sense of collective identity and unification toward a common goal. Further, social connectedness is especially important in mitigating the adverse consequences of combat exposure, specifically post-traumatic stress disorder (Kintzle et al, 2018). Bonds that are formed during military service may be particularly important for combat veterans, and the removal of these bonds may increase the propensity of combat veterans to engage in crime after their service. The removal of social bonds and high rates of mental health problems, substance abuse, TBI, and unemployment, often characteristic of combat veterans, may make reintegration into civilian life significantly more difficult for this subpopulation. Thus, separation from the military may yield distinctly different outcomes for combat and non-combat veterans.

Current Study

This study has two key objectives. First, I will examine differences in cumulative post-service arrest - the proportion of the sample who reported being arrested at least once after their

military service - between All-Volunteer Force veterans and non-veterans. Second, I will explore differences among AVF veterans, comparing cumulative post-service arrests between non-combat and combat veterans. I hypothesize that AVF veterans who served on active duty will be more likely to be arrested compared to non-veterans. Second, I hypothesize that among AVF veterans who served on active duty, combat veterans will be more likely to be arrested after their military service than non-combat veterans. To test these hypotheses, I draw a nationally representative sample of youth who joined the military around the beginning of the wars in Afghanistan and Iraq. This study provides an important contribution beyond prior research because it addresses the lack of research on AVF veterans, accounts for variability in military service, and explores the connection between adult exposure to violence and future offending.

The existing body of literature on military veterans and post-deployment criminal behavior is quite limited. More broadly, research on participation in the armed forces often neglects to account for the extensive individual variability in military experience. While existing findings acknowledge that the AVF is a distinct era of military service and that AVF veterans exhibit different post-service outcomes than draft-era veterans, empirical research on AVF veterans' post-deployment outcomes is still underdeveloped. The current study expands on this limited body of literature by exploring the cumulative proportion of arrests between veterans and non-veterans, and non-combat veterans and combat veterans. In doing so, my research studies the AVF as a unique era of military service and addresses heterogeneity within modern military participation. My study is solely descriptive, but it aims to spur more research on the relationship between modern military service and veteran offending. Future research on this topic will allow policymakers to more adequately address the needs of AVF veterans upon their return to conventional society, thereby reducing the likelihood of veteran crime commission.

The current study also explores a critical gap in life course research, addressing the limited empirical literature examining the association between exposure to violence during adulthood and adult-onset offending. While there is extensive research on exposure to violence, these studies have overwhelmingly been conducted using youth cohorts. Further, negative turning points theory has been used to explain adult-onset offending and persistent criminal behavior, but has done so using measures of youth exposure to violence, not violence witnessed as an adult. The present research analyzes adult violence exposure, providing opportunities for researchers and practitioners to further investigate how violent experiences at any stage across the life course may shape future criminal behavior.

Data and Methods

Data

The data used for this study come from the National Longitudinal Survey of Youth 1997 (NLSY97). The NLSY97 is a longitudinal survey following a sample of youth born in the United States between 1980 and 1984. Respondents were first interviewed in 1997 when they were ages 12-17. The cohort was initially interviewed annually but has been interviewed biannually as of 2011, resulting in 20 rounds of survey data. Of the 8,984 individuals interviewed in Round 1 (1997), 74.7% (6,713) were retained into Round 20 (2021-2022). Respondents are asked to report their demographic characteristics, employment history, household and family characteristics, dating history, income, health, attitudes, crime, and substance abuse. An advantage of the NLSY97 is that it contains longitudinal data on military veterans, including active-duty status, branch, disability status, and exposure to combat. A relatively small proportion of NLSY97 respondents are military veterans, resulting in limited sample sizes and diminished generalizability. However, the NLSY97 was still an advantageous data set to use for

this research because it is one of the few publicly available datasets with detailed information on respondents' military history and biannual arrest measures.

The current study has two analytic samples, each with a range of sample sizes across five rounds of data (2013-2021). The first includes respondents who had valid data on yearly arrest status for Rounds 15 to 20 (2013-2021) and who had data on whether they worked for a military employer between Rounds 2 and 15 (1998-2011) (n=6,994). My second analytic sample is a subsample of my first analytic sample. It is limited to respondents who have been flagged as active duty between 1998 and 2011, had valid data on whether they served in a combat zone, and had valid data on yearly arrest status for Rounds 15 to 20 (n=302). Additionally, several respondents did not indicate that they had ever been on active duty but indicated that they had combat exposure. These cases were coded as active duty and were included in my general sample of veterans and non-veterans.

This research will examine differences in cumulative post-service arrests between non-veterans and veterans, and non-combat veterans and combat veterans from Round 15 (2013) to Round 20 (2021). To establish temporal ordering, data for my measures of military service, active duty status, and combat exposure, are pulled from Rounds 2 (1998) through 15 (2011). My outcome variable, post-service arrest, is measured in Rounds 15 through 20. Respondents arrested before or during Round 15 (2011) are excluded from each subsequent round of biannual arrest, but 2011 is included in my cumulative arrest graphs to establish a baseline.

Measures

Outcome Variable

My primary dependent variable is yearly post-service arrest status, in which NLSY97 respondents are asked, "Since the date of last interview, have you been arrested by the police or

taken into custody for an illegal or delinquent offense (do not include arrests for minor traffic violations)?” Post-service arrest is measured for Rounds 16 (2013) through 20 (2021). Cases that were flagged as arrested by 2011 or on active duty for that particular year were removed from each yearly arrest variable. Missing data for each biannual measure of post-service arrest ranges from 1,945 to 2,285 missing cases.

This study assumes that, over time, respondent dropout from the survey is random. However, to address the possibility that participant withdrawal is not random, a range in which each biannual cumulative arrest proportion could fall is provided for both analytic samples. Upper bounds were constructed by assuming all missing cases on my post-service arrest variables were respondents who were arrested (missings = 1). Conversely, lower bounds were constructed by assuming all missing cases were respondents who were not arrested for that particular year (missings = 0).

