EXAMINING THE IMPACT OF MILITARY EXPERIENCE ON CRIME: ISSUES OF RACE AND THE LIFE COURSE

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EXAMINING THE IMPACT OF MILITARY EXPERIENCE ON CRIME: ISSUES OF RACE AND THE LIFE COURSE

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Dissertation

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ABSTRACT

Upon returning home from serving, military members experience several hardships including posttraumatic stress disorder, substance and alcohol use, and a higher risk of involvement in crime. There has long been an interest in criminology pertaining to the relationship of military experience and crime. However, the research examining this relationship is largely inconsistent and is made even more unclear when taking combat and race into account. In this dissertation, I address these issues and use a quasi-experimental methodological technique that aims to overcome these inconsistencies. Using life course perspective and data derived from the National Longitudinal Survey of Youth, Child and Young Adult sample (NLSY-CYA) 1986-2014, I examine the impact serving in the military has on individuals and how this varies by race. I do this by first matching individuals based on demographics, cognitive predictors, and childhood experiences and behaviors to obtain propensity scores where the binary treatment indicator is military experience (treatment) and no military experience (control). Then, I examine criminal offending differences between military members and civilians. Finally, I examine just the military sample to develop a greater understanding of the military experience and how combat and race impacts crime. This dissertation contributes not only to the literature in criminology and the life course perspective but also to military research and race literature.
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CHAPTER I
INTRODUCTION

Since 2001, the United States has been involved in three wars—the War in Afghanistan (2001-2016), the Iraq War (2003-2011), and the War on Terror, particularly against ISIL (2014-present). The United States has been involved in major wars prior to this era but post September 11th is the first time where wars overlap with one another. For instance, World War II (WWII) lasted from 1941-1945, the Korean War was from 1950-1953, the Vietnam War was from 1955-1975, the Persian Gulf War was from 1990-1991, and the Kosovo War only lasted a few months in 1999. Thus, the United States has never been involved in more than one war at a time until after 2001. This situation means that we are drawing heavily on our military forces, which can have a number of both short and long term negative effects on the men and women who serve.

In 2015, Politico (Spencer 2015) published an article detailing the declining number of military members. Spencer (2015) was examining military enlistment trends and argued that by 2017 the number of active military members would be the lowest it has been since 1940. In fact, as of 2016 the number of active duty enlisted members and officers decreased 9.09% since 2010 and the number of reserve enlisted members and officers also decreased 4.54% since 2010 (Department of Defense 2018). It appears that 2016 marks the year in which the fewest number of active duty members and reserves are enlisted within the military since 2000 (Department of Defense 2018). In 1972, the
United States military did away with the draft and instead became an all-volunteer force (Spencer 2015). People were no longer required to enlist but the individuals that wanted to volunteer to serve would do so. However, the ongoing wars on multiple fronts, and the decline in enlistments means that keeping adequate troops overseas is problematic. In addition, many individuals that have been on active duty, often for several tours of duty, experience physical and mental injuries that hinder their abilities to continue serving (Gansel 2013; Killgore et al. 2008; Worthen 2011).

Along with physical injuries, military members suffer from additional negative side-effects of service. Research has shown that there is a strong connection between military service and later posttraumatic stress disorder (PTSD) (Gansel 2013; Killgore et al. 2008; Köbach, Schaal, and Elbert 2015; MacManus et al. 2013; Worthen 2011). In addition, there has long been an acknowledged relationship with service in the military and alcohol misuse (MacManus et al. 2013). There has also been a common interest among researchers in studying the impact of military service on crime. However, this research has been inconsistent. Some researchers have found that those who serve in the military are likely to engage in criminal offending after their service (BMJ 2013; Bronson, Carson, Noonan, and Berzofsky 2015; Elder Jr. 1998; Köbach et al. 2015; MacManus et al. 2013; Rohlf 2010; Worthen 2011) and other researchers have found that military service does not affect the likelihood of criminal offending (Rand 1987; Teachman and Tedrow 2016). This relationship is less clear when taking specific military aspects, like combat, into account and made to be even less concrete when taking race into account as well.
Some studies show that Black military members who experienced combat are less likely to engage in violent behavior after serving (Bouffard 2005). Other research has shown that compared to White military members, Black military members who experienced combat are more likely to engage in violent behavior after serving (Rohlfs 2010). Furthermore, Rand (1987) found that White military members are more likely to desist from crime after serving compared to Black military members. However, when examining a group of offenders, there are more White military members compared to Black and these White military members account for more of the overall offenses (Rand 1987). Therefore, it is difficult to conclude how the military experience varies by race because the research on it is largely inconsistent.

The primary purpose of this dissertation is to examine the connection between military service and the likelihood of later life offending. MacManus et al. (2013) argue that there is concern that individuals returning home from serving in Iraq and Afghanistan are at greater risk for offending compared to military members returning home from other locations. For my study, I extend the existing literature by comparing individuals who have served in the military to individuals who have not and how they differ with regards to criminal offending.

The second goal of this study is to compare how military experience may vary by race. As of 2016, 70.6% of the total military population were White and only 17.6% of the total military population were Black (Department of Defense 2018). Although there are more White military members, a higher rate of Black individuals actually enlists (Bachman, Segal, Freedman-Doan, and O’Malley 2000; Elder Jr., Wang, Spence, Adkins, and Brown 2010; Jackson, Thoemmes, Jonkmann, Lüdtke, and Trautwein 2012; Johnson
A higher rate of Black individuals joining the military can infer as to why individuals join the military in the first place, what their experiences within the military might be like, and how the military might affect other aspects of their lives.

Craig and Connell (2015) argue that individuals experience the military differently depending on their social and demographic characteristics, and researchers do not often take race into account when examining military experiences. Craig and Connell (2015) argue that race and context are important and that the reasons why individuals decide to join the military vary by these traits. This links to the idea of intersectionality, where many factors, like race, class, and gender, influence life patterns and life outcomes. For instance, Melin (2016) found that Black women join the military to better their own lives and the lives of their children. Therefore, Black individuals, particularly Black women, may report having better life outcomes after serving in the military compared to Black individuals who did not serve. Based on Melin’s (2016) study, Black military members may also report better life outcomes after serving in the military compared to other races within military. It is unclear, however, if it is the military itself which influences these differences or other correlates. Therefore, the overarching goal of this dissertation is to determine how the military affects life outcomes.

Past work has established that military experience is related to crime (BMJ 2013; Bronson et al. 2015; Elder Jr. 1998; Köbach et al. 2015; MacManus et al. 2013; Rand 1987; Rohlfs 2010; Teachman and Tedrow 2016; Worthen 2011). The current project, in addition to examining specific race effects, contributes to this work by applying the life course theory to this phenomenon. This theory argues that individuals experience life events that may shift the trajectory of their lives. In addition, individuals experience
transitions and turning points which influence their later life opportunities and outcomes. This is applicable to military experiences because the military can serve as a transition and experiences within the military could serve as a turning point for individuals where what happens to them influences their trajectory and future behavior like criminal offending.

In the remaining sections of Chapter One I provide an overview of the theoretical framework used throughout this dissertation, life course perspective, and why it is an appropriate theory to discuss military and crime. In addition, I provide an overview of the data and a summary of each chapter. Finally, I discuss the intended contributions of this dissertation.

THEORETICAL FRAMEWORK

Researchers have used a variety of theories to show the connection between military service and criminal behavior. Some researchers have focused more on psychological theories and perspectives, as evidenced in the literature on PTSD and military service (Gansel 2013; Killgore et al. 2008; Köbach et al. 2015; MacManus et al. 2013) and other researchers have used sociological theories to explain military and crime. For instance, Bucher (2011) used strain theory to discuss the relationship between military service and offending and argued that military life can produce sources of strain. These sources would mainly include issues of mobility—time spent away from one’s family, relocation, and deployment. In addition, Bucher (2011) also applies the aspect of being exposed to combat and how that produces strain as well. These strains stem from the demands of military life and could affect other aspects of one’s life. For example, research has shown that individuals who have been exposed to combat are likely to have
marital problems that can lead to divorce (Bouffard 2005; MacLean and Elder Jr. 2007). Bucher (2011) makes a compelling argument for discussing military life with strain theory, but when studying military and later life outcomes like crime, as this dissertation does, the life course perspective is a good option.

*Life Course Perspective*

The life course can be described as the pattern of events that transpire throughout one’s life that influences further life events (Elder Jr. 1985). Predisposed aspects like sex, race, and class can affect one’s life course. For instance, depending on one’s race they will likely have different opportunities available to them compared to someone else of a different racial group. This is also often associated with class. More minorities are from a lower socioeconomic status (SES) and this can affect their future behavior and future life outcomes. In addition, trajectories, transitions, and turning points also affect one’s life course as well (Elder Jr. 1985). Trajectories stem from long-term behavioral patterns like engaging in different kinds of lifestyles. Such lifestyles include marriage, criminal behavior, military life, work-life, and parenthood (Sampson and Laub 1992/1993). These trajectories usually transpire over a long period of time within one’s life (Sampson and Laub 1992/1993). For instance, when one enters adulthood and chooses a career, traditionally the goal would be to stay in that line of work for a long time, hopefully until they reach retirement. In addition, when one becomes a parent, they are responsible for that child until the child reaches adulthood. Careers and parenthood are examples of trajectories as they show how a specific pathway can last for a while and influence other aspects of life.
Depending on one’s life phase, there are certain expectations one should attain to move forward. For instance, in childhood there are expectations that children should meet to progress according to society’s standards. One of these expectations is children learning what is appropriate behavior and parents/guardians disciplining behavior that is deemed unacceptable or inappropriate. Children rely on their parent’s guidance and socialization techniques in childhood and adolescence. In adolescence, there are further expectations that society and parents hold individuals accountable to. As one progresses through adolescence and they start to reach adulthood, individuals are expected to go to college, find a career, get married, and have children, known as age-graded normative events (Baltes 1987; Hogan 1978). Once these individuals have children of their own, they will instill these expectations within their children for them to proceed throughout the life course according to society’s standards. There are different expectations depending on which life stage an individual is in. In addition, the sequence (i.e., the time order) of age-graded normative events has also shown to be important to the life course (Hogan 1978). That is, if one gets married before finishing school or finishing military service, they are more likely to experience disruption later in life compared to someone who waited longer for these events (Hogan 1978). Meeting these expectations is simply not enough, but meeting them and doing them in order is essential.

One of the most prominent versions of life course theory was the one detailed by Sampson and Laub (1993). Sampson and Laub (1993) continued the work of Glueck and Glueck (1950) where they examined a matched sample of 500 delinquent and non-delinquent boys. Glueck and Glueck (1950) matched these boys based on pre-existing factors from their backgrounds, like race, class, and several personality and behavioral
factors. Sampson and Laub (1993) extended this study to examine what it was about these individual’s lives that made them resort to delinquent behavior. Thus, Sampson and Laub (1993) were interested in examining the life course perspective and criminal behavior through longitudinal data. They wanted to be able to account for childhood behavioral problems, delinquency in adolescence, and criminal tendencies in adulthood (Sampson and Laub 1993:2). Their main interest was wanting to be able to look at an individual starting when they were young and see their development as the child aged. That is, Sampson and Laub (1993) wanted to be able to tell the life course trajectory of individuals who showed problem behaviors at a young age and how that affected their later life chances and behaviors. They were also interested in seeing how different life events could help shape life outcomes. Such events include attending college, marriage, career choices and opportunities, and even military service. These different life events could shift individual’s trajectories.

Transitions are marked by shorter life events like one’s first marriage, one’s first job, and one’s first deployment that influence the overall trajectory of their life (Elder Jr. 1985; Sampson and Laub 1992). Transitions are embedded within trajectories (Elder Jr. 1985; Laub, Sampson, and Sweeten 2008). For instance, when one first gets a job when they are younger, perhaps the job they work in will give them opportunities to other advancements. Networking, for instance, would be a way for an individual to transition into their career path. They spent a short period of time in their first job but because of the networks they gained in that job, they were able to reach a career path—thus, reaching a trajectory. In addition, individuals who join the military may enter that institution assuming that it will be a trajectory but gain skills within the military that help
their employment opportunities. Therefore, individuals could use the military as a transition into other career paths or as a means to gain social capital like education, earning a decent income, or learning a new skill (Sampson and Laub 1996).

Trajectories and transitions are related concepts that can affect one’s life stage. The previous example with one’s first job and through networking found their career shows how trajectories and transitions can serve as turning points for an individual and what they experience can redirect their own path (Elder Jr. 1985; Sampson and Laub 1992/1993). In addition, transitions and turning points are similar concepts as well because, “All transitions are potential turning points” (Hareven and Masaoka 1988:274). Hareven and Masaoka (1988) discussed when a transition becomes a turning point. “Individuals or families may experience turning points under the impact of internal family crises, such as the premature death of a close family member, illness or physical handicap, loss or damage of property, or loss of a job” (Hareven and Masaoka 1988:275). For example, a transition may serve as an event that shifts one’s trajectory and a turning point might be an experience within that transition that shifts one’s trajectory more. With the example from Hareven and Masaoka (1988), the transition event is having a family (i.e., getting married, having children). This transition event shifts one’s trajectory. The turning point is the crisis as suddenly suffering from an illness or handicap, for example, would further shift the trajectory.

Elder Jr. (1985) and Sampson and Laub (1992/1993) argue that it is when the trajectories, transitions, and turning points occur that is important in the paths that one takes. How old an individual is when events occur likely will affect their future behavior due to when they experienced the event. Thus, life course perspective also makes an
argument for an age-graded theory. Depending on how old an individual is, they will experience trajectories, transitions, and turning points in one phase of their life and will likely wait to experience other trajectories, transitions, and turning points in different phases. This, in turn, may result in disruption in other aspects of individual’s lives (Hogan 1978).

Another central aspect of life course perspective is that it is an integrated theory. There are elements of several theories incorporated into the life course perspective, two of these theories being social control theory and self-control theory. Attachments are a crucial component of social control theory (Hirschi 1969) and they are also important in life course theory. Depending on one’s age, they will have stronger attachments to specific individuals (Hirschi 1969). In childhood, parents are the strongest attachments a child has—a child depends on a parent to survive. Research has shown that weak parental attachments in childhood and adolescence is associated with adult crime (Hirschi 1969). In addition, Sampson and Laub (1993) argued that weak peer associations in adolescence may lead individuals down a path of negative social behavior like crime. Attachments are also related to the development of self-control. How a parent disciplines their child, for example, influences the child’s ability to learn what is considered to be acceptable behavior. Depending on the discipline practice, a child may proceed into adolescence and adulthood with social problems if they were disciplined harshly and developed a low level of self-control (Gottfredson and Hirschi 1990). Whereas, a child that was disciplined positively may proceed into adolescence and adulthood with a high level of self-control and they might have better life outcomes because of it (Gottfredson and Hirschi 1990). Thus, social control and self-control are incorporated with life course
because experiences in childhood and adolescence can affect one’s pathway and influence behavior in adulthood.