Measures of Military Service

To examine the relationship between post-service arrest and active-duty military service during the All-Volunteer Force era, I measure active duty military service from Rounds 2 to 15 (1998-2011). Active duty military service during the All-Volunteer Force era is a binary variable that indicates whether the participant has ever served on active duty and was deployed from Round 2 (1998) to 15 (2011). Two variables are used to construct yearly measures of active-duty military service. The first indicates whether the respondent had a valid employer for a particular year, and the second indicates whether that employer was a military employer. Military employment refers to whether the respondent was currently serving in the Reserves, National Guard, or a regular military branch (Marine Corps, Army, Navy, Air Force, or Coast Guard). Respondents who had both a valid employer and specified that the employer was military were

flagged as on active duty during that round. Respondents who refused to answer, were a non-interview, or who had a valid skip were coded as missing (202 missing cases).

To evaluate the role of AVF military veterans' exposure to violence on post-service arrest, a second measure of military service, combat exposure, is included in the present analysis. Combat exposure was measured in the NLSY97 in 2009, 2010, and 2011, and respondents were asked, "Did you ever serve in a combat or a war zone?" Combat exposure is a binary variable that indicates whether the respondent was exposed to combat during their military service (1998-2011). Respondents who refused to answer the survey question, had a valid skip, or were a non-interview were coded as missing (8,633 missing cases).

Analytic Strategy

Descriptive cumulative arrest figures were generated for both of my analytic samples using biannual arrest data across Rounds 15 to 20. While the NLSY97 has a relatively good participant retention rate, there is still significant attrition. Upper and lower bounds were constructed for each biannual arrest proportion to account for potential variation. This process was done for both analytic samples. Additionally, I examine the association between veterans on active duty between Rounds 2 and 15 (1998-2011) and post-service biannual arrests between Rounds 15 and 20 (2013-2021). I also examine the association between active duty veterans with combat exposure and post-service biannual arrests between Rounds 15 and 2021. Two-tailed T-tests were run for each year of biannual post-service arrest for both of my analytic samples.

Results

Sample Descriptives

Table 1.1 includes descriptive statistics on demographics, family characteristics, features of military service, socioeconomic status, and prior delinquency for my general sample of

veterans and non-veterans. Not all included variables are measured in the same round, and this is indicated in the corresponding **Table 1.5** in the appendix. All variables included in **Table 1.1** are observed before Round 16 (2013), when yearly arrest is first measured, except parental military history. Mothers' and fathers' military experience was only asked in Rounds 16 (2013), 17 (2015), and 18 (2017) of the NLSY97. Most variables are measured at Round 12 (2008), excluding sex, race, parental military service, combat exposure, and military propensity. Sex and race were measured in Round 1 (1997), military propensity was measured in Round 3 (1999), and combat exposure was only measured in Rounds 13 (2009), 14 (2010), and 15 (2011). Results are categorized into those who reported active duty status between Round 2 (1998) and Round 15 (2011) and those who were never on active duty.

My two analytic samples – a sample of veterans and non-veterans and a military subsample – have notable demographic differences from the original baseline sample of NLSY97 respondents. The baseline sample has a much lower proportion of males than my general sample, and this difference is statistically significant ($p < 0.001$). Additionally, at baseline, there was a smaller proportion of NLSY97 respondents who were White ($p < 0.001$), a slightly higher proportion of Black respondents ($p < 0.05$), and a much higher proportion of Hispanic respondents ($p < 0.001$), compared to my general sample of veterans and non-veterans. Comparing the original sample of NLSY97 respondents surveyed in 1997, there were no significant differences in terms of sex and race compared to my military subsample.

Among active duty respondents, the majority of those who served overseas were male (80%), and over half reported being exposed to combat during their service (59%). Slightly more than a third of active-duty respondents indicated that their fathers had military experience (40%), with very few respondents reporting that their mothers served time in the military (6%).

However, compared to non-active duty respondents, the proportion of veterans who had parents with military service is greater than that of non-veterans, and this difference is statistically significant ($p < 0.001$). Interestingly, among active duty respondents, only 12% indicated that they were likely to join the military before their service. Additionally, among participants who stated that they were likely to join the military, only 32% ended up serving between 1998 and 2011. Active duty respondents were slightly more likely to be married than non-active duty respondents, and these differences are statistically significant ($p < 0.001$). Finally, non-veterans were more likely to have been arrested than veterans in my sample, but this difference did not reach the threshold for statistical significance. However, over one-third (37%) of active duty respondents reported being arrested at least once between 1998 and 2008.

Table 1.2 includes descriptive statistics for my second analytic sample, veterans who reported being on active duty between 1998 and 2011 and who indicated whether they had exposure to combat during their service. Among my sample, 55% of combat veterans were White, and 89% were male. These results are similar to those of active duty veterans in my first analytic sample. Non-combat veterans were more likely to have been arrested by 2008 than combat veterans, but this difference was not statistically significant. Finally, only 30% of combat veterans reported being married in 2008 compared to 34% of non-combat veterans.

Cumulative Arrest

Figure 1.1 displays the cumulative proportion of arrests from Round 15 (2011) to 20 (2021) among a sample of NLSY97 respondents who had not been arrested by 2011. Almost a tenth of respondents included in this sample were arrested by Round 20, but arrests seem to accumulate at a slower rate by Round 18. On average, NLSY97 respondents accumulated the most arrests, at the fastest rate, between Rounds 15 and 18. By Round 20 (2021), just under 10%

of NLSY97 respondents reported having at least one arrest between Round 15 and Round 20. Further, by Round 20, respondents are ages 36 to 42, well past the peak of the age crime curve. **Figure 1.2** displays the cumulative proportion of arrests from Round 15 (2011) to 20 (2021) among my first analytic sample, including both AVF veterans and non-veterans, assuming missing data is random. On average, non-active duty respondents consistently accumulate more arrests at a higher rate compared to active duty respondents. Additionally, arrest accumulation among active duty participants seems to plateau earlier than non-active duty participants (around Round 18). When missing cases were assumed to be arrests, active duty respondents still accumulated and reported fewer arrests than non-active duty respondents (**Figure 1.4**). When assuming that those who dropped out of the study did not get arrested, active duty respondents also accumulated and reported fewer arrests than non-active duty respondents.

Figure 1.3 exhibits the cumulative proportion of post-service arrests from Round 15 (2011) to 20 (2021) among my second analytic sample of combat and non-combat AVF veterans. On average, non-combat veterans reported a higher cumulative proportion of post-service arrests than combat veterans. By 2021, 6.8% of the combat group reported being arrested at least once since Round 15 (2011), and 11.7% of the non-combat group reported being arrested at least once. Further, non-combat veterans accumulated arrests for longer than combat veterans, with combat veterans' cumulative arrests plateauing around Round 18. On average, non-combat veterans accumulated arrests at the fastest rate between Round 15 and 16. However, on average, combat veterans accumulated arrests at the fastest rate between Rounds 16 and 17. When missing cases are assumed to be non-arrests, the trend lines for both non-combat and combat veterans remain similar. However, when missing cases are assumed to be arrests, the trend lines change. On

average, combat veterans accumulate more arrests than non-combat veterans, but the rate of accumulation is similar between the two groups.