Criminal behavior can start off as a transition, being part of an individual’s life for a short period of time, but it could also lead into a trajectory, being part of an individual’s life for a long period of time. Moffitt (1993/2008) examined antisocial behavior among adolescents and discussed life-course persistent offenders and adolescence-limited offenders. Life-course persistent offenders are those who engage in delinquent activities all throughout their lives—making criminal behavior more of a trajectory. Adolescence-limited offenders deals more with the age-crime curve (Piquero, Farrington, and Blumstein 2003; Stolzenberg and D’Alessio 2008) where delinquent behaviors take place in adolescence and then begins to taper off as one enters adulthood—making criminal behavior more of a transition. In other words, adolescence-limited offenders commit delinquent acts during their teenage years and as they get older, they grow out of that behavior. Moffitt (1993/2008) argues that delinquency in adolescence is normative—most individuals will engage in delinquent behaviors during this time period but their delinquency will not last. This connects to the life course idea by showing that these individuals’ trajectory of crime decreases over time.

Life-course persistent offenders, on the other hand, usually begin showing antisocial traits in early childhood and this influences later delinquency that surpasses adolescence (Moffitt 1993/2008; Piquero et al. 2003). While these traits are developed within the child, other social factors contribute to life-course persistent offenders as well. Such social factors include poverty and poor parenting. Children who grow up living in poverty and have poor family bonds are at greater risk of becoming life-course persistent
offenders as these social factors help to shape the development of a child’s self-control (Moffitt 1993/2008).

Similar to the life-course persistent offender is the criminal career discussed by Piquero et al. (2003) and Blumstein and Cohen (2004). In order to look at the criminal career, researchers need to take several factors into account. First, there needs to be a clear definition of the criminal career. This could be by examining the duration of the criminal behavior, the offending frequency, who the individual is committing crimes with (looking at solo versus co-offending patterns), the types of crimes that are being committed, and the varying degree of seriousness (Piquero et al. 2003). These factors all contribute to the criminal career—which could start at adolescence which Moffitt (1993/2008) suggested but it could also develop during the transition into adulthood.

Research has shown that individuals who enter different phases of their life might desist from crime if they were once exhibiting criminal behavior. Thus, the transition into married life helps individuals desist from criminal behavior (Sampson and Laub 1993). In addition, individuals are also less likely to engage in criminal behavior as they enter the life event of marriage. For example, Forrest and Hay (2011) found that individuals who are married have a greater sense of self-control compared to individuals who are not married. In addition, married individuals are more likely than single individuals to desist from crime (Cohen and Felson 1979; Forrest and Hay 2011). For Forrest and Hay (2011) this finding deals with having higher self-control. For Cohen and Felson (1979) married individuals are less likely to engage in criminal activities due to the lifestyle change that marriage brings. This example shows how researchers have looked at how different phases of life affect different individuals but the theory and explanations vary. However,
regardless of the explanation and the theory used, the outcomes and findings are consistent.

Researchers have examined how life events like marriage serves as turning points within an individual’s life (Bernburg and Krohn 2003; Melde and Esbensen 2011; Wiley, Slocum, and Esbensen 2013). Marriage can serve as a life event where individuals who previously engaged in criminal behavior desist after marriage (as discussed above). Engaging in risky behavior also serves as a turning point for individuals as well. Melde and Esbensen (2011) examined how being part of a gang could shift the trajectory of one’s life. That is, joining a gang would serve as a turning point that sets one’s trajectory. Melde and Esbensen (2011) found that the social bonds one forms with other gang members influences their future behavior and usually their future behavior involves criminal actions, specifically violent offenses. Youths who enter gangs at a young age and form bonds with violent individuals within the gang are likely to engage in violent behavior too. Being involved in violent criminal activities as a youth changes the trajectory of one’s life in that they will most likely resort to those behaviors as adults (Melde and Esbensen 2011). In addition, being in a gang at a young age changes one’s trajectory because it limits an individual’s opportunities to the conventional means of society, it changes because of who these individuals are interacting with, and it changes because it risks individuals getting into trouble with the law and obtaining a criminal record. As a youth, these are negative consequences of gang life and could affect one’s life chances and outcomes as an adult.

Another theory that is incorporated with the life course perspective is labeling theory. Researchers have discussed that official intervention, like having a criminal
record at a young age, or being stopped by police, can change the trajectory of one’s life (Bernburg and Krohn 2003; Wiley et al. 2013). Being stopped by police or having a record as an adolescent can serve as a turning point in individual’s lives where they will have less structural opportunities like educational attainment (Bernburg and Krohn 2003) and this could affect their later life involvement in criminal behavior (Bernburg and Krohn 2003; Wiley et al. 2013). Bernburg and Krohn (2003) and Wiley et al. (2013) use an alternative form of labeling theory and argue that official involvement in the criminal justice system (being stopped or having a record) corresponds to primary and secondary deviance that is discussed within labeling theory literature. Here, it serves as an example of turning points and that being involved in the criminal justice system at an early age can influence life chances and life outcomes. As being involved in an institution like the criminal justice system at an early age affects one’s life outcomes, the military is also an institution where life outcomes are affected as well.

*Life Course Perspective and the Military*

Researchers have used life course theory to examine how the military affects life outcomes and trajectories. Military life can serve as a positive event where trajectories are shifted for the better, and the military can serve as an event where trajectories are negatively or unexpectedly shifted. In addition, the military can also serve as a life event where the individual remains on the path that they were already on. Some people that enter the military report having a fascination with violence to begin with (Elbert, Weierstall, and Schauer 2010; Hecker, Hermenau, Maedl, Elbert, and Schauer 2012; Weierstall and Elbert 2011). Perhaps the fascination with violence and offending would be enough reason for individuals to decide to serve in the military, thus indirectly linking
to the idea of the career criminal and the military allowing for this kind of behavior to be acceptable and also indirectly linking to the idea of the life-course persistent offender.

Studies have looked at how serving in the military shifts life outcomes and individual behavior. However, the findings vary. There are findings that show that serving in the military increases desistance (Glueck and Glueck 1950; Laub and Sampson 2003; Sampson and Laub 1993) where the military serves as an adjustment period for individuals. However, Rand (1987) tested this finding and found that results varied depending on the race of the individual. Rand (1987) found that more White military members desist from crime after serving compared to Nonwhite military members. However, when examining a group of offenders by military status and race, Rand (1987) found that more White military members account for a higher number of offenses compared to Black military members. For some individuals, serving in the military serves as a form of desistance and for others it does not. In addition, some researchers have found that serving in the military can also have no effect on future criminal behavior (Bouffard 2005; Teachman and Tedrow 2016).

*Military as positive life event*

Sampson and Laub (1993) largely write about how individuals who were delinquent as adolescents go into the military and continue their deviance throughout their service. However, they also found some evidence to the contrary. Sampson and Laub (1993) wrote about how serving in the military could act as a turning point in one’s life that would help shift one’s life trajectory. For instance, Sampson and Laub (1993) found cases where men who had previously engaged in delinquent behavior described the military as a place where they matured. These men described the military as a place
where they learned life skills and were surrounded by men who were good motivators (Sampson and Laub 1993). Several researchers have applied this idea in their work and studied how serving in the military may affect the trajectory of one’s life (Bouffard 2005; Elder Jr. 1998; Miller, Shutt, and Bernstein 2010; Teachman and Tedrow 2014/2016).

When an individual joins the military, they are interacting with people that they may have never met before. Like Sampson and Laub (1993) found, individuals in the military may serve as motivators for some individuals. In addition, Laub and Sampson (2003) were able to track down some of the boys originally part of the Glueck and Glueck (1950) study to inquire about their life histories as adults. Many of the men said that entering institutions like marriage and the military helped them desist from crime. Similarly, Teachman and Tedrow (2014) found that individuals who were once delinquent and entered the military were likely to desist from criminal behavior as well. In addition, those individuals that had significantly high levels of delinquency were less likely to enlist compared to other individuals with lower levels of delinquency and very serious delinquents were less likely to enter the military in the first place (Teachman and Tedrow 2014). In addition, Elder Jr. (1998) found that the younger an individual is when they enter the military, the better their life outcomes are later.

How one handles military experience and the impact it has on life outcomes may be in part due to one’s social background. Research has shown that although the majority of the military population consists of White individuals, Black individuals actually enlist at a higher rate (Bachman et al. 2000; Elder Jr. et al. 2010; Jackson et al. 2012; Johnson and Kaplan 1991). While more young White individuals may be preparing to go to college, many young Black individuals may not have that opportunity. Therefore, the
military may be a source of gaining social capital for individuals who do not have other opportunities (Rackin 2017; Sampson and Laub 1996; Wang, Elder Jr., and Spence 2012). Serving in the military may change the trajectory of their life for the better (i.e., they will have access to education, they will gain employment knowledge and opportunities, and they will acquire job skills). Had the individual never entered the military then their future life chances may have been very different. Regardless of an individual’s social background, serving in the military could serve as a means of gaining social capital like the aforementioned educational opportunities and job skills. In fact, over 60% of individuals who have served in the military since 2001 have said that the military helped prepare them for civilian work (DeSilver 2013). Furthermore, living in a new location often comes with military life and this could affect pathways too (Bucher 2011). Because the military serves as a path to new trajectories, the military can also serve as a transition to other life events as well. Military participation may alter the opportunities of meeting one’s future spouse and having their potential offspring. Had the individual not been in the military perhaps they would have never met their future partner and had their future children.

Military as negative life event

Although the military can serve as a positive life event where individuals develop skills to better their life outcomes, for example, the military also serves as a negative life event for many people. Many soldiers return home from serving with life-changing physical injuries (i.e., people are blinded, loss of limbs, paralyzed, and many soldiers suffer from ongoing debilitating pain). In the more recent wars, many soldiers are suffering from traumatic brain injuries (TBIs) that stem from severe damage to the head
that hinders brain function (Tanielian and Jaycox 2008; U. S. Army Medical Public Health Center 2017). Since President Bush launched the Overseas Contingency Operations (OCO) in 2001, nearly 53,000 soldiers have been wounded in action (Defense Casualty Analysis System 2017). These physical injuries change the trajectory of one’s life and their life outcomes. For instance, Tanielian and Jaycox (2008) studied how PTSD and TBIs affect soldier’s life outcomes after returning home from Iraq or Afghanistan. What they found was that those that suffer from PTSD and TBIs are more likely to be unemployed, have higher suicide attempts, and have substance abuse problems (Tanielian and Jaycox 2008).

Bouffard (2005) looked at career contingencies and argued that serving in the military may influence problems in other aspects of an individual’s life. One example of this is how the military may decrease the stability of a marriage or negatively impact the ability to effectively raise their own children. Transitioning from civilian life, into military life, and back out again could be problematic for some individuals. Such problems may involve the process of relocation that often comes with military life (Bucher 2011). This could be problematic for an individual’s personal life if that individual has a family—thus, relocation might negatively affect the stability of marriage and parenthood. However, Bouffard (2005) also clarified that military life often comes before other life events like marriage or children.

Sampson and Laub (1993) argue that not only can social institutions like the military change the trajectory of one’s life, but trigger events like being exposed to combat can also change the trajectory of one’s life as well. Worthen (2011) found that military members who have been exposed to combat zones are more likely to be affected
by PTSD than those who were not exposed to combat zones. The reason for this may be
due to individuals who are exposed to combat are at greater risk of suffering a physical
injury and this, in turn, can influence their likelihood of developing PTSD. The notion of
being exposed to combat is the turning point and is what shifts the trajectory of one’s
military experience and how it affects them. Not every military member will experience
the same events while serving and not every military member will have similar
behavioral outcomes because of it.

It is important to look at the life histories of individuals and take what happens
while serving in the military into account. Not every military member is going to have the
same experience. For instance, research has shown that individuals who have been
exposed to combat while serving in the military are more likely to engage in criminal
violence after their military service (BMJ 2013; Elder Jr. 1998; Köbach et al. 2015;
Rohlfs 2010; Worthen 2011). However, Teachman and Tedrow (2016) found that military
members that have served in combat zones are not more likely to be linked to criminal
violence. Furthermore, when examining the influence of combat by race, existing
research is even more unclear. For instance, Rohlfs (2010) found that Black military
members who served in combat areas are more likely to be linked to violence later in life
while Bouffard (2005) found White military members are more likely to be linked to
violence later in life.

As is shown, the military-crime relationship has been a popular research topic.
Researchers have been interested in making comparisons of how the military affects
outcomes by comparing them to civilians. However, when researchers do this, they
usually are comparing military members to civilians within the prison system. In other
words, researchers have discussed the impact of military by examining prison inmates and those who have a history of military service versus those who do not (Bronson et al. 2015; Lunden 1952; Van Dyke and Orrick 2017). What is missing from the literature on the relationship between military and crime is a comparable group of civilians, not just prison inmates. To be able to understand the impact of military on crime, there needs to be a comparable group of individuals who do not have military experience because what is lacking within the current literature is whether it is the military that influences later life outcomes and not, for example, pre-existing factors that happen prior to military service that influences later life outcomes.

Past work has shown that there is a relationship between serving in the military and criminal behavior, specifically with the effect of PTSD and active combat. However, the findings within the literature are largely inconsistent, especially when discussing race. Researchers have not adequately taken context into account with discussing military life and how experiences may vary according to race. This dissertation starts to fill this gap by comparing criminal behavior among military members and civilians and by focusing on the military experience according to race and how crime is affected.

The life course perspective is a very useful theoretical framework to discuss the military and its effects on individuals. Researchers have used the life course perspective to study institutions like the military to see how it affects individuals. For instance, Sampson and Laub (1993) used life course perspective to study the military and found that military service may shift the trajectory of one’s life. This means that the military can have a positive effect on an individual where trajectories are shifted for the better, or the military can have a negative effect on an individual where the trajectory of their life is
redirected in a way that the individual did not intend. This idea is emphasized throughout this dissertation, specifically with how the military predicts criminal offending. The overarching goal of this dissertation is to determine how the military affects life outcomes. Specifically, this dissertation focuses on three main research questions:

1. How does the military serve as a transition event that leads to a trajectory of crime?
2. How do childhood predictors of crime vary by military status?
3. How does the military experience vary by race and how does it affect a trajectory of crime?

DATA

For this dissertation, the data comes from the National Longitudinal Survey of Youth, Child and Young Adult sample (NLSY-CYA) 1986-2014. This dataset can be found online at the Bureau of Labor Statistics. Beginning in 1979, the NLSY surveyed individuals that were between the ages of 14-22 years old regarding a wide range of lifestyle, attitude, and behavioral topics. These individuals were surveyed on an annual basis from 1979 to 1994. Since 1994, these individuals have been surveyed every other year. This original sample consisted of 12,686 men and women throughout the United States and is nationally representative. In addition, for this original sample, military members were oversampled. This was done for comparative analysis between military individuals and civilians.

Starting in 1986, the children of the females of the original cohort began to be surveyed every other year and are the individuals that comprise the NLSY-CYA 1986-2014 sample. These individuals have been surveyed from 1986 to the present (2014 being
the most recently released wave). There are currently a total sample of 11,521 children that have been born to the mothers of the original 1979 sample. Beginning in 1988, children who were 10 years old and older completed a survey that included questions about their childhood activities, school life, peer group, and family life. Since 1994, individuals who were at least 15 years old began completing their own self-reported questionnaires that was modeled after the original 1979 questionnaire. This group is sampled every other year and to date has completed 11 waves of surveys. This sample was chosen because their mothers were part of a sample that consisted of an overrepresentation of military. Furthermore, the items used in the NLSY-CYA provide in-depth questions about background information that would be assessed prior to entering military service. As is discussed in later chapters, there are several measures in this project. The military item was a dichotomous variable where zero meant that the individual has never served in the military and one meant that the individual has served in the military (N = 8201).

This dissertation uses a life course perspective to study individuals in the military so in many ways, a longitudinal dataset is the best option to do this (Farrington 2008; Hirschi and Gottfredson 1983; Piquero et al. 2003; Sampson and Laub 1992/1993). As Hirschi and Gottfredson (1983) argue, longitudinal data helps to explain the age-crime relationship. That is, longitudinal data helps to detail at what age individuals begin to participate in deviant activities and could even posit trigger events and turning points for those individuals engaging in delinquency. Although the data for this current project was pulled from a longitudinal dataset in which individuals have been tracked for several years, the data itself within this dissertation is cross-sectional. Cross-sectional data is
beneficial to examining treatment effects and self-selection because of the ability of holding other factors constant (Hirschi and Gottfredson 2001). Controlling for other factors allows for examination of the effect (Hirschi and Gottfredson 2001). Because the main objective of this dissertation is on the effect of the military (a self-selecting institution) on life outcomes, cross-sectional data is appropriate.

Although the United States has been at war many times during the period included in the NLSY, I am interested in looking at military life post September 11, 2001. Therefore, this dissertation uses data from waves 2000-2014\(^1\) of the NLSY-CYA sample, as they are more likely than the original sample to be in the correct age range to be in active military service. I am interested in looking at this group of individuals and how their military experiences differ from one another and differ from the greater population of individuals who are not in the military. I use data on the military from 2000-2014 because it marks a new era of war for the United States. After September 11, 2001, President Bush launched the OCO that included Operation Iraqi Freedom (OIF), Operation New Dawn (OND), Operation Enduring Freedom (OEF), Operation Inherent Resolve (OIR), and Operation Freedom’s Sentinel (OFS) and since then 6,896 soldiers have been killed and many more soldiers have been wounded (Defense Casualty Analysis System 2017). In addition, researchers that have studied military experiences have commonly used data generated from individuals who served in WWII and the Vietnam War. Using a younger generation of individuals that have served in the years after the terrorist attacks of September 11\(^{th}\) contributes more to the literature on military

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\(^1\) There are instances when data are pulled from earlier years to obtain information from when the respondent was a child or adolescent and how they behaved at certain ages. This is discussed in later chapters.
experiences as a whole by looking at a unique group of military members.

DISSERTATION FORMAT AND OVERVIEW OF CHAPTERS

This dissertation expands on the existing literature by examining the role of military experiences and criminal offending outcomes. The project consists of three pieces that are intended to serve as independent studies appropriate for publication as journal articles. Each article is independent of one another but are loosely connected under a larger research agenda examining the effect of military experience on crime. I conclude this dissertation in Chapter Five where I summarize the findings from each article, present the limitations, and detail where future research in these areas should go. In addition, I summarize the contributions of this dissertation. The three articles are discussed further below.

In Chapter Two, “Early Life Predictors to Examine Later Life Outcomes: Using Propensity Scores to Create a Matched Sample of Military Members and Civilians,” I use propensity scores to compare individuals who have military experience to those who do not. That is, I match individuals one-to-one using variables that would be determined prior to one entering the military. For example, I use items about the respondent’s personality from when they were children (i.e., impulsiveness), behavioral tendencies (i.e., bullying), educational and career opportunities (i.e., whether the respondent’s school had job fairs that included employers and military), and several demographic variables. Using this kind of methodological technique makes this study quasi-experimental. The goal of matching on many items is to assess how individuals compare to one another with the only difference being whether they have military experience. In this chapter I examine descriptive statistics of military members and civilians before and after
matching. Using propensity scores in this chapter is beneficial to Chapter Three when I look at criminal offending differences between military members and civilians. As is shown in Chapter Two, the data is balanced after propensity score matching, thus allowing for more accurate examination between the two groups. At the end of the chapter, I conduct a bivariate analysis of military status and crime. There is a statistically significant relationship between these two variables, indicating that there is a difference in committing crime based on military status even though these two groups are the same. This is a major finding because it shows that there is something about being in the military that has a different effect on crime. Therefore, further analysis is needed.

In Chapter Three, “Criminal Offending Differences Between Military Members and Civilians,” I discuss the differences between military members and civilians and how they differ with regards to criminal offending. Using the matched sample derived from Chapter Two, I use ordinary least squares regressions to examine the predictors of a crime trajectory. In addition to military status, I examine how several life course variables like sex, race, age, and marital status as well as personality and behavioral factors from when they were younger predict a trajectory of crime. Findings indicate that there is a significant difference between the groups on crime according to military status. Military members commit fewer crimes than civilians. This shows that military service is related to a later crime trajectory because military service decreases crime. I examine this relationship further by conducting two more analyses, one on the military sample and one on the civilian sample to examine if there is a difference in which predictors are important to crime based on military status. Findings show that the predictors of crime for military members and civilians are largely the same.
Chapter Four is titled, “Do Military Experiences Vary by Race? The Impact of Life Course and Military on Crime.” Here, I only focus on the original military sample. Researchers have found that military experiences are different by race and that these experiences affect future behavior (Craig and Connell 2015; MacLean and Elder Jr. 2007; Rand 1987). In this chapter, I examine several aspects of military life and how this varies by race. For instance, I examine military satisfaction, length of service, whether the respondent re-enlisted, and whether they gained social capital from serving in the military (i.e., college credits or if they use the skills they learned in the military in their civilian job) and how these vary by race. In addition, I also include variables that assess what the respondent was like prior to joining the military (i.e., when they were adolescents) and after joining the military. These factors help to give an understanding of the context of the military experience and how this varies by race. Lastly, I use ordinary least squares regressions to examine the impact of race on crime after joining the military and how positive and negative experiences within the military impact a crime trajectory. Findings show that race is not a predictor of committing crime after joining the military, neither are positive or negative experiences within the military. In other words, race and both positive and negative experiences within the military do not affect a trajectory of crime. However, life course theory is supported in this study as it is consistently shown that delinquency in adolescence predicts crime after joining the military, showing early crime sets a trajectory for later crime.

INTENDED CONTRIBUTIONS

One of the main contributions of this dissertation is adding to the literature on military experiences and the impact on criminal offending. Researchers have long been
interested in studying military life and military experiences (Bouffard 2005; Craig and Connell 2015; Elder Jr. 1998; Köbach et al. 2015; Rohlfs 2010; Teachman and Tedrow 2016; Worthen 2011) but context is something that is often overlooked. For instance, researchers have studied military life by examining individuals that served in WWII. Their military experience would be different to the military experiences of individuals serving in Iraq or Afghanistan. The time period is different, the length of the war is different, machinery is different, and race relations are different. How one experiences the military in 1945 and the later effects of those experiences may not be how one experiences the military in 2014 and the later effects of those experiences. Further, how one experiences the military who has been exposed to combat may not be how one experiences the military who has not been exposed to combat. This dissertation adds to the military research by examining these contextual discrepancies.

Another contribution of this dissertation is adding to the literature on the life course perspective. Using propensity scores to match individuals on similar background information like demographics but also on social characteristics, like the opportunities that they had at school, adds to the literature of life course by examining trajectories through available means. In addition, this dissertation gives insight on the impact of military service on crime by going beyond past research that just shows whether or not military members commit crime. By having a matched sample, this allows for a comparison of military to very similar non-military respondents to assess if the military itself is a risk factor for higher crime. As is shown, military members commit fewer crimes than civilians and because these two groups are matched, it is concluded that there is something about the military that helps to decrease a trajectory of crime, something
that is missing from civilian life.

A final area of contribution of this dissertation is examining the effects of race and the military experience and how crime is affected. Much of the research that does take race into account with examining military experience and crime is largely inconsistent and much of it has been targeted on individuals who served in WWII or the Vietnam War. One of the main goals of this dissertation is to gain a greater understanding of the military experience by examining military members who have served in the post September 11th era. Although it is found that race and positive and negative experiences within the military do not predict crime after joining, this dissertation parallels the existing literature by illustrating the unclear effects of race and military experience on crime.
CHAPTER II
EARLY LIFE PREDICTORS TO EXAMINE LATER LIFE OUTCOMES: USING PROPENSITY SCORES TO CREATE A MATCHED SAMPLE OF MILITARY MEMBERS AND CIVILIANS

Abstract

Much of the research that exists regarding the military has compared individuals who have military experience to civilians to determine how the military affects people’s lives. However, what the research lacks is an accurate comparison group of military members to civilians so it is difficult to assess the true impact of military service without a comparable group. Research that does compare military members to civilians traditionally focuses on pre-enlistment characteristics and who is likely to join the military but oftentimes, later life outcomes and impact of military is not assessed. The current study uses a quasi-experimental technique to examine how the military affects later life outcomes for people serving between 2000-2014 by creating a matched sample dataset of military members and civilians. Propensity scores are used to match individuals who have been in the military to individuals who have not based on several pre-existing predictors. This study is the first step in examining how serving in the military may affect other aspects of individual’s lives and how later life outcomes are affected.

Keywords: military, quasi-experimental, propensity score matching, life outcomes
There has long been an interest in studying military life and those who go into service. In addition, there has also been an interest in examining how the military affects later life outcomes. This has been done in a variety of ways but typically by comparing individuals with and without a military background or by examining how different experiences within the military affects later life outcomes for military members (Elder Jr. 1986; Snowden, Oh, Salas-Wright, Vaughn, and King 2017; Teachman and Tedrow 2016). For example, Snowden et al. (2017) studied substance use of military members and civilians. What they found was that military members were more likely to be arrested than civilians and be subject to more substance misuse. However, Snowden et al. (2017) did not address what the military group was like prior to enlistment. Perhaps more individuals in the military group than the civilian group were likely to use substances even prior to enlisting. It is difficult to assess how the military might affect substance use compared to civilians when these groups may be already different at the baseline.

To overcome this issue, many researchers have used a methodological technique, propensity score matching, to assess the impact of a treatment effect. A propensity score is similar to predicted probability, where a score of being in a treatment or control group is assessed based on several predictors or covariates (Guo and Fraser 2010; Rosenbaum and Rubin 1983). Several researchers have used propensity score matching to study different aspects of the military (Barry et al. 2013; Fink et al. 2017; Jackson, Thoemmes, Jonkmann, Lüdtke, and Trautwein 2012; Lyk-Jensen, Weatherall, and Jepsen 2016; Van Dyke and Orrick 2017). For example, Van Dyke and Orrick (2017) used propensity scores to examine prison populations of veterans. More specifically, they created a matched sample of veteran inmates with the treatment effect being whether the individual
was exposed to combat. These researchers were interested in studying inmates with a military background to determine the impact of combat on crimes committed. In addition, Fink et al. (2017) used propensity score matching to examine military members who have been deployed in combat zones versus not deployed and how this influences drinking behavior. While these studies provide important examinations of the impact of military on these outcomes, the existing literature has largely failed to compare how life outcomes vary for military members compared to civilians. Researchers have compared military members and civilians, some using propensity score matching, on who is likely to join the military, but how the military affects later life behavior has not been studied. Therefore, this is the first known study to create a matched dataset of military members and civilians to assess later life outcomes.

The purpose of this study is to examine the known factors influencing individual’s choice to join the military. The goal is to create a matched dataset of military members and civilians to examine later life outcomes after service, thus making this study quasi-experimental. Research has shown that individuals who serve in the military may benefit positively from that experience (Rackin 2017; Sampson and Laub 1996; Wang, Elder Jr., and Spence 2012) and other research has shown that military members face a great deal of hardships upon returning home (BMJ 2013; Elder Jr. 1998; Köbach, Schaal, and Elbert 2015; Rohlfs 2010; Worthen 2011). What is unclear from these studies is whether it is the experience of being in the military that influences these outcomes and not pre-existing factors of individuals who join. This study focuses on military members and civilians, like other research, and uses a methodological technique (propensity score matching) to make these two groups as similar as possible based on early life predictors. Therefore, the
only difference between military members and civilians is the experience of military itself. All other aspects (i.e., race, sex, personality and behavioral factors from adolescence) are the same across groups. Creating a matched sample of military members and civilians allows for further examination of how the military affects later life outcomes.

PREDICTORS OF MILITARY ENLISTMENT AND OTHER LIFE OUTCOMES

In order to compare military members and civilians to assess how life outcomes may be different for individuals with a military background, there must be a discussion of the predictors that influence one’s decision to join. Based on previous research, there are several predictors used to determine military enlistment. Such predictors include demographics, cognitive predictors, and childhood experiences and behaviors. These predictors help to determine if it was the military that influences later life outcomes or if individuals behaved in such a way prior to the military. For example, if an individual behaves aggressively after military enlistment, it is important to note if they were aggressive prior to the military. Therefore, it might not be the military itself that has this influence on later life aggression, but that they exhibited this kind of behavior even before entering the military.