Two-Tailed T-Test Analyses

Table 2.1 displays the results of two-tailed T-tests by round, examining the association between active-duty status and biannual post-service arrest for my first analytic sample. The only round in which the differences between veterans and non-veterans were significant was Round 20 (2021), the last year when arrest prevalence was observed. Non-veterans were less likely to be arrested by Round 20 than AVF veterans. The magnitude of the difference is small, with about a 0.02 difference in the proportion of arrests, but it is statistically significant at the 0.05 level ($p < 0.05$). Thus, differences in the proportion of post-service arrests between AVF veterans and non-veterans in Round 20 are likely not due to chance. Round 16 did not reach the threshold of statistical significance but warrants further attention ($p < 0.10$). Differences between AVF veterans and non-veterans were not statistically significant across most rounds. Thus, it cannot be determined that active duty veterans are less likely to be arrested than non-active duty veterans.

Table 2.2 displays the results of two-tailed T-tests by round, examining the association between active duty veterans with combat exposure and biannual post-service arrest for my second analytic sample. The only round in which the differences between combat and non-combat veterans were significant was Round 16 (2013), the first year when arrest prevalence was observed. Non-combat veterans were less likely to be arrested in Round 16 than combat veterans. The magnitude of the difference is small, with a 0.01 difference in the proportion of arrests, but it is statistically significant at the 0.05 level ($p < 0.05$). Thus, differences between combat and non-combat veterans' post-service arrests in Round 16 are likely not due to chance. Differences

between combat and non-combat veterans were not statistically significant across most rounds, and it cannot be determined that combat veterans are less likely to be arrested than non-combat veterans.

Discussion

My study descriptively examined modern military service by exploring differences in post-service arrests between AVF veterans and non-veterans, and between combat and non-combat AVF veterans. My first hypothesis was that AVF veterans who served on active duty would be more likely to be arrested after their military service, compared to non-veterans, but this hypothesis was not supported. Across all rounds, only one of my independent sample T-tests was statistically significant. Non-veterans were more likely to be arrested by Round 20 (2021) than AVF veterans, and this difference was statistically significant at the 0.05 level ($p < 0.05$). AVF veterans appeared to be less likely than non-veterans to be arrested, and these results stayed consistent even after adding upper and lower bounds to address attrition in the NLSY97. However, overall, no conclusions could be made regarding differences in post-service arrest prevalence between AVF veterans and non-veterans, as these differences were not significant across most rounds.

My second hypothesis, that among AVF veterans who served on active duty, combat veterans will be more likely to be arrested after their military service than non-combat veterans, was also not supported. Only Round 16 (2013) was significant across all rounds of post-service arrest. In Round 16, non-combat veterans were more likely to be arrested than combat veterans, and this difference was statistically significant at the 0.05 level ($p < 0.05$). Interestingly, when missing cases were assumed to be arrests, the trend lines between the two groups switched, with combat veterans having a higher proportion of cumulative arrests than non-combat veterans.

However, these differences were not statistically significant. While this change indicates that small sample sizes may be skewing the data, results should be interpreted cautiously. This limitation will be discussed further, along with other limitations to my study, but my findings warrant further research on the association between AVF veterans' combat exposure and criminal justice involvement. Additionally, this research was purely descriptive and did not control for numerous factors that may have influenced the results. To allow for a more convincing set of conclusions, I would need to control for prior criminal justice involvement, marital status, socioeconomic status, parental military history, likelihood of military service, employment, and other characteristics of military service, such as branch, length served, etc.

Overall, my results did not support my two hypotheses: that AVF veterans would be more likely than non-veterans to be arrested after their service, and that among AVF veterans, combat veterans would be more likely to be arrested than non-combat veterans. Visually, it appears that, on average, AVF veterans are less likely to be arrested after their service than non-veterans. However, because independent sample T-tests were not significant for most rounds, these findings suggest the need for more research on the association between AVF veterans and offending.

One potential explanation for my results is that AVF veterans may have advanced and revised transitional programs in place that help them cope with the negative effects of their military service. The U.S. revised several veteran assistance programs following the wars in Iraq and Afghanistan due to concerns that veterans who served in the military after 9/11 needed additional reintegration resources (Dortch, 2012). These revisions included the drafting of the Post-9/11 GI Bill, which went into effect August 1st, 2009, and provided educational benefits to veterans who served after September 10, 2001. These benefits included funding for

undergraduate and graduate education (tuition, fees, housing, books, and supplies), assistance with paying testing/certification fees, and relocation compensation. Additionally, Veteran Readiness and Employment (VR&E) benefits were expanded through the Post-9/11 GI Bill. VR&E aids veterans who served after 9/11 and need additional employment resources due to their service-related disability status (Bell et al., 2013). Qualifying veterans receive vocational training, job placement assistance, and education to help build transferable skills.

Contemporary military service may also serve as a bridge to future employment opportunities in law enforcement and the federal government. Many federal law enforcement and intelligence agencies offer veteran preference pathways, providing a viable employment trajectory for AVF veterans. Increases in post-deployment benefits, such as education and transitional work programs, may provide AVF veterans with a heightened ability to reintegrate and reestablish social and institutional connections. However, despite these occupational and educational opportunity advancements, many veterans who served in Afghanistan and Iraq require intensive mental health resources in combination with traditional rehabilitation programming (Tanielian & Jaycox, 2008). Many veterans do not seek out services upon their return home, lack clarification on the services available, or are not eligible for the Post-9/11 GI Bill benefits. Thus, it is imperative that future research not only explore the quality of AVF veterans' military service but also the reliability, efficacy, and availability of post-service rehabilitative services.

Changes in modern warfare have also led to changes in the kind of injuries sustained by contemporary military cohorts. Twentieth-century warfare was primarily between states, but after September 11, 2001, wars involving U.S. troops have been increasingly asymmetric, involving non-state actors and different combat environments (Sreenivasan et al., 2013).