Demographics

Research has shown that sex, race, age, class, parental background, family structure, geographic location, place of residence, and region are important predictors to military enlistment. Males are more likely than females to join the military (Bachman, Segal, Freedman-Doan, and O’Malley 2000; Beaver, Barnes, Schwartz, and Boutwell 2015; Elder Jr., Wang, Spence, Adkins, and Brown 2010; Ford, Gibson, Griepentrog, and
Marsh 2014; Johnson and Kaplan 1991). In addition, although there are more White military members, minorities are actually more likely to join (Bachman et al. 2000; Elder Jr. et al. 2010; Jackson et al. 2012; Johnson and Kaplan 1991). Age is also an important predictor of military enlistment. Individuals who enter the military at younger ages are likely to report better life outcomes compared to individuals who entered the military at an older age (Elder Jr. 1986; Elder Jr., Gimbel, and Ivie 1991; McDonald and Elder Jr. 2006; Sampson and Laub 1996). For example, individuals who enter the military at a younger age are likely to report having a better marriage later in life (Elder Jr. 1986).

Class, measured by socioeconomic status (SES), is also an important predictor of military enlistment. For example, a measure of SES would be parental occupation or parental education. The more educated an individual’s parents are, the less likely the individual is to enlist in the military (Bachman et al. 2000; Barry et al. 2013). Individuals from a lower SES are more likely to join the military compared to individuals from a higher SES (Elder Jr. et al. 2010; Jackson et al. 2012; Johnson and Kaplan 1991; Spence, Henderson, and Elder Jr. 2012). Family structure (i.e., the number of parents in the household) has also been shown to be an important predictor of military enlistment (Bachman et al. 2000; Elder Jr. 1986; Elder Jr. et al. 2010; Spence et al. 2012). For instance, Bachman et al. (2000) found that individuals are more likely to enlist if they did not have both parents in the home during their senior year of high school. That is, individuals who lived with only one parent during their senior year of high school were more likely to enlist in the military. Elder Jr. (1986) showed a connection between military status and individuals living with their mothers. Individuals who came from a single-parent household, specifically living with their mothers (and controlling for other
factors, like SES) are more likely to join the military (Elder Jr. 1986). In addition, Spence et al. (2012) found that military enlistment is higher for individuals that lived in a one-parent household during adolescence.

Geographic location, place of residence, and region are also important predictors of military enlistment. Researchers studying the military, military enlistment, and the military population have found that individuals from the South are most likely to join the military compared to individuals from other regions (Bachman et al. 2000; Ford et al. 2014; Janowitz 1960). Janowitz (1960) argues that life in the South is more “military” in that the military serves to be an attractive institution for people from the South. Furthermore, Ford et al. (2014) found that individuals from the Northeast would have the lowest propensity to join the military, while individuals from the South and Midwest have the highest propensity. In addition, research has shown that individuals who are from rural areas are more likely to join the military compared to individuals from urban areas (Bachman et al. 2000; Jackson et al. 2012). It can be argued that because geographic location (i.e., the South) is a determinant of military enlistment, residing in rural areas would also be a likely determinant as well. Southern regions and rural areas may consist of very similar people.

**Cognitive Predictors**

Individuals usually enlist in the military between the ages of 18-24 (Munson and Miller 1921). As of 2016, the majority of the total population in the military (40%) was younger than 25 years old (Department of Defense 2018). Munson and Miller (1921) argue that males in the United States go through puberty for about 8-10 years and this starts at age 14 and can go until the age of 24. Due to this wide age range, and due to the
military allowing for enlistment at age 18, there are some individuals who join the military that are still considered to be immature. Munson and Miller (1921) argue that some new soldiers have the psychology of adolescents and tend to be impulsive. In addition to simply aging and immaturity fading, the structure of the military also helps these individuals mature. Thus, individuals mature through the structure of military life and by interacting with others (Eighmey 2006; Sampson and Laub 1993). Furthermore, Eighmey (2006) argues that the military may serve as an institution where self-discipline is developed and individuals go through a maturing stage.

Researchers have found that certain personality traits are important “selection factors” (Beaver et al. 2015) for individuals choosing to join the military (Bachman et al. 2000; Beaver et al. 2015; Duffy 1988; Elder Jr. 1986; Jackson et al. 2012; Montes and Weatherly 2014). Individuals are likely to join if they view the military as exciting (Bachman et al. 2000) or as a place where they “expose themselves to danger” (Duffy 1988:46). Bachman et al. (2000) found that individuals with “macho” personality traits may be more likely to enlist in the military because they might find the military exciting. In addition, Jackson et al. (2012) argue that individuals with certain personality traits are more likely to enlist in the military. They found that individuals who are less agreeable, and who more closed-off to new experiences are more likely to enlist in the military. Finally, they found that individuals who have lower levels of neuroticism are likely to join the military as well (Jackson et al. 2012). Elder Jr. (1986) found that individuals who view themselves as inadequate and individuals who are typically passive are likely to join the military too. In addition, Montes and Weatherly (2014) studied Reserve Officers’ Training Corps (ROTC) participants and non-ROTC participants and found that those
who were in the ROTC group were more impulsive and sensation-seeking than the non-ROTC group. As is shown, there are several cognitive traits, many focusing on impulsivity, that predicts military enlistment. However, individuals not only enlist in the military for the excitement, many make the conscious decision to enlist because of what the military offers.

Studies have shown that many individuals enter the military for the perks that come along with the military institution. That is, the military provides individuals with an opportunity to learn a new skill, to gain experience, and has a monetary or educational incentive (Borack 1982; Duffy 1988; Elder Jr. 1986; Elder Jr. and Hareven 1993; Elder Jr. et al. 2010; Eighmey 2006; Mankowski, Tower, Brandt, and Mattocks 2015; Wang et al. 2012; Woodruff 2017). Thus, it can be argued that individuals who plan to join the military are doing so as a means to gain social capital. Individuals who are not in the military and have no plan to join often state that their main reasoning for not enlisting is due to social factors, like already having a family and a job (Borack 1982).

Researchers have found that individuals who have a more positive attitude towards the military are more likely to join (Bachman et al. 2000; Beaver et al. 2015; Duffy 1988; Gibson, Griepentrog, Marsh 2007; Johnson and Kaplan 1991). That is, if individuals view the military as an attractive institution, they will be more likely to enlist. Individuals are likely to enlist, and thus intend to join the military, if they view the military as a satisfying work environment (Bachman et al. 2000). Viewing the military as a satisfying work environment might also influence their likelihood in re-enlisting. Similar to personal attitudes towards the military, another predictor of military enlistment is parent’s attitudes towards the military (Gibson et al. 2007). Parents that view the
military favorably are more likely to have children who view it favorably and this could affect their propensity to enlist (Gibson et al. 2007).

Studies have shown intelligence to be an important predictor of military enlistment (Bachman et al. 2000; Barry et al. 2013; Jackson et al. 2012; Elder Jr. 1986; Elder Jr. et al. 2010; Johnson and Kaplan 1991). In order to assess intelligence, researchers have used grades in school as a measure. Individuals with higher grades in high school are less likely to enlist in the military compared to other students (Bachman et al. 2000; Elder Jr. 1986; Elder Jr. et al. 2010; Johnson and Kaplan 1991; Wang et al. 2012). Individuals who had a C average in high school were more likely to enlist compared to A students (Bachman et al. 2000). However, students who averaged C-D grades, were less likely to actually join the military. Therefore, individuals with the lowest grades in high school are not likely to enlist, rather, individuals who obtained moderate grades are (Bachman et al. 2000). Furthermore, Wang et al. (2012) found that individuals who were generally considered underachievers, in terms of grades in school, were likely to enlist in the military. In other words, these individuals might have high cognitive ability but have lower grade point averages. Similar to what Bachman et al. (2000) found, individuals who join the military are not the students with the poorest grades. They are, however, the individuals who might not have lived up to their potential.

Individuals with higher levels of educational attainment are less likely to enlist in the military compared to individuals who have lower levels of educational attainment (Beaver et al. 2015; Eighmey 2006; Wang et al. 2012). Eighmey (2006) found that with individuals pursuing to further their education and go to college, military enlistment decreases. In addition, individuals that have plans to attend college are less likely to enlist
in the military compared to individuals who do not plan to attend college (Bachman et al. 2000).

**Childhood Experiences and Behaviors**

In addition to common personality traits among individuals who join the military, there are also behavioral similarities as well. Many researchers have attempted to examine behavioral aspects and military enlistment with substance use. However, research on substance use and military enlistment is inconsistent. For instance, Bachman et al. (2000) found that there is only a small relationship with military enlistment and cigarette smoking, and no relationship with marijuana use and heavy drinking. On the other hand, other researchers have found that substance use and heavy drinking are linked to military enlistment (Barry et al. 2013; Johnson and Kaplan 1991; Shirvani, Reed, and Clingan 2017). For example, Barry et al. (2013) found that binge drinking during senior year of high school significantly predicted military enlistment. That is, those students planning on joining the military binge drank a greater number of days compared to students who did not plan to join the military.

Researchers have also found that delinquency (Teachman and Tedrow 2014) and aggressive behavior are important predictors of military enlistment as well and this finding is consistent throughout the literature (Bachman et al. 2000; Beaver et al. 2015; Elder Jr. et al. 2010; Johnson and Kaplan 1991; Kwan, Jones, Hull, Wessely, Fear, and MacManus 2017). In fact, Bachman et al. (2000) found that there is a relationship between aggression and military enlistment for men and a very small relationship for women. However, the relationship between aggression and military experience is not limited to enlistment. Kwan et al. (2017) found that pre-enlistment physical aggression
was the most significant factor leading to violent behavior after serving in the military. Individuals with a history of physical aggression join the military and over time, for some, their behavior may change (Wang et al. 2012). Elder Jr. et al. (2010) and Wang et al. (2012) argue that individuals with a history of physical aggression may be likely to join the military due to the environment of the military but over time desist from that behavior because of the actual structure of the military as an institution.

Individuals who have family or friends in the military are also likely to enter the military themselves (Elder Jr. et al. 2010; Johnson and Kaplan 1991). Elder Jr. et al. (2010) found that individuals who grew up in families where there is a long tradition of military service is a likely influencer of joining the military. They argue that entering the military may serve as a rite of passage for some individuals and a mark of entering adulthood (Elder Jr. et al. 2010). Relating back to the cognitive predictor of positive attitudes on the military from parents, individuals who have parents that view the military favorably would also likely have a history of military within their family. In addition, researchers have found that individuals who hang out with deviant peers are more likely to join the military (Jackson et al. 2012; Johnson and Kaplan 1991) and individuals who do not have strong social support or social connectedness are more likely to enter the military than pursue college (Elder Jr. et al. 2010; Johnson and Kaplan 1991; Spence et al. 2012). In other words, individuals who are disliked by their peers or associate with a deviant crowd are likely to join the military rather than go to college (Johnson and Kaplan 1991).

Many researchers note that there is a difference between propensity to join the military and actually enlisting (Ford, Gibson, DeCesare, Marsh, and Griepentrog 2013;
Ford et al. 2014; Gibson et al. 2007). That is, intending to do something and then actually doing it are very different and something researchers note to be important. These researchers studied the responses of youth to determine the intent and the actual behavior of joining. Gibson et al. (2007) found that individuals who had been in contact with military recruiters or have actively sought out information on military websites are likely to enlist. Thus, having social connections either through family and friends, or lack of social ties likely influences one’s decision to enlist. In addition, having available resources, like being in touch with recruiters or having the ability to seek out information on the military also influences one’s decision to enlist (Gibson et al. 2007).

DATA AND METHOD

Data were obtained from the National Longitudinal Survey of Youth, Child and Young Adult sample (NLSY-CYA) 1986-2014. This survey began in 1979 with the original cohort being on males and females aged 14-22 and the total sample size was 12,686. It is nationally representative and was conducted every year until 1994 when it was conducted every other year. Beginning in 1986, the children of the mothers from the original cohort were assessed. Every other year the mothers would complete questionnaires on their children and children who were at least 10 years old would complete child assessment supplemental surveys as well. Then, when the children were 15 years old, they would complete a questionnaire that was similar to the original one from 1979.

There are many life outcomes that may differ for those in and out of the military. It is difficult to determine whether experiences in the military are the cause of later life outcomes if there is no controlling of differences in the groups prior to military service.
Such differences would include background factors like sex, race, age, marital status, and behavioral and personality assessments that would exist prior to the individual entering military service. Therefore, the focal point of this study is to create a matched sample of individuals with and without military experience to test for later life outcomes. Data was downloaded from the NLSY-CYA Investigator for the years 2000-2014 in order to have a greater understanding of the military experience in the post 9/11 era. There is currently a total of 11,521 individuals in the NLSY-CYA. However, this number was reduced to a total sample size of 8201 for this study for individuals indicating their military status. Specifically, there were a total of 8201 individuals in the original baseline data (N = 8201) with 331 individuals reporting to having been in the military and 7870 individuals reporting to never have been in the military. Military was a constructed variable in the NLSY-CYA where the respondent indicated their military status at the date of the interview. This variable originally ranged to be 0 = not in the military, 1 = in the active forces, and 2 = in the guards/reserves. Due to the small number of cases responding as a “1” or “2” for the years 2000-2014, this variable was dummy-coded where 0 = never military and 1 = military.

Based on the discussion from previous researchers, data used for this study consists of predictors for military enlistment. In addition to military status, several background variables like demographics, cognitive predictors, and childhood experiences and behaviors were also used in the study. Appendix A provides a list of all the variables used in this study and a description of how items were originally coded and subsequently recoded. Included with demographics are sex, race, age, marital status, SES from late adolescence (father’s level of education and father’s job when the respondent was 16 or
17), whether they were living in a rural or urban area at 16 or 17, number of household members when the individual was 16 or 17, who the respondent lived with when they were 16 or 17 (i.e., both parents, only mother, only father, other relative, other), region the individual was living in at ages 16 or 17, and type of high school program they attended.

Cognitive predictors include average grade in classes in last year of high school, highest degree, self-esteem at ages 16 or 17, individual’s assessment of life being dull without any danger in it at ages 13 or 14, and the individual’s assessment of life being dull without any danger in it at ages 16 or 17. These items address how the individual views the world and gives an assessment of how risky they might be. I used this variable at two different age groups due to one being when they were technically children (they took the child self-assessment supplemental questionnaire at ages 13 or 14) and then they completed another questionnaire when they were considered to be young adults. I wanted to have a measure from when they were still children and from right before they would be allowed to enlist in the military.