Improvised explosive devices (IEDs) have become more sophisticated and used more frequently than in the past, especially by terrorist organizations (Sollinger et al., 2008). As a result, a higher proportion of Afghanistan and Iraq war veterans suffer from blast injuries, leading to higher rates of posttraumatic stress disorder and traumatic brain injury (TBI) (Sreenivasan et al., 2013).

Combat units in Afghanistan and Iraq spent considerably more time overseas, and when they were in the United States, more time was spent training for their next deployment (Sollinger et al., 2008; Brown, 2008). Medical advancements and improved body armor have reduced the number of military personnel killed in action, but have increased the number of veterans returning home with severe physical disabilities that impair reintegration into conventional society. These changes highlight a need to reevaluate modern military service, and future research should focus on the specific characteristics of AVF veterans' military service.

Finally, my study was unable to account for the effect of self-selection into military service, and this may have had an impact on my findings. Some AVF veterans may choose to enter the military because of the employment opportunities provided to them after their service (Abeling-Judge, 2020). Additionally, more stringent recruitment qualifications and the rising prestige of military academies have impeded the ability of individuals with offending histories to join the armed forces (Greenberg & Rosenheck, 2011). Thus, future research should address self-selection effects in their examination of military service during the AVF era.

Visually, while not statistically significant across most rounds, combat veterans were less likely than non-combat veterans to be arrested after their military service. This result is contradictory to much of the prior research on the relationship between AVF veterans' combat exposure and post-service offending. A potential explanation for my results is that combat veterans may have stronger social bonds than non-combat veterans. The maintenance of social

bonds is extremely important in reducing the likelihood of future offending (Sampson & Laub, 1993). Those who serve in combat units report sharing a stronger sense of collective identity and a common purpose than non-combat veterans (Cacioppo et al., 2011). The bonds formed in combat units are especially strong, and many veterans who served on active duty and witnessed violence describe those they served with as their families. This shared unity helps foster social resilience, which is the capacity for both an individual and a group to overcome adversity. Combat units may also foster social connectedness (Kintzle et al., 2018). Additionally, values like responsibility, leadership, and structured discipline are integral to the development of social resilience and social connectedness. These values are more salient among combat units, allowing these servicemembers to return to civil society with enhanced resilience, increased self-control, and a stronger sense of purpose, which are all protective factors from offending. Finally, combat veterans may be provided with more reintegration resources than non-combat veterans. This is understandable, as combat veterans are more likely to suffer from PTSD, TBI, or severe physical disabilities that may impede post-service reintegration (Cesure et al., 2022). However, the limited prior literature on combat veterans has typically found combat exposure to be related to future offending. Thus, more research needs to be conducted examining the effect of exposure to violence among military veterans serving during the AVF era.

Limitations

The primary limitations of my study are a limited military sample size, attrition in the NLSY97, the measurement of combat exposure, and the utilization of a self-reported indicator of post-service arrest. A very small proportion of NLSY97 respondents are veterans, and very few of these individuals experienced combat while overseas. Thus, there is higher variability within each of my analytic samples, as well as an increased risk of bias. My analytic samples are likely

not representative of the larger veteran population, reducing the generalizability of my findings. Additionally, while the NLSY97 has an acceptable participant retention rate, there is still significant attrition. While my study attempted to address this by providing upper and lower bounds of missing data for both of my analytic samples' post-service arrest figures, there were still a significant number of respondents who dropped out of the study by Round 20. The loss of study participants over time increases the potential of selection bias and reduces the generalizability of my results. Further, there may be measurement error due to how respondents were asked about their combat exposure. The NLSY97 does not specify what exactly "combat exposure" is, and respondents may have different interpretations of what qualifies as combat exposure. This is evident as several respondents indicated that they had combat exposure, but did not indicate that they had ever served on active duty between 1998 and 2011. Finally, my study used a self-reported measure of arrest, not official arrest records, and was unable to differentiate between violent and non-violent offenses. Participants may have misreported their arrest status or potentially misunderstood what qualifies as an arrest.

Conclusion

The purpose of this research was to examine differences in post-service arrest between AVF veterans and non-veterans and to evaluate differences within AVF veterans by examining active-duty veterans with and without combat exposure. One of the central purposes of my study was to address the critical need to examine the quality of modern military service and how individual military characteristics shape post-service outcomes. This study adds to the limited body of literature on AVF veterans and emphasizes a gap in prior literature that neglects to account for variation in individual military experiences. Future research should focus on other characteristics of military service, such as length of deployment, time between deployments, and

branch of service. Further, more research needs to be conducted examining the extent of combat exposure, not simply its prevalence. There may be differential impacts of witnessing a violent act, being exposed to hostile fire, experiencing the death of someone in your unit, suffering a blast injury, etc. To understand the potential risk factors for post-service crime commission during the AVF era, more research needs to be conducted examining the specific characteristics of individual military experience. By examining the quality of military service, policymakers will be better equipped to create tailored programs for returning veterans and reduce the potential negative consequences of military service.

Appendices

Table 1.1. General Sample Descriptive Statistics: NLSY97 Veteran and Non-Veteran Respondents

	Active-Duty			Non-Active-Duty			T-Test		
	Observations	Mean	Range	Observations	Mean	Range	T-stat	P-value	
<i>Sex</i>									
Male	503	0.801	0, 1	8,279	0.495	0, 1	-13.470	0.000	***
<i>Race</i>									
White	503	0.549	0, 1	8,279	0.517	0, 1	-1.388	0.165	
Black	503	0.233	0, 1	8,279	0.261	0, 1	1.400	0.162	
Hispanic	503	0.209	0, 1	8,279	0.213	0, 1	0.236	0.813	
Other Race	503	0.010	0, 1	8,279	0.009	0, 1	-0.173	0.863	
<i>Family characteristics</i>									
Father military service	437	0.398	0, 1	6,728	0.237	0, 1	-7.606	0.000	***
Mother military service	456	0.055	0, 1	7,213	0.016	0, 1	-5.860	0.000	***
Marital status	487	0.37	0, 1	7,821	0.229	0, 1	-7.116	0.000	***
<i>Military characteristics</i>									
Military propensity	403	0.32	0, 1	6,353	0.147	0, 1	-9.299	0.000	***
Combat Exposure	302	0.593	0, 1	49	0	0, 1	-8.420	0.000	***
<i>Socioeconomic status</i>									
Employment	438	0.961	0, 1	6,972	0.859	0, 1	-6.097	0.000	***
AFDC status	482	0.004	0, 1	7,591	0.023	0, 1	2.784	0.005	**
<i>Prior delinquency</i>									
Prior arrest	503	0.368	0, 1	8,279	0.482	0, 1	-0.115	0.909	