Childhood experiences and behaviors include whether the individual used a job fair with an employer or military while they were in high school, damaged school property on purpose at ages 13 or 14, physical aggression at ages 14-17, and whether the individual had an adult household member sent to jail or prison since they were 10 years old. This variable was included to give a contextual indication of home life and family background. In addition, I used the respondent’s mother’s assessment of the individual when they were adolescents (13 or 14 years old). These include: the child is impulsive or acts without thinking, the child has trouble getting along with other children, the child is
not liked by other children, the child hangs around with kids who get into trouble, the child breaks own or another’s things deliberately, child argues too much, child bullies or is cruel/mean to others, and child has a strong temper and loses it easily. The specific ages for some variables were chosen due to the individual still being considered children (ages 13 and 14) and for being able to have an assessment of behavior and personality factors right before individuals can enlist in the military at age 18 (ages 16 and 17).

**ANALYTIC STRATEGY**

This study uses propensity score matching to clarify the treatment effect of military status. However, in order to do this, there must be no cases of missing data within the dataset. As is shown in Appendix B, there are many variables that have missing data. Using SPSS 25, I conducted Little’s MCAR test on all the covariates and military status to assess whether the data was missing completely at random (MCAR). The significance level for Little’s MCAR test was .000, indicating that the data is not MCAR, but is likely missing at random (MAR). MCAR is when there is missing data for a variable and the relationship of missing cases is unrelated to the variable itself (Allison 2002; Garson 2015). MAR, on the other hand, is when there is missing data for a variable and the relationship of missing cases is unrelated to the variable itself, after controlling for additional variables (Allison 2002; Garson 2015). Because the data is likely to be MAR, imputation methods were used. Specifically, single imputation was used but was generated using multiple imputation.

*Missing Data and Imputation*

Multiple imputation is a popular technique used to overcome the issue of missing data. It replaces missing data “with two or more acceptable values representing a
distribution of possibilities” (Rubin 1987:2). Based on the valid cases within the dataset, statistical software packages impute the data for the missing cases based on the presence of valid cases. In other words, multiple imputation fills in the blanks of missing cases based on the valid answers that are present. As has been shown in previous research, between 5-10 imputations is typically sufficient for multiple imputation, although sometimes this is not enough (Allison 2000/2002; Rubin 1976/1987). In each imputation, a different value is imputed and this is done multiple times to account for the uncertainty of the estimate being imputed (Rubin 1987). Because there was an abundant amount of missing data in this study, 20 imputations were generated during multiple imputation. That is, using all the variables shown in Appendix B, I conducted multiple imputation in SPSS and requested that 20 imputations be generated. Although 20 imputations are considered to be enough, because there were so much missing data, uncertainty of the imputed estimates still remains (Allison 2000/2002; Rubin 1976/1987).

SPSS produced one dataset where each of the 20 new imputations were included, plus the original dataset. Based on this overall dataset with the 20 imputations, I conducted a logistic regression on military status using all the predictors. SPSS produced the results for each logistic regression on military status based on the imputation number and also produced pooled results. Pooled results can best be described as taking the average of the estimates across imputations. The pooled results are shown in Appendix C and are a combination of the results from the 20 logistic regression analyses. Appendix C shows the average across the 20 imputations for coefficients, standard errors, and provides the significance levels for each variable.
Much of the research on multiple imputation overlaps with the research on propensity score matching (Cham and West 2016; Eulenburg et al. 2016; Kupzyk and Beal 2017; Leyrat et al. 2017; Mattei 2009; Qu and Lipkovich 2009; Rosenbaum and Rubin 1983/1985; Rubin 1997). Researchers have argued how to conduct propensity score matching with missing data and note that one technique is not necessarily better than the other (Kupzyk and Beal 2017). However, many have argued to account for missing data when using propensity score matching by using multiple imputation. Further, many have debated how to handle propensity score matching after multiple imputation. For instance, researchers have suggested conducting propensity score matching in each imputation and to produce estimates of pooled results, similar to showing the pooled results of multiple imputation through logistic regression, as was shown in Appendix C (Austin 2010/2011; Beal and Kupzyk 2014; Leyrat et al. 2017; Ming and Rosenbaum 2000; Rosenbaum and Rubin 1983/1985; Rubin 1997).

Due to practical considerations and the goals of this study, propensity scores and multiple imputation were handled differently, based on research by Mitra and Reiter (2012) and further demonstrated in several other studies (Eulenburg et al. 2016; James, Roby, Powell, Teuscher, Hamstead, and Shafer 2017; Peeters et al. 2017; Jobarteh et al. 2016; Musuva et al. 2017). Mitra and Reiter (2012) argue that there are several ways to handle propensity score matching after multiple imputation but that there is one technique that is best at reducing potential bias. With this technique, the researcher averages the data across imputations and then performs propensity score matching in this one averaged dataset (Mitra and Reiter 2012). Following this, I created an overall dataset from averaging over the 20 datasets where a missing value is replaced by the average of the 20
The next step was to conduct propensity score matching with this averaged data. Therefore, it should be noted that although multiple imputation was used to impute for missing data, because I conducted propensity score matching on one single dataset, I technically used single imputation for propensity score matching. There are advantages and disadvantages to this approach. For example, single imputation is more time friendly for the researcher because propensity score matching would not be conducted on each imputation (Rubin 1987). Rather, propensity score matching would be conducted in one overall dataset (Mitra and Reiter 2012). However, single imputation underestimates variances and covariances (Allison 2002; Rubin 1987), it treats the imputed missing values as if they are known data (Rubin 1987), and imputing the missing value only once underestimates the variability in the coefficients and standard errors (Allison 2002; Rubin 1987).

To summarize, multiple imputation was used to overcome the issue of missing data. Twenty imputations were generated using the predictors mentioned above (demographics, cognitive predictors, and childhood experiences and behaviors) on military status. I then used single imputation where I averaged the 20 imputed values for each case of missing data to replace the missing values. After imputation, one dataset with no missing values was generated which allowed me to proceed to the next step of conducting propensity score matching.

**Propensity Score Matching**

Propensity scores can best be described as a predicted probability of being part of a group based on several covariates (Guo and Fraser 2010; Rosenbaum and Rubin 1983).
“The propensity score is the conditional probability of a particular treatment given a vector of observed covariates” (Rosenbaum and Rubin 1983:41). Propensity scores range from 0 to 1 and can also be described as a “balancing score” (Guo and Fraser 2010:130) between treated and control participants. Although propensity scores were first introduced by Rosenbaum and Rubin in 1983, it is still a relatively new methodological technique. Studies using propensity score matching can generally be found in many statistical and mathematical journals (Caliendo and Kopeinig 2008; Rosenbaum and Rubin 1983/1985) or in medical journals (Austin 2010/2011; Eulenburg et al. 2016; Lyk-Jensen et al. 2016; Ming and Rosenbaum 2000; Pham, Gibb, Mittinty, Fitridge, Marshall, and Karnon 2016; Qu and Lipkovich 2009; Rubin 1997). More recently, social scientists are incorporating this technique into their work (Assini-Meytin and Green 2015; Barry et al. 2013; Barth, Gibbons, and Guo 2006; Fink et al. 2017; Jackson et al. 2012; Jennings, Hahn Fox, and Farrington 2014; Lane, To, Shelley, and Henson 2012; McSweeney 2015; Van Dyke and Orrick 2017; Werth, Nickerson, Aloe, and Swearer 2015). This technique is an innovative approach for comparing two groups based on pre-existing factors. As such, using propensity scores makes a study quasi-experimental.

Researchers have discussed the different techniques that can be used with propensity scores (Austin 2010/2011; Beal and Kupzyk 2014; Caliendo and Kopeinig 2008; Guo and Fraser 2010). That is, one can use propensity scores to stratify the data, propensity scores can be used to weight the data, propensity scores can be used to match, and propensity scores can be used in adjusted regression (Austin 2011; Beal and Kupzyk 2014; Guo and Fraser 2010). For this study, propensity score matching using a nearest neighbor approach with the use of a caliper was used (Caliendo and Kopeinig 2008; Guo
and Fraser 2010; Jennings et al. 2014; Pham et al. 2016). Nearest neighbor matching is similar to greedy matching in that cases are matched based on how close their propensity scores are to each other (Austin 2011; Beal and Kupzyk 2014; Guo and Fraser 2010). Using a caliper further ensures that the cases that are being matched are within close proximity of one another. In addition, I used a one-to-one ratio for matching. This means that for every one treated case, there would be one control case matched to it. Using a one-to-one matching ratio allows for data to be properly balanced (Guo and Fraser 2010). Furthermore, the overall Chi-Square balance test by Hansen and Bowers (2010) can only be assessed when one-to-one matching is used (Thoemmes 2012).

Using SPSS 25, I conducted propensity score matching using the Propensity Score Matching (PS Matching) extension developed by Thoemmes (2012). Using the covariates identified earlier in this study (demographics, cognitive predictors, and childhood experiences and behaviors), I ran propensity score matching on military status. These predictors are measured prior to military membership and the imputation model can use all the variables no matter the time order with military status.

Propensity scores are generated in the same manner of predicted probabilities from logistic regression analyses. Military status is the dependent variable and the matching variables are the predictors. Based on the predictors and treatment indicator (military status) propensity scores were generated for each individual in the study. Based on the generated propensity score, individuals from the treatment group (military) were matched to a similar individual from the control group (civilian). I used nearest neighbor matching with a 1:1 ratio and used a caliper of .2 to reduce the possibility of having poor matches where cases are not just matched based on being nearest to one another, but that
their actual propensity scores are similar. “It has been suggested that researchers use a caliper width equal to 0.2 of the standard deviation of the logit of the propensity score as this value (or one close to it) minimized the mean squared error of the estimated treatment effect in several scenarios” (Austin 2011:407). Finally, Guo and Fraser (2010:130) argue that “resampling” is another word for propensity score matching in that there might be times where a treated case may not be matched to a control case and vice versa. Therefore, in addition to the previously mentioned options, I also conditioned the data to discard any cases that were unmatched.

The following results first shows the descriptive statistics and bivariate analysis (t-test to show mean differences) of all the variables and a figure detailing the region of common support prior to matching. The region of common support is important for the use of propensity score matching because there must be a baseline relationship between military status and the predictors for this method to be used (Austin 2010/2011; Beal and Kupzyk 2014; Guo and Fraser 2010; Kupzyk and Beal 2017; Love 2003; Rosenbaum and Rubin 1983/1985; Rubin 1997). The region of common support is explained further with its illustration below. Then, propensity score matching was conducted to better assess the data. A table and figure is produced detailing the standardized mean differences to show the balance of the data both before and after matching. Lastly, another table shows the descriptive statistics and bivariate analysis of all the variables and a figure detailing the region of common support after matching.

RESULTS

Table 2.1 shows the descriptive statistics of the original baseline model prior to propensity score matching. It is not possible to discuss in detail every result, but several
findings of interest are explained more in-depth. For example, the age of the individuals in the study differs with regards to military status. That is, civilians are significantly younger \((t(8201) = -5.322, \ p < .001, \ M = 28.26)\) than military members \((M = 29.62)\). Furthermore, age can serve as a factor that has the potential to bias the estimated effect of military status if it is also significantly related to an outcome variable (Thoemmes 2012). Another example of a confounding variable is mother’s assessment of impulsiveness when the individual was 13 or 14 years old. Impulsiveness differs with regards to military status with military members having a significantly higher mean \((t(8201) = -2.072, \ p < .05, \ M = .61)\) than civilians \((M = .56)\). In addition, like age, impulsiveness can also serve as a factor that has the potential to bias the estimated effect of military status if it is also significantly related to an outcome variable as well (Thoemmes 2012). Table 2.1 shows the significance levels of the additional covariates on military status. As is shown, there are several instances of covariates being statistically significant based on military status. In order to account for these additional pre-existing background factors, propensity score matching was conducted, making this study quasi-experimental. The goal of using propensity scores is to create a matched dataset where military members and civilians are similar across the predictors.
Table 2.1 Descriptive Statistics of All Variables Before Matching