Note: Most descriptives are measured at Round 12 (2008) using data from the National Longitudinal Survey of Youth 1997. Means are reported for binary variables. AFDC status indicates whether a respondent received Aid to Families with Dependent Children. T-Tests compare means between active duty and non-active duty groups. Statistical significance: *p<0.05, **p<0.01, ***p<0.001

Table 1.2 Military Sample Descriptive Statistics: NLSY97 Respondents Who Served on Active Duty Between 1998 and 2011

	Combat Exposure			Non-Combat Exposure			T-Test		
	Observations	Mean	Range	Observations	Mean	Range	T-stat	P-value	
<i>Sex</i>									
Male	179	0.883	0, 1	172	0.663	0, 1	-5.097	0.000	***
<i>Race</i>									
White	179	0.547	0, 1	172	0.494	0, 1	-0.998	0.319	
Black	179	0.235	0, 1	172	0.297	0, 1	1.313	0.190	
Hispanic	179	0.218	0, 1	172	0.203	0, 1	-0.330	0.742	
Other Race	179	0.000	0, 1	172	0.006	0, 1	1.020	0.308	
<i>Family characteristics</i>									
Father military service	160	0.388	0, 1	151	0.371	0, 1	-0.301	0.763	
Mother military service	166	0.042	0, 1	161	0.056	0, 1	0.574	0.566	
Marital status	179	0.296	0, 1	171	0.339	0, 1	0.864	0.388	
<i>Military characteristics</i>									
Military propensity	141	0.319	0, 1	134	0.373	0, 1	0.939	0.349	
<i>Socioeconomic status</i>									
Employment	162	0.951	0, 1	158	0.957	0, 1	0.214	0.831	
AFDC status	179	0.006	0, 1	172	0.012	0, 1	0.613	0.540	
<i>Prior delinquency</i>									
Prior arrest	179	0.374	0, 1	172	0.419	0, 1	0.847	0.398	

Note: Most descriptives are measured at Round 12 (2008) using data from the National Longitudinal Survey of Youth 1997. Means are reported for binary variables. AFDC status indicates whether a respondent received Aid to Families with Dependent Children. T-Tests compare means between combat and non-combat groups. Statistical significance: *p<0.05, **p<0.01, ***p<0.001

Table 2.1. T-Test Results by Active Duty Status (Arrest)

Round	Active Duty		No Active Duty		Mean Difference	
	Mean	(S.D.)	Mean	(S.D.)		
16	0.017	(0.130)	0.035	(0.184)	0.018	^
17	0.019	(0.137)	0.026	(0.161)	0.026	
18	0.025	(0.157)	0.023	(0.149)	-0.002	
19	0.012	(0.110)	0.019	(0.136)	0.007	
20	0.003	(0.050)	0.019	(0.135)	0.016	*

Note: Statistical significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2.2. T-Test Results by Combat Exposure (Arrest)

Round	Combat		No Combat		Mean Difference	
	Mean	(S.D.)	Mean	(S.D.)		
16	0.007	(0.082)	0.059	(0.237)	0.053	*
17	0.039	(0.195)	0.026	(0.160)	-0.013	
18	0.028	(0.164)	0.029	(0.168)	0.001	
19	0.013	(0.114)	0.022	(0.146)	0.008	
20	0.007	(0.084)	0.000	(0.000)	0.000	

Note: No arrests reported in 2021 for non-combat group. Statistical significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1.1. Cumulative Arrests From 2011 to 2021 Among a Sample of NLSY97 Respondents