<table>
<thead>
<tr>
<th>Static Factors</th>
<th>All (N = 8201)</th>
<th>Military (n = 331)</th>
<th>Civilian (n = 7870)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>49.0% (n = 4020)</td>
<td>22.4% (n = 74)</td>
<td>50.1% (n = 3946)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>Male (Ref.)</td>
<td>51.0% (n = 4181)</td>
<td>77.6% (n = 257)</td>
<td>49.9% (n = 3924)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>31.2% (n = 2556)</td>
<td>31.1% (n = 103)</td>
<td>31.2% (n = 2453)</td>
<td>.984</td>
</tr>
<tr>
<td>White (Ref.)</td>
<td>68.8% (n = 5645)</td>
<td>68.9% (n = 228)</td>
<td>68.8% (n = 5417)</td>
<td>.984</td>
</tr>
<tr>
<td><strong>Age (18 – 44) (mean)</strong></td>
<td>28.31 (SD = 5.340)</td>
<td>29.62 (SD = 4.507)</td>
<td>28.26 (SD = 5.365)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married (Ref.)</td>
<td>69.2% (n = 5679)</td>
<td>42.9% (n = 142)</td>
<td>70.4% (n = 5537)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>Married</td>
<td>20.3% (n = 1661)</td>
<td>32.6% (n = 108)</td>
<td>19.7% (n = 1553)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>Separated, Divorced, Widowed</td>
<td>10.5% (n = 861)</td>
<td>24.5% (n = 81)</td>
<td>9.9% (n = 780)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td><strong>Dad's Level of Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did Not Finish High School</td>
<td>5.7% (n = 466)</td>
<td>5.1% (n = 17)</td>
<td>5.7% (n = 449)</td>
<td>.647</td>
</tr>
<tr>
<td>High School</td>
<td>38.9% (n = 3189)</td>
<td>39.6% (n = 131)</td>
<td>38.9% (n = 3058)</td>
<td>.793</td>
</tr>
<tr>
<td>Some College (Ref.)</td>
<td>42.2% (n = 3464)</td>
<td>44.7% (n = 148)</td>
<td>42.1% (n = 3316)</td>
<td>.357</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>8.3% (n = 684)</td>
<td>4.8% (n = 16)</td>
<td>8.5% (n = 668)</td>
<td>.003 (**)</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>3.3% (n = 271)</td>
<td>3.9% (n = 13)</td>
<td>3.3% (n = 258)</td>
<td>.551</td>
</tr>
<tr>
<td>Master's Degree, Ph.D., J.D., M.D.</td>
<td>1.5% (n = 127)</td>
<td>1.8% (n = 6)</td>
<td>1.5% (n = 121)</td>
<td>.713</td>
</tr>
<tr>
<td><strong>Dad's Job When R Was 16-17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not in Labor Force</td>
<td>0.0% (n = 4)</td>
<td>0.3% (n = 1)</td>
<td>0.0% (n = 3)</td>
<td>.384</td>
</tr>
<tr>
<td>Scientists, Engineers, Lawyers, Architects, Health</td>
<td>1.8% (n = 151)</td>
<td>2.7% (n = 9)</td>
<td>1.8% (n = 142)</td>
<td>.314</td>
</tr>
<tr>
<td>Counselors, Teachers</td>
<td>1.0% (n = 81)</td>
<td>1.5% (n = 5)</td>
<td>1.0% (n = 76)</td>
<td>.424</td>
</tr>
<tr>
<td>Protective, Military</td>
<td>1.4% (n = 113)</td>
<td>2.1% (n = 7)</td>
<td>1.3% (n = 106)</td>
<td>.339</td>
</tr>
<tr>
<td>Entertainment, Media</td>
<td>7.7% (n = 631)</td>
<td>12.4% (n = 41)</td>
<td>7.5% (n = 590)</td>
<td>.008 (**)</td>
</tr>
<tr>
<td>Food Prep, Cleaning, Service Workers (Ref.)</td>
<td>41.9% (n = 3434)</td>
<td>41.7% (n = 138)</td>
<td>41.9% (n = 3296)</td>
<td>.946</td>
</tr>
<tr>
<td>Sales, Office and Administrative Workers</td>
<td>35.8% (n = 2940)</td>
<td>27.8% (n = 92)</td>
<td>36.2% (n = 2848)</td>
<td>.001 (**)</td>
</tr>
<tr>
<td>Farming, Fishing, Forestry, Setters, Tenders</td>
<td>2.9% (n = 236)</td>
<td>2.7% (n = 9)</td>
<td>2.9% (n = 227)</td>
<td>.857</td>
</tr>
<tr>
<td>Construction, Transportation, Movers, Repair</td>
<td>7.5% (n = 611)</td>
<td>8.8% (n = 29)</td>
<td>7.4% (n = 582)</td>
<td>.389</td>
</tr>
<tr>
<td><strong>Living Location When R Was 16-17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>1.6% (n = 128)</td>
<td>1.2% (n = 4)</td>
<td>1.6% (n = 124)</td>
<td>.553</td>
</tr>
<tr>
<td>Rural (Ref.)</td>
<td>80.0% (n = 6557)</td>
<td>80.4% (n = 266)</td>
<td>79.9% (n = 6291)</td>
<td>.849</td>
</tr>
<tr>
<td>Urban</td>
<td>18.5% (n = 1516)</td>
<td>18.4% (n = 61)</td>
<td>18.5% (n = 1455)</td>
<td>.978</td>
</tr>
<tr>
<td><strong>Number of Household Members When R Was 16-17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>6.5% (n = 537)</td>
<td>6.0% (n = 20)</td>
<td>6.6% (n = 517)</td>
<td>.695</td>
</tr>
<tr>
<td>3-4 (Ref.)</td>
<td>73.1% (n = 5993)</td>
<td>80.4% (n = 266)</td>
<td>72.8% (n = 5727)</td>
<td>.001 (**)</td>
</tr>
<tr>
<td>5-6</td>
<td>17.0% (n = 1394)</td>
<td>12.4% (n = 41)</td>
<td>17.2% (n = 1353)</td>
<td>.010 (*)</td>
</tr>
<tr>
<td>7 or more people (7-13)</td>
<td>3.4% (n = 277)</td>
<td>1.2% (n = 4)</td>
<td>3.5% (n = 273)</td>
<td>.000 (***)</td>
</tr>
<tr>
<td><strong>Living Residence When R Was 16-17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent's Household (Both Parents)</td>
<td>31.6% (n = 2592)</td>
<td>23.6% (n = 78)</td>
<td>31.9% (n = 2514)</td>
<td>.001 (**)</td>
</tr>
<tr>
<td>Category</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>p-Value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>Mother's Household (Ref.)</td>
<td>61.9%</td>
<td>70.7%</td>
<td>61.5%</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>Father's Household</td>
<td>3.3%</td>
<td>3.9%</td>
<td>3.2%</td>
<td>.528</td>
</tr>
<tr>
<td>Other Relative's Household</td>
<td>1.7%</td>
<td>0.9%</td>
<td>1.7%</td>
<td>.125</td>
</tr>
<tr>
<td>Other</td>
<td>1.5%</td>
<td>0.9%</td>
<td>1.6%</td>
<td>.234</td>
</tr>
<tr>
<td>Region R Was Living In When R Was 16-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>8.9%</td>
<td>7.9%</td>
<td>8.9%</td>
<td>.483</td>
</tr>
<tr>
<td>North Central</td>
<td>22.8%</td>
<td>14.8%</td>
<td>23.2%</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>South (Ref.)</td>
<td>56.3%</td>
<td>65.0%</td>
<td>55.9%</td>
<td>.001 (**)</td>
</tr>
<tr>
<td>West</td>
<td>12.0%</td>
<td>12.4%</td>
<td>12.0%</td>
<td>.843</td>
</tr>
<tr>
<td>Type of High School Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td>4.9%</td>
<td>4.5%</td>
<td>4.9%</td>
<td>.726</td>
</tr>
<tr>
<td>Commercial</td>
<td>1.1%</td>
<td>1.8%</td>
<td>1.0%</td>
<td>.300</td>
</tr>
<tr>
<td>College Preparatory</td>
<td>37.8%</td>
<td>40.8%</td>
<td>37.6%</td>
<td>.253</td>
</tr>
<tr>
<td>General Program (Ref.)</td>
<td>50.8%</td>
<td>49.5%</td>
<td>50.9%</td>
<td>.643</td>
</tr>
<tr>
<td>Other Specialized Program</td>
<td>5.5%</td>
<td>3.3%</td>
<td>5.5%</td>
<td>.030</td>
</tr>
<tr>
<td>Cognitive Predictors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Grade In Classes In Last Year of High School</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A/A-</td>
<td>14.0%</td>
<td>9.4%</td>
<td>14.2%</td>
<td>.004 (**)</td>
</tr>
<tr>
<td>B+/B- (Ref.)</td>
<td>48.7%</td>
<td>52.3%</td>
<td>48.6%</td>
<td>.187</td>
</tr>
<tr>
<td>C+/C-</td>
<td>33.1%</td>
<td>36.0%</td>
<td>33.0%</td>
<td>.276</td>
</tr>
<tr>
<td>D+/D-</td>
<td>3.3%</td>
<td>2.1%</td>
<td>3.4%</td>
<td>.123</td>
</tr>
<tr>
<td>E or F</td>
<td>0.9%</td>
<td>0.3%</td>
<td>0.9%</td>
<td>.073</td>
</tr>
<tr>
<td>Highest Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Degree</td>
<td>12.0%</td>
<td>0.9%</td>
<td>12.5%</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>GED or High School Diploma (Ref.)</td>
<td>57.8%</td>
<td>60.1%</td>
<td>57.7%</td>
<td>.372</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>14.3%</td>
<td>24.2%</td>
<td>13.9%</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>Bachelor of Arts or Bachelor of Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master's Degree, Ph.D.</td>
<td>12.7%</td>
<td>12.1%</td>
<td>12.7%</td>
<td>.745</td>
</tr>
<tr>
<td>Professional Degree</td>
<td>3.3%</td>
<td>2.7%</td>
<td>3.4%</td>
<td>.489</td>
</tr>
<tr>
<td>Self-Esteem at 16-17 (On the whole, I am satisfied with myself)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>2.8%</td>
<td>2.7%</td>
<td>2.8%</td>
<td>.933</td>
</tr>
<tr>
<td>Agree (Ref.)</td>
<td>97.2%</td>
<td>97.3%</td>
<td>97.2%</td>
<td></td>
</tr>
<tr>
<td>Life With No Danger In It Would Be Too Dull For Me [Child] (13-14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>45.5%</td>
<td>39.0%</td>
<td>45.7%</td>
<td></td>
</tr>
<tr>
<td>Agree (Ref.)</td>
<td>54.5%</td>
<td>61.0%</td>
<td>54.3%</td>
<td>.014 (*)</td>
</tr>
<tr>
<td>Life With No Danger In It Would Be Too Dull For Me (16-17)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>36.1%</td>
<td>26.6%</td>
<td>36.5%</td>
<td>.000 (***)</td>
</tr>
<tr>
<td>Agree (Ref.)</td>
<td>63.9%</td>
<td>73.4%</td>
<td>63.5%</td>
<td></td>
</tr>
<tr>
<td>Childhood Experiences and Behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used Job Fair With Employers Or Military While in High School</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R Did Use</td>
<td>R Did Not Use (Ref.)</td>
<td>School Did Not Offer</td>
<td>( \text{Significance Level} )</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------</td>
<td>----------------------</td>
<td>----------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>R Did Use</strong></td>
<td>23.5% (n = 1929)</td>
<td>73.3% (n = 6008)</td>
<td>3.2% (n = 264)</td>
<td>.000 (***).</td>
</tr>
<tr>
<td><strong>R Did Not Use (Ref.)</strong></td>
<td>52.0% (n = 172)</td>
<td>47.1% (n = 156)</td>
<td>0.9% (n = 3)</td>
<td></td>
</tr>
<tr>
<td><strong>School Did Not Offer</strong></td>
<td>22.3% (n = 1757)</td>
<td>74.4% (n = 5852)</td>
<td>3.3% (n = 261)</td>
<td></td>
</tr>
</tbody>
</table>

**Damage School Property On Purpose At 13-14**

<table>
<thead>
<tr>
<th></th>
<th>Never (Ref.)</th>
<th>Once</th>
<th>Twice</th>
<th>More Than Twice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Never (Ref.)</strong></td>
<td>82.5% (n = 6767)</td>
<td>13.7% (n = 1121)</td>
<td>1.7% (n = 143)</td>
<td>2.1% (n = 170)</td>
</tr>
<tr>
<td><strong>Once</strong></td>
<td>83.4% (n = 276)</td>
<td>14.2% (n = 47)</td>
<td>1.2% (n = 4)</td>
<td>1.2% (n = 4)</td>
</tr>
<tr>
<td><strong>Twice</strong></td>
<td>82.5% (n = 6491)</td>
<td>13.6% (n = 1074)</td>
<td>1.8% (n = 139)</td>
<td>2.1% (n = 166)</td>
</tr>
<tr>
<td><strong>More Than Twice</strong></td>
<td>82.5% (n = 6555)</td>
<td>13.6% (n = 1074)</td>
<td>1.8% (n = 139)</td>
<td>2.1% (n = 166)</td>
</tr>
</tbody>
</table>

**Physical Aggression (Hit or Fight 14-17)**

<table>
<thead>
<tr>
<th></th>
<th>No (Ref.)</th>
<th>Yes (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td>72.1% (n = 5911)</td>
<td>27.9% (n = 2290)</td>
</tr>
<tr>
<td><strong>Yes (Ref.)</strong></td>
<td>60.7% (n = 201)</td>
<td>39.3% (n = 130)</td>
</tr>
</tbody>
</table>

**Adult Household Member Sent to Jail/Prison Since R Was 10**

<table>
<thead>
<tr>
<th></th>
<th>No (Ref.)</th>
<th>Yes (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td>83.4% (n = 6840)</td>
<td>16.6% (n = 1361)</td>
</tr>
<tr>
<td><strong>Yes (Ref.)</strong></td>
<td>86.1% (n = 285)</td>
<td>13.9% (n = 46)</td>
</tr>
</tbody>
</table>

**Child Is Impulsive Or Acts Without Thinking**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>44.1% (n = 3618)</td>
<td>55.9% (n = 4583)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>38.7% (n = 128)</td>
<td>61.3% (n = 203)</td>
</tr>
</tbody>
</table>

**Child Has Trouble Getting Along With Other Children**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>75.4% (n = 6180)</td>
<td>24.6% (n = 2021)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>75.2% (n = 249)</td>
<td>24.8% (n = 82)</td>
</tr>
</tbody>
</table>

**Child Is Not Liked By Other Children**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>84.9% (n = 6966)</td>
<td>15.1% (n = 1235)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>84.9% (n = 281)</td>
<td>15.1% (n = 50)</td>
</tr>
</tbody>
</table>

**Child Hangs Around With Kids Who Get into Trouble**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>77.7% (n = 6371)</td>
<td>22.3% (n = 1830)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>75.8% (n = 251)</td>
<td>24.2% (n = 80)</td>
</tr>
</tbody>
</table>

**Child Breaks Own Or Another's Things Deliberately**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>91.6% (n = 7509)</td>
<td>30.7% (n = 2516)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>91.5% (n = 303)</td>
<td>28.7% (n = 95)</td>
</tr>
</tbody>
</table>

**Child Argues Too Much**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>8.4% (n = 692)</td>
<td>69.3% (n = 5685)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>8.5% (n = 28)</td>
<td>71.3% (n = 236)</td>
</tr>
</tbody>
</table>

**Child Bullies Or Is Cruel/Mean To Others**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>70.1% (n = 5748)</td>
<td>29.9% (n = 2453)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>63.1% (n = 209)</td>
<td>36.9% (n = 122)</td>
</tr>
</tbody>
</table>

**Child Has Strong Temper and Loses It Easily**

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not True</strong></td>
<td>52.2% (n = 4281)</td>
<td>47.8% (n = 3920)</td>
</tr>
<tr>
<td><strong>True (Ref.)</strong></td>
<td>49.8% (n = 165)</td>
<td>50.2% (n = 166)</td>
</tr>
</tbody>
</table>

*Significance levels are reported for group differences between the experimental and comparison groups.*

\*p < .05; **p < .01; ***p < .001
Figure 2.1 shows the region of common support for the estimated propensity scores and military status before matching. As is shown, the region of common support does not cover the full range for either group. In order for propensity score matching to be conducted, there must be a baseline relationship between the study variables (Austin 2010/2011; Beal and Kupzyk 2014; Guo and Fraser 2010; Kupzyk and Beal 2017; Love 2003; Rosenbaum and Rubin 1983/1985; Rubin 1997). That is, if there is no initial overlap between the two groups, which means the two groups are generated by completely different social mechanisms, then nothing can be compared (Love 2003). Had there been no relationship between military status and the observed covariates, propensity score matching would not have been an appropriate method to use. There must be a region of common support among the variables prior to matching (Austin 2010/2011; Beal and Kupzyk 2014; Guo and Fraser 2010; Kupzyk and Beal 2017; Love 2003; Rosenbaum and Rubin 1983/1985; Rubin 1997). Theoretically, the region of common support is what is examined during propensity score matching. Figure 2.1 also shows that there is more variability in the military sample on the predictors than for the civilian sample prior to matching. This Figure illustrates how there is more variability for the military sample and the propensity scores are less dense compared to the civilian sample.
Table 2.2 shows the means, standard deviations, standardized mean difference, and 95% confidence intervals both before and after matching. The standardized mean difference allows for assessing how the data went from being imbalanced before matching to balanced afterwards. As is shown, the means and standard deviations of the covariates for the treated individuals (military) remained roughly the same both before and after matching. The means and standard deviations of the covariates for the control individuals (civilians) differed greatly from before matching to after. As is shown in Table 2.2, the means and standard deviations of the control are much more similar to the means and standard deviations of the treated after matching. For example, since men are much more likely than women to join the military, the mean for sex for the treated group (military) before matching was .776 and its standard deviation was .417 while the mean for sex for the control group (civilians) before matching was .499 and its standard deviation was .500. After matching, the mean for sex for the treated group (military) was .769 and its standard deviation was .422 while the mean for sex for the control group
(civilians) was .775 and its standard deviation was .418. These two groups are much more similar after matching.

In addition, Table 2.2 also shows the balance statistics of all the covariates both before and after matching. Included in this Table is the standardized mean difference for both before matching and after. Generally, values that are less than .1 are said to have adequate balance, values between .1 and .2 are considered to be acceptable, and values greater than .2 signifies serious imbalance (University of Pennsylvania 2017). Table 2.2 shows that the largest standardized difference prior to matching was -1.216 for the covariate of the individual not having a degree, thus indicating serious imbalance. After matching, the standardized mean difference for this covariate was -.066, indicating adequate balance. Furthermore, Table 2.2 shows that the largest remaining standardized mean difference after matching was with the covariate of the individual’s mother’s assessment of the individual having trouble getting along with other children when they were 13 or 14 years old (d = .123). Because this is the largest remaining standardized mean difference after matching and it is less than .2, the data is balanced. In addition, the overall Chi-Square ($\chi^2$) balance test by Hansen and Bowers (2010) was not significant, $\chi^2$ (59) = 28.590, p = 1.000, further indicating that the treatment group and the control group are balanced.
<table>
<thead>
<tr>
<th>Covariates</th>
<th>Means Treated Before</th>
<th>Means Treated After</th>
<th>Means Control Before</th>
<th>Means Control After</th>
<th>SD Treated Before</th>
<th>SD Treated After</th>
<th>SD Control Before</th>
<th>SD Control After</th>
<th>Std. Mean Diff. ($d$)</th>
<th>95% C. I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity</td>
<td>.150</td>
<td>.135</td>
<td>.036</td>
<td>.133</td>
<td>-</td>
<td>.121</td>
<td>.055</td>
<td>.121</td>
<td>.795</td>
<td>-.013</td>
</tr>
<tr>
<td>Male</td>
<td>.776</td>
<td>.769</td>
<td>.499</td>
<td>.775</td>
<td>.417</td>
<td>.422</td>
<td>.500</td>
<td>.418</td>
<td>.666</td>
<td>-.015</td>
</tr>
<tr>
<td>White</td>
<td>.689</td>
<td>.691</td>
<td>.688</td>
<td>.694</td>
<td>.464</td>
<td>.463</td>
<td>.463</td>
<td>.462</td>
<td>.001</td>
<td>-.007</td>
</tr>
<tr>
<td>Physical Aggression</td>
<td>.393</td>
<td>.394</td>
<td>.274</td>
<td>.397</td>
<td>.489</td>
<td>.489</td>
<td>.446</td>
<td>.490</td>
<td>.242</td>
<td>-.006</td>
</tr>
<tr>
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<td>.635</td>
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<th>SD Control</th>
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<th>95% C. I.</th>
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<td>.000</td>
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<td>Means Control</td>
<td>SD Treated</td>
<td>SD Control</td>
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<td>95% C. I.</td>
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<tr>
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<td>Std. Mean Diff. (d)</td>
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<td>Std. Mean Diff. (d)</td>
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</tr>
<tr>
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<td>After</td>
<td>Before</td>
<td>After</td>
<td>Before</td>
<td>After</td>
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<td>.366</td>
<td>.296</td>
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<td>.482</td>
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<td>Damage School Property = Once</td>
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<td>.144</td>
<td>.136</td>
<td>.150</td>
<td>.350</td>
<td>.351</td>
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<tr>
<td>Damage School Property = Twice</td>
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<td>.013</td>
<td>.018</td>
<td>.003</td>
<td>.109</td>
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<tr>
<td>Damage School Property = More Than Twice</td>
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<td>.013</td>
<td>.021</td>
<td>.016</td>
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</table>
Figure 2.2 shows a visualization of the standardized mean differences ($d$) both before and after matching. This chart depicts the values presented in Table 2.2. As is shown, the standardized mean differences after matching are much closer to 0 compared to before matching. This chart shows how the covariates are balanced after matching prior to before. Based on the wide distribution of standardized mean differences prior to matching, it is shown that the standardized mean differences are much smaller after matching and thus are much more balanced and improved.

Table 2.3 shows the descriptive statistics of all the variables after matching. As is shown, there are cases that were unmatched and dropped from analysis. There is now a total sample size of 640 (N = 640) with 320 individuals being part of the treated group (military) and 320 individuals being part of the control group (civilian). Similar to what was shown in Table 2.2, the military group and the civilian group are now very similar to one another after matching. For example, looking back at Table 2.1, it is shown that 42.9% of the military group and 70.4% of the civilian group were never married. After matching, 43.8% of the military group and 43.8% of the civilian group were never married. These two groups are much more similar after matching than before. In addition, Table 2.1 showed that 52% of the military group and 22.3% of the civilian group used a job fair with employers or military while in high school. After matching, 50.3% of the military group and 45.3% of the civilian group used a job fair with employers or military while in high school. Although these two groups are not identical, they are much more similar after matching compared to before.
Figure 2.2 Dotplot of Standardized Mean Differences (Cohen’s d) for All Covariates Before and After Matching

Propensity
Male
White
Physical Aggression
Adult Household Member Sent To Jail/Prison Since R Was 10
Age
Life With No Danger Would Be Dull For [Child] (13-14)
Life With No Danger Would Be Dull For Me (16-17)
Married
Separated, Divorced, Widowed
Dad Job = Not In Labor Force
Dad Job = Scientists, Engineers, Lawyers, Architects, Health
Dad Job = Protective, Military
Dad Job = Entertainment, Media
Dad Job = Sales, Office and Administrative Workers
Dad Job = Farming, Fishing, Forestry, Setters, Tenders
Dad Job = Construction, Transportation, Movers, Repair
Self-Esteem at 16-17
Living Location = Unknown
Living Location = Urban
Living Residence = Parent’s Household (Both Parents)
Living Residence = Father’s Household
Living Residence = Other Relative’s Household
Living Residence = Other
Region = Northeast
Region = North Central
Region = West
School Type = Vocational
School Type = Commercial
School Type = College Preparatory
School Type = Other
R Used Job Fair
School Did Not Offer Job Fair
No Degree
Associate’s Degree
BA or BS
Master’s Degree, Ph.D., Professional Degree
Dad’s Education = Did Not Finish High School
Dad’s Education = High School
Dad’s Education = Associate’s Degree
Dad’s Education = Bachelor’s Degree
Dad’s Education = Master’s Degree, Ph.D., J.D., M.D.
A/A
C+/C
D+/D
E or F
Impulsive
Trouble Getting Along With Other Children
Not Liked
Hangs Around With Kids Who Get Into Trouble
Breaks Things
Argues
Bullies Or Is Cruel/Mean To Others
Temper
Number Household Members = 0-2
Number Household Members = 3-4
Number Household Members = 7-13
Damage School Property = Once
Damage School Property = Twice
Damage School Property = More Than Twice

-1.5 -1 -0.5 0 0.5 1

Before ◦ After
Furthermore, similar to Table 2.1, the significance levels are shown again. It is shown that after matching, there are no significant differences between military and civilian on any of the matching covariates. Because there are no significant differences on any of the covariates, the only difference that remains between the two groups is military status. Having this matching sample is crucial for further analyses and can be used to examine the impact of military on life outcomes. With this sample of individuals being evenly distributed based on pre-existing covariates, the true effect of military status on life outcomes can be more accurately assessed whereas if these two groups were still very different, the true impact of military could not be determined.

Table 2.3 Descriptive Statistics of All Variables After Matching

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<tr>
<th>Static Factors</th>
<th>All (N = 640)</th>
<th>Military (n = 320)</th>
<th>Civilian (n = 320)</th>
<th>P-Value</th>
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<td><strong>Demographics</strong></td>
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</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>22.8% (n = 146)</td>
<td>23.1% (n = 74)</td>
<td>22.5% (n = 72)</td>
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<tr>
<td>Male (Ref.)</td>
<td>77.2% (n = 494)</td>
<td>76.9% (n = 246)</td>
<td>77.5% (n = 248)</td>
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<td>Race</td>
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<tr>
<td>Black</td>
<td>30.8% (n = 197)</td>
<td>30.9% (n = 99)</td>
<td>30.6% (n = 98)</td>
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<tr>
<td>White (Ref.)</td>
<td>69.2% (n = 443)</td>
<td>69.1% (n = 221)</td>
<td>69.4% (n = 222)</td>
<td>.932</td>
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<tr>
<td>Age (18 – 44) (mean)</td>
<td>29.66 (SD = 4.734)</td>
<td>29.60 (SD = 4.536)</td>
<td>29.71 (SD = 4.931)</td>
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<tr>
<td>Never Married (Ref.)</td>
<td>43.8% (n = 280)</td>
<td>43.8% (n = 140)</td>
<td>43.8% (n = 140)</td>
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<td>Married</td>
<td>32.0% (n = 205)</td>
<td>33.1% (n = 106)</td>
<td>30.9% (n = 99)</td>
<td>.554</td>
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<tr>
<td>Separated, Divorced, Widowed</td>
<td>24.2% (n = 155)</td>
<td>23.1% (n = 74)</td>
<td>25.3% (n = 81)</td>
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<td>Dad's Level of Education</td>
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<tr>
<td>Did Not Finish High School</td>
<td>5.6% (n = 36)</td>
<td>5.0% (n = 16)</td>
<td>6.3% (n = 20)</td>
<td>.493</td>
</tr>
<tr>
<td>High School</td>
<td>35.8% (n = 229)</td>
<td>38.8% (n = 124)</td>
<td>32.8% (n = 105)</td>
<td>.118</td>
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<tr>
<td>Some College (Ref.)</td>
<td>47.3% (n = 303)</td>
<td>45.6% (n = 146)</td>
<td>49.1% (n = 157)</td>
<td>.385</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>4.8% (n = 31)</td>
<td>5.0% (n = 16)</td>
<td>4.7% (n = 15)</td>
<td>.854</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>4.4% (n = 28)</td>
<td>3.8% (n = 12)</td>
<td>5.0% (n = 16)</td>
<td>.440</td>
</tr>
<tr>
<td>Master's Degree, Ph.D., J.D., M.D.</td>
<td>2.0% (n = 13)</td>
<td>1.9% (n = 6)</td>
<td>2.2% (n = 7)</td>
<td>.780</td>
</tr>
<tr>
<td>Dad's Job When R Was 16-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not in Labor Force</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td>1.000</td>
</tr>
<tr>
<td>Scientists, Engineers, Lawyers, Architects, Health</td>
<td>2.3% (n = 15)</td>
<td>2.5% (n = 8)</td>
<td>2.2% (n = 7)</td>
<td>.794</td>
</tr>
<tr>
<td>Counselors, Teachers</td>
<td>1.3% (n = 8)</td>
<td>1.3% (n = 4)</td>
<td>1.3% (n = 4)</td>
<td>1.000</td>
</tr>
<tr>
<td>Protective, Military</td>
<td>2.0% (n = 13)</td>
<td>1.9% (n = 6)</td>
<td>2.2% (n = 7)</td>
<td>.780</td>
</tr>
<tr>
<td>Entertainment, Media</td>
<td>12.8% (n = 82)</td>
<td>12.2% (n = 39)</td>
<td>13.4% (n = 43)</td>
<td>.637</td>
</tr>
<tr>
<td>Food Prep, Cleaning, Service Workers (Ref.)</td>
<td>43.3% (n = 277)</td>
<td>42.5% (n = 136)</td>
<td>44.1% (n = 141)</td>
<td>.691</td>
</tr>
</tbody>
</table>
### Sales, Office and Administrative Workers
- 27.2% (n = 174)  
- 28.4% (n = 91)  
- 25.9% (n = 83)

### Farming, Fishing, Forestry, Setters, Tenders
- 2.5% (n = 16)  
- 2.8% (n = 9)  
- 2.2% (n = 7)

### Construction, Transportation, Movers, Repair
- 8.6% (n = 55)  
- 8.4% (n = 27)  
- 8.8% (n = 28)

### Living Location When R Was 16-17
- **Unknown**  
  - 0.9% (n = 6)  
  - 1.3% (n = 4)  
  - 0.6% (n = 2)
- **Rural (Ref.)**  
  - 79.7% (n = 510)  
  - 80.3% (n = 257)  
  - 79.1% (n = 253)
- **Urban**  
  - 19.4% (n = 124)  
  - 18.4% (n = 59)  
  - 20.3% (n = 65)

### Number of Household Members When R Was 16-17
- **0-2**  
  - 6.6% (n = 42)  
  - 5.9% (n = 19)  
  - 7.2% (n = 23)
- **3-4 (Ref.)**  
  - 80.9% (n = 518)  
  - 80.3% (n = 257)  
  - 81.6% (n = 261)
- **5-6**  
  - 11.3% (n = 72)  
  - 12.5% (n = 40)  
  - 10.0% (n = 32)
- **7 or more people (7-13)**  
  - 1.3% (n = 8)  
  - 1.3% (n = 4)  
  - 1.3% (n = 4)