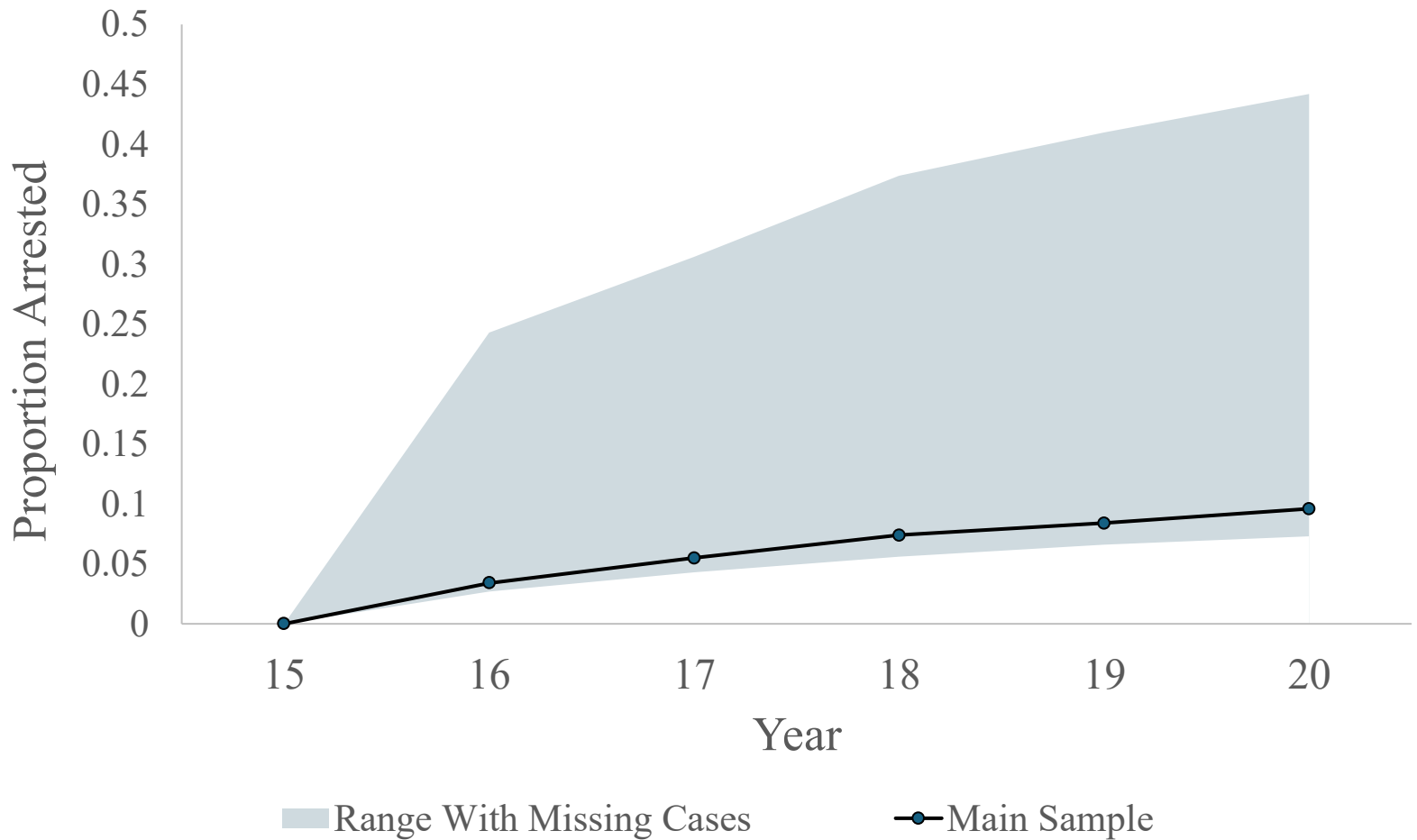


Figure 1.2. Cumulative Arrest For Round 15 (2011) to 20 (2021) of a Sample of NLSY97 Veterans and Non-Veterans

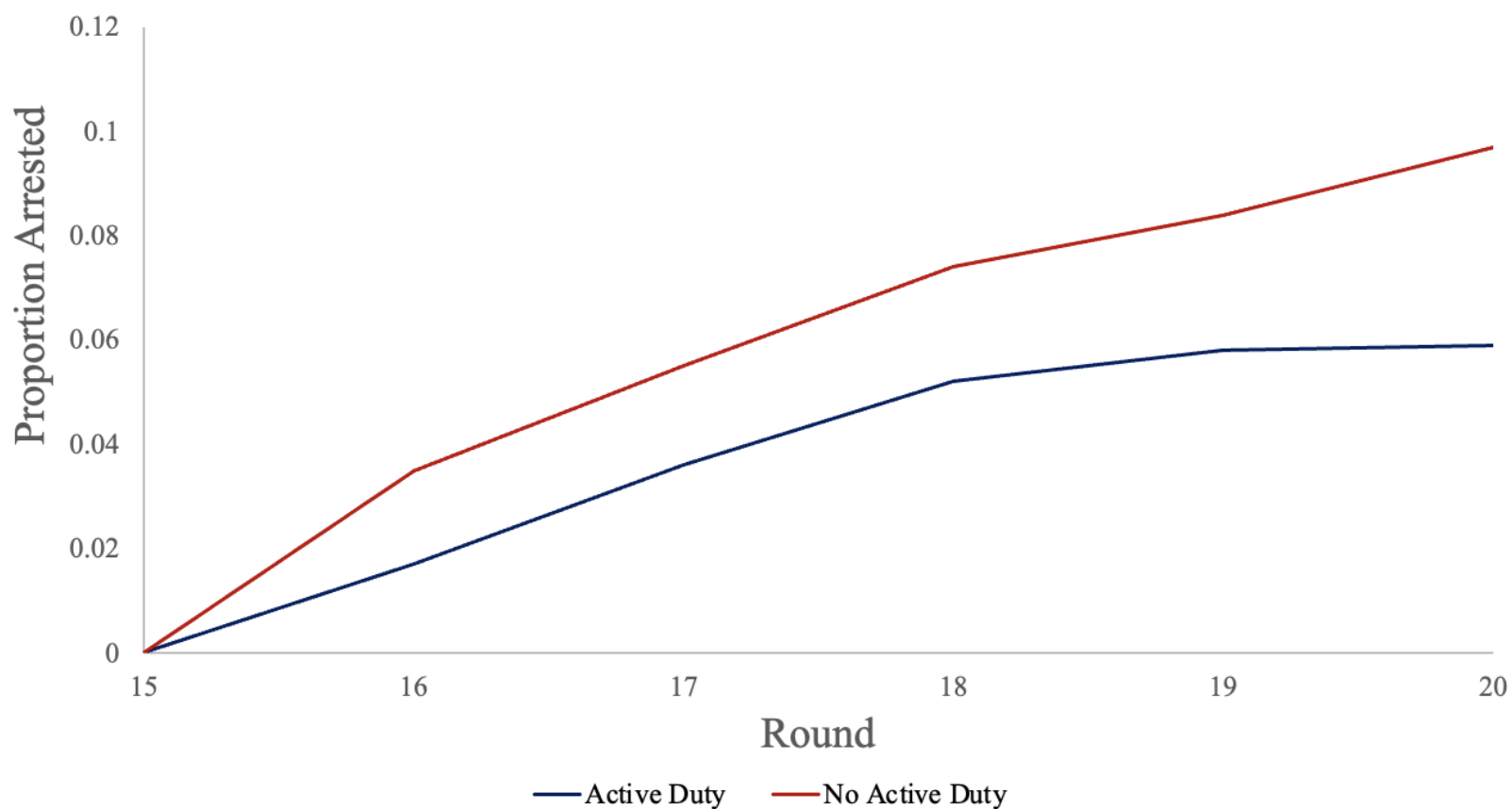


Figure 1.3. Cumulative Arrests for Round 15 (2011) to 20 (2021) of a Sample of NLSY97 Veterans by Combat Exposure

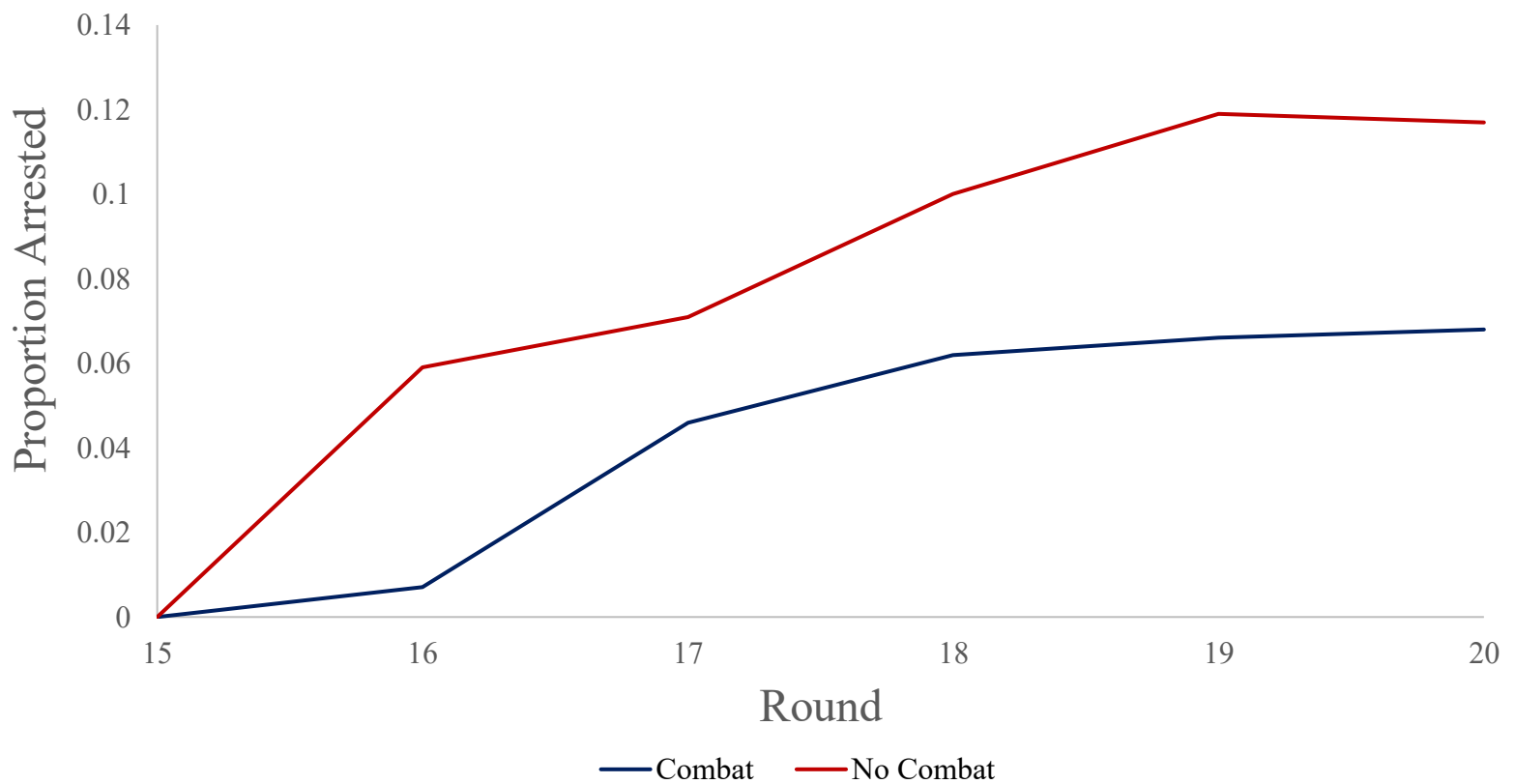


Figure 1.4 Cumulative Arrests For Round 15 (2011) to 20 (2021) of a Sample of NLSY97 Veterans and Non-Veterans With Upper and Lower Bounds

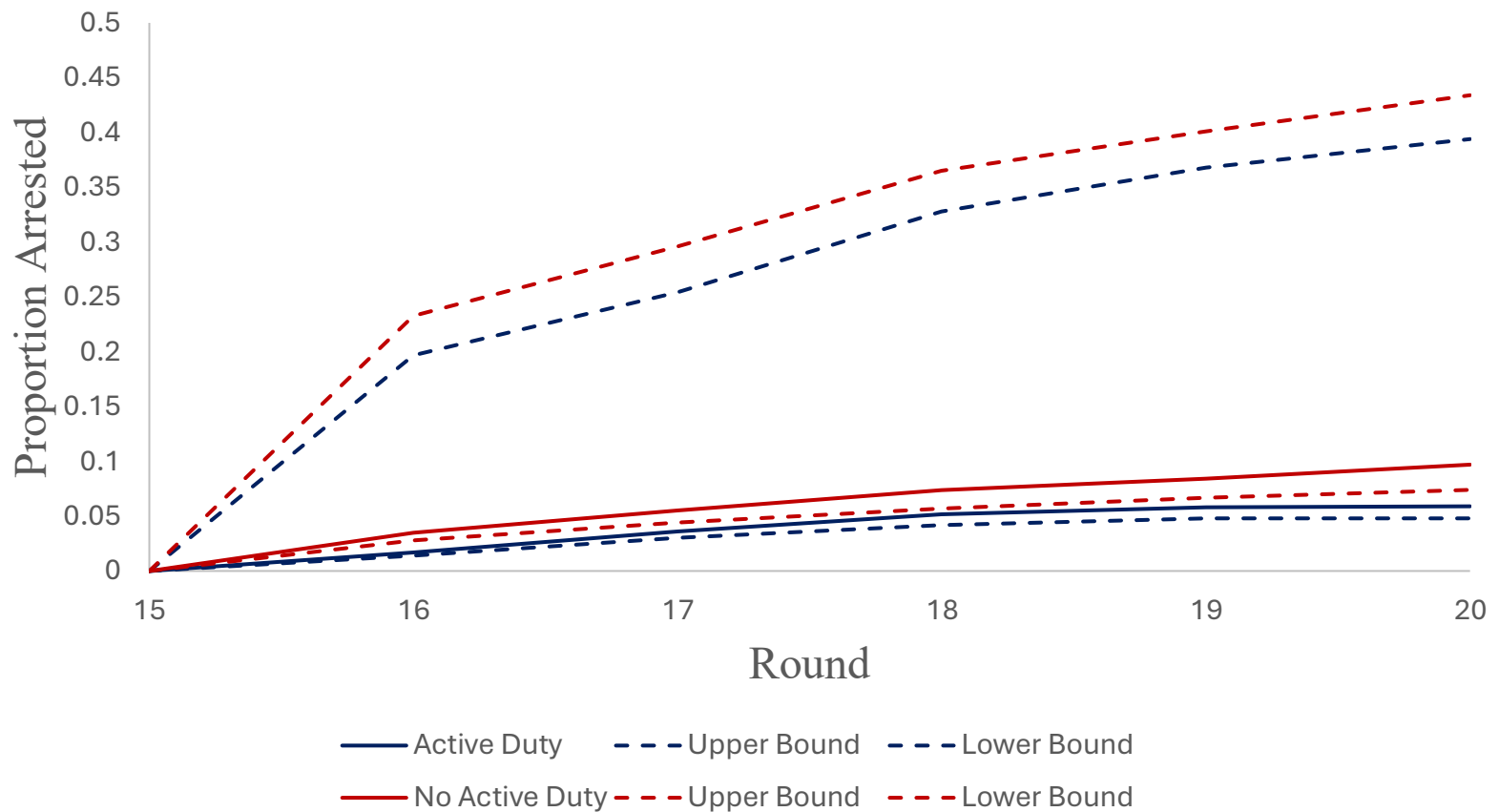


Figure 1.5. Cumulative Arrests for Round 15 (2011) to 20 (2021) of a Sample of NLSY97 Veterans by Combat Exposure With Upper and Lower Bounds

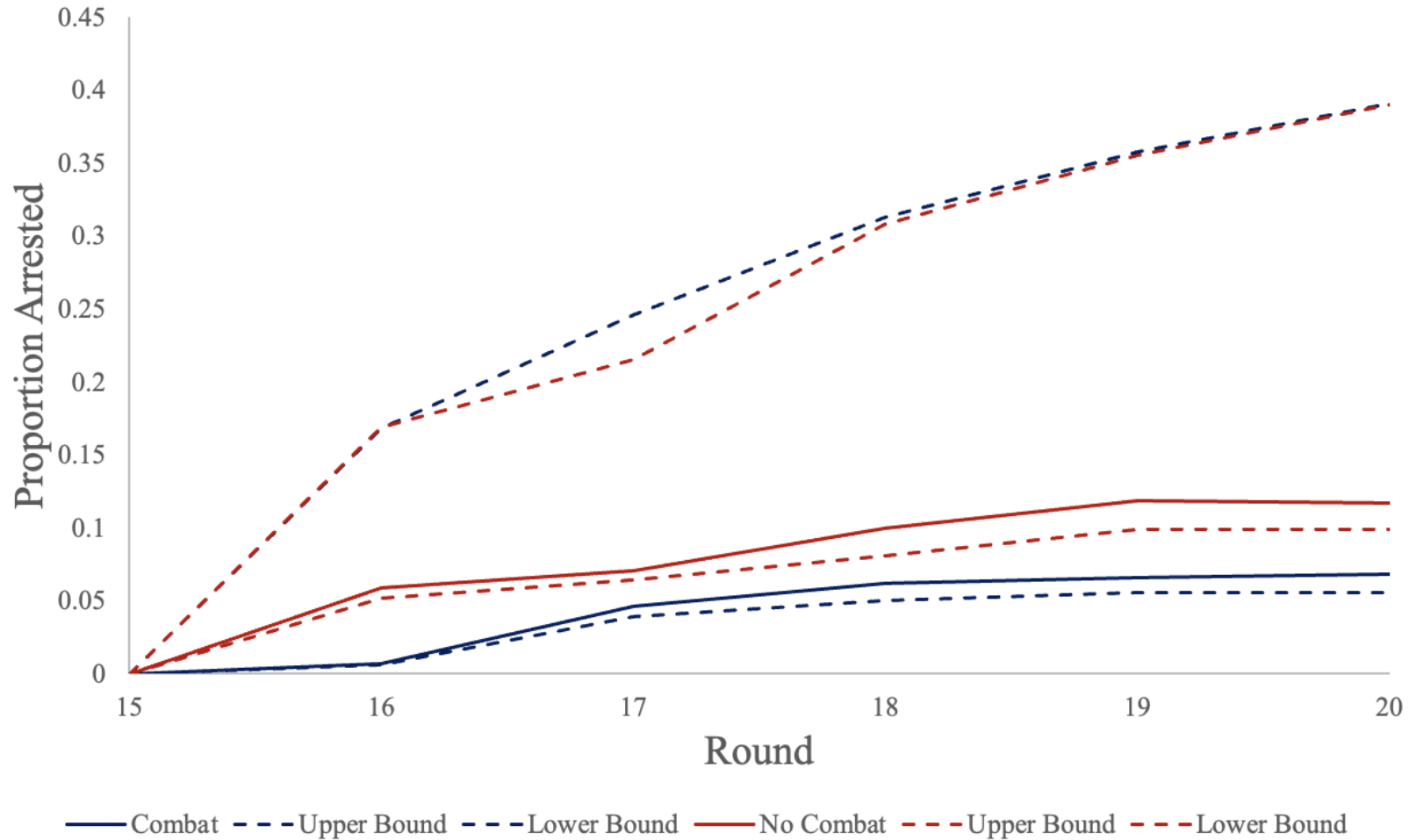


Table 1.5: Description of Variables Used for Sample Descriptives

Variable	Description
Sex, Round 1 (1997)	Sex is coded as a binary variable, 1 indicating male and 0 indicating female.
Race, Round 1 (1997)	Race is separated into four variables - White, Black, Hispanic, and Other Race - and each are binary variables: 1 indicating White and 0 indicating non-White, 1 indicating Black and 0 indicating non-Black, 1 indicating Hispanic and 0 indicating non-Hispanic, 1 indicating Other Race and 0 indicating Other Race.
Father military service, Rounds 16 (2013), 17 (2015), and 18 (2017)	Father's military status is a binary variable, combining data from Rounds 16-18, coded 1 for any father military service and 0 for no father military service.
Mother military service, Rounds 16 (2013), 17 (2015), and 18 (2017)	Mother military status is a binary variable, combining data from Rounds 16-18, coded 1 for any mother military service and - for no mother military service.
Marital status, Round 10 (2008)	Marital status is a binary measure, coded 1 for married and 0 for unmarried.
Military propensity, Round 3 (1999)	Military propensity is a binary variable. Answer categories "very unlikely," "unlikely," and "undecided" were coded as 0, and variable categories "likely" and "very" likely were coded as 1.
Combat exposure, Rounds 13 (2009), 14 (2010), and 15 (2011)	Combat exposure is a binary variable, combining data from Rounds 11-13, coded 1 for any combat exposure and 0 for no combat exposure.
Employment, Round 12 (2008)	Employment is a binary variable, coded 1 for employed and 0 for unemployed.
AFDC status, Round 12 (2008)	AFDC status is a binary variable, coded 1 for any AFDC and 0 for no AFDC.
Prior arrest, Round 12 (2008)	Prior arrest is a binary indicating whether the respondent was ever arrested by 2008, coded 1 for arrest and 0 for no arrest.

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