### Living Residence When R Was 16-17
- **Parent's Household (Both Parents)**  
  - 19.4% (n = 124)  
  - 24.1% (n = 77)  
  - 23.8% (n = 76)
- **Mother's Household (Ref.)**  
  - 68.9% (n = 441)  
  - 70.0% (n = 224)  
  - 67.8% (n = 217)
- **Father's Household**  
  - 5.0% (n = 32)  
  - 4.1% (n = 13)  
  - 5.9% (n = 19)
- **Other Relative's Household**  
  - 1.3% (n = 8)  
  - 0.9% (n = 3)  
  - 1.6% (n = 5)
- **Other**  
  - 0.9% (n = 6)  
  - 0.9% (n = 3)  
  - 0.9% (n = 3)

### Region R Was Living In When R Was 16-17
- **Northeast**  
  - 8.4% (n = 54)  
  - 8.1% (n = 26)  
  - 8.8% (n = 28)
- **North Central**  
  - 14.8% (n = 95)  
  - 15.0% (n = 48)  
  - 14.7% (n = 47)
- **South (Ref.)**  
  - 65.6% (n = 420)  
  - 65.0% (n = 208)  
  - 66.3% (n = 212)
- **West**  
  - 11.1% (n = 71)  
  - 11.9% (n = 38)  
  - 10.3% (n = 33)

### Type of High School Program
- **Vocational**  
  - 4.2% (n = 27)  
  - 4.7% (n = 15)  
  - 3.8% (n = 12)
- **Commercial**  
  - 1.3% (n = 8)  
  - 1.6% (n = 5)  
  - 0.9% (n = 3)
- **College Preparatory**  
  - 40.5% (n = 259)  
  - 41.3% (n = 132)  
  - 39.7% (n = 127)
- **General Program (Ref.)**  
  - 50.8% (n = 325)  
  - 49.1% (n = 157)  
  - 52.5% (n = 168)
- **Other Specialized Program**  
  - 3.3% (n = 21)  
  - 3.4% (n = 11)  
  - 3.1% (n = 10)

### Cognitive Predictors
- **Average Grade In Classes In Last Year of High School**
  - **A/A-**  
    - 9.5% (n = 61)  
    - 9.7% (n = 31)  
    - 9.4% (n = 30)
  - **B+/B- (Ref.)**  
    - 52.7% (n = 337)  
    - 51.6% (n = 165)  
    - 53.8% (n = 172)
  - **C+/C-**  
    - 35.6% (n = 228)  
    - 36.3% (n = 116)  
    - 35.0% (n = 112)
  - **D+/D-**  
    - 2.0% (n = 13)  
    - 2.2% (n = 7)  
    - 1.9% (n = 6)
  - **E or F**  
    - 0.2% (n = 1)  
    - 0.3% (n = 1)  
    - 0.0% (n = 0)

### Highest Degree
- **No Degree**  
  - 1.3% (n = 8)  
  - 0.9% (n = 3)  
  - 1.6% (n = 5)
- **GED or High School Diploma (Ref.)**  
  - 60.3% (n = 386)  
  - 60.9% (n = 195)  
  - 59.7% (n = 191)
- **Associate's Degree**  
  - 22.7% (n = 145)  
  - 23.1% (n = 74)  
  - 22.2% (n = 71)
- **Bachelor of Arts or Bachelor of Science**  
  - 13.4% (n = 86)  
  - 12.2% (n = 39)  
  - 14.7% (n = 47)
### Master's Degree, Ph.D., Professional Degree

<table>
<thead>
<tr>
<th></th>
<th>2.3% (n = 15)</th>
<th>2.8% (n = 9)</th>
<th>1.9% (n = 6)</th>
<th>.434</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>2.3% (n = 15)</td>
<td>2.8% (n = 9)</td>
<td>1.9% (n = 6)</td>
<td>.434</td>
</tr>
<tr>
<td>Agree (Ref.)</td>
<td>97.7% (n = 625)</td>
<td>97.2% (n = 311)</td>
<td>98.1% (n = 314)</td>
<td>.434</td>
</tr>
</tbody>
</table>

### Self-Esteem at 16-17 (On the whole, I am satisfied with myself)

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Agree (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life With No Danger In It Would Be Too Dull For Me [Child] (13-14)</td>
<td>39.4% (n = 252)</td>
<td>60.6% (n = 388)</td>
</tr>
<tr>
<td>Life With No Danger In It Would Be Too Dull For Me (16-17)</td>
<td>26.7% (n = 171)</td>
<td>73.3% (n = 469)</td>
</tr>
</tbody>
</table>

### Childhood Experiences and Behaviors

#### Used Job Fair With Employers Or Military While in High School

<table>
<thead>
<tr>
<th></th>
<th>R Did Use</th>
<th>R Did Not Use (Ref.)</th>
<th>School Did Not Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Job Fair With Employers Or Military While in High School</td>
<td>47.8% (n = 306)</td>
<td>50.9% (n = 326)</td>
<td>1.3% (n = 8)</td>
</tr>
<tr>
<td>Never (Ref.)</td>
<td>83.1% (n = 532)</td>
<td>84.8% (n = 543)</td>
<td>85.9% (n = 550)</td>
</tr>
<tr>
<td>Once</td>
<td>14.7% (n = 94)</td>
<td>14.4% (n = 46)</td>
<td>14.1% (n = 90)</td>
</tr>
<tr>
<td>Twice</td>
<td>0.8% (n = 5)</td>
<td>1.3% (n = 4)</td>
<td>0.8% (n = 5)</td>
</tr>
<tr>
<td>More Than Twice</td>
<td>1.4% (n = 9)</td>
<td>1.3% (n = 4)</td>
<td>1.4% (n = 9)</td>
</tr>
</tbody>
</table>

#### Damage School Property On Purpose At 13-14

<table>
<thead>
<tr>
<th></th>
<th>Never (Ref.)</th>
<th>Once</th>
<th>Twice</th>
<th>More Than Twice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage School Property On Purpose At 13-14</td>
<td>60.5% (n = 387)</td>
<td>60.6% (n = 194)</td>
<td>60.3% (n = 193)</td>
<td>60.5% (n = 387)</td>
</tr>
<tr>
<td>No</td>
<td>39.5% (n = 253)</td>
<td>39.4% (n = 126)</td>
<td>39.7% (n = 127)</td>
<td>39.5% (n = 253)</td>
</tr>
<tr>
<td>Yes (Ref.)</td>
<td>84.8% (n = 543)</td>
<td>86.3% (n = 276)</td>
<td>83.4% (n = 267)</td>
<td>84.8% (n = 543)</td>
</tr>
<tr>
<td>Adult Household Member Sent to Jail/Prison Since R Was 10</td>
<td>15.2% (n = 97)</td>
<td>13.8% (n = 44)</td>
<td>16.6% (n = 53)</td>
<td>15.2% (n = 97)</td>
</tr>
<tr>
<td>No</td>
<td>84.8% (n = 543)</td>
<td>86.3% (n = 276)</td>
<td>83.4% (n = 267)</td>
<td>84.8% (n = 543)</td>
</tr>
<tr>
<td>Yes (Ref.)</td>
<td>15.2% (n = 97)</td>
<td>13.8% (n = 44)</td>
<td>16.6% (n = 53)</td>
<td>15.2% (n = 97)</td>
</tr>
</tbody>
</table>

#### Physical Aggression (Hit or Fight 14-17)

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Aggression (Hit or Fight 14-17)</td>
<td>40.8% (n = 261)</td>
<td>59.2% (n = 379)</td>
</tr>
<tr>
<td>Not True</td>
<td>38.4% (n = 123)</td>
<td>61.6% (n = 197)</td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>43.1% (n = 138)</td>
<td>56.9% (n = 182)</td>
</tr>
</tbody>
</table>

#### Child Is Impulsive Or Acts Without Thinking

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Has Trouble Getting Along With Other Children</td>
<td>78.0% (n = 499)</td>
<td>22.0% (n = 141)</td>
</tr>
<tr>
<td>Not True</td>
<td>75.3% (n = 241)</td>
<td>24.7% (n = 79)</td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>80.6% (n = 258)</td>
<td>19.4% (n = 62)</td>
</tr>
</tbody>
</table>

#### Child Is Not Liked By Other Children

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Hangs Around With Kids Who Get Into Trouble</td>
<td>85.9% (n = 550)</td>
<td>14.1% (n = 90)</td>
</tr>
<tr>
<td>Not True</td>
<td>85.0% (n = 272)</td>
<td>15.0% (n = 48)</td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>86.9% (n = 278)</td>
<td>13.1% (n = 42)</td>
</tr>
</tbody>
</table>

#### Child Hangs Around With Kids Who Get Into Trouble

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>True (Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Hangs Around With Kids Who Get Into Trouble</td>
<td>75.5% (n = 483)</td>
<td>24.5% (n = 240)</td>
</tr>
<tr>
<td>Not True</td>
<td>75.9% (n = 243)</td>
<td>24.1% (n = 240)</td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>75.0% (n = 240)</td>
<td>25.0% (n = 240)</td>
</tr>
</tbody>
</table>
Significance levels are reported for group differences between the experimental and comparison groups.
*p < .05; **p < .01; ***p < .001

As is shown in Figure 2.3, the region of common support after matching is larger.

Because unmatched cases from both the treatment and control group were discarded, the density of estimated propensity scores is improved and the distribution of propensity scores among both groups are nearly the same (Austin 2010/2011; Beal and Kupzyk 2014; Guo and Fraser 2010; Kupzyk and Beal 2017; Love 2003; Rosenbaum and Rubin 1983/1985; Rubin 1997). As Guo and Fraser (2010) discuss, propensity score matching resamples the data. Had there been perfect matching for the treated and control group, the total sample size would have been 662, (N = 331 for the military sample and N = 331 for the civilian sample). The total sample size is 640 here because after propensity score matching, there were 331 treatment cases and 320 control cases. In order for the data to be balanced, 11 of the treated cases were removed from analysis. In other words, there were 11 cases from the treatment group that did not have a propensity score within .2 calipers of a propensity score from a control case and these 11 cases were discarded. These cases that were discarded fell outside of this region of common support and
because of this, balance on the covariates was improved.

Figure 2.3 Density of Observed Propensity Scores for Military Members and Civilians After Matching

![Density of Observed Propensity Scores for Military Members and Civilians After Matching](image)

To determine whether this process can assist in future work to examine the impact of military experiences on different life outcomes, a cross tabulation was conducted using this matched dataset between military status and crime. Table 2.4 shows the distribution of proportion of crimes committed for military members and civilians. As is shown, that there is a statistically significant relationship with military status on crime (p < .001). Considering that this study used a quasi-experimental method to produce a dataset where a group of military members and a group of civilians that are demographically, cognitively, and socially similar are still significantly different on crime is important. This study matched civilians and military members on 73 confounding variables. Using so many matching variables eliminates the possibility of the relationship between military status and crime being due to an outside variable that was not controlled for. In other words, the relationship between military and crime cannot be explained by a pre-existing factor because so many pre-existing factors were accounted for, rather there is something
about the military that has an effect on crime. Using this matched dataset of military members and civilians allows for this relationship to be examined further.

Table 2.4. Cross Tabulation of Military Status and Crime (N = 640)

<table>
<thead>
<tr>
<th>Crime</th>
<th>Military</th>
<th>Civilian</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00</td>
<td>225 (70.3%)</td>
<td>176 (55.0%)</td>
<td>401 (62.7%)</td>
</tr>
<tr>
<td>.04</td>
<td>27 (8.4%)</td>
<td>59 (18.4%)</td>
<td>86 (13.5%)</td>
</tr>
<tr>
<td>.08</td>
<td>30 (9.4%)</td>
<td>42 (13.1%)</td>
<td>72 (11.3%)</td>
</tr>
<tr>
<td>.12</td>
<td>14 (4.4%)</td>
<td>10 (3.1%)</td>
<td>24 (3.8%)</td>
</tr>
<tr>
<td>.16</td>
<td>6 (1.9%)</td>
<td>17 (5.3%)</td>
<td>23 (3.6%)</td>
</tr>
<tr>
<td>&gt; = .20</td>
<td>18 (5.6%)</td>
<td>16 (5.0%)</td>
<td>34 (5.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>320 (100.0%)</td>
<td>320 (100.0%)</td>
<td>640 (100.0%)</td>
</tr>
</tbody>
</table>

Chi-Square = 26.339 p = .000

DISCUSSION

The current study used a quasi-experimental method, propensity score matching, to create matched sample dataset of military members and civilians using several measures that are assessed prior to military service (demographics, cognitive predictors, and childhood experiences and behaviors). As is shown in the tables and figures, the data prior to matching was greatly imbalanced and after matching, the data was balanced and improved. Creating this matched sample dataset between military members and civilians serves as the first step in being able to examine the impact of military on life outcomes between these two groups, something that is greatly overlooked in the research.

Limitations

This study was largely methodological and there are a few limitations to be addressed. The first and main limitation with this study is the overall sample size. There is a very large difference between individuals who have ever served in the military and those who have not in the NLSY-CYA. Because the number of those who have served is so small, compared to civilians, it greatly reduced the overall sample size. In addition, a second limitation of this study is that there was so much missing data. Imputation does
help resolve the issue of missing data but it is still based on estimated guesses of what the data would be had there been no missing data in the first place.

Another limitation deals with one of the measures of family structure as a predictor. The current study included a measure of where the respondent was living when they were 16 or 17. The possible choices included: living with both parents, living with mother, living with father, other relative, and other. One of the limitations with this specific measure is that it does not address whether the parent is a biological parent, step parent, or adoptive parent. This is important to the literature on the military because studies acknowledge that military enlistment is higher for adolescents living with step parents and living with neither biological parent (Spence et al. 2012). Having this distinction included in the study would make the matched sample of military members and civilians more accurate and this measure of family structure would not only address how this affects military enlistment but also how it affects later life outcomes. In other words, using family structure as a predictor and having this distinction would improve the overall findings of how military affects later life outcomes for individuals who grew up in these types of households.

Future Research

This study serves as the first step in showing the impact of military status on later life outcomes. As was shown in Table 2.3, there are no statistically significant differences on any of the predictors with regards to military status, meaning that these two groups are comparatively the same and this matched dataset allows for examination of how the military would affect later life outcomes. This dataset can be used in future research to examine the impact of military on life outcomes. For example, there has been a long
interest in the study of criminology on how the military affects crime (BMJ 2013; Bronson, Carson, Noonan, and Berzofsky 2015; Elder Jr. 1998; Köbach et al. 2015; MacManus et al. 2013; Rand 1987; Rohlfs 2010; Teachman and Tedrow 2016; Worthen 2011). Table 2.4 shows a cross tabulation of military status on crime and shows that this relationship is statistically significant (p < .001). Creating this matched dataset allows for this relationship to be examined more in-depth.

Many life outcomes that have been examined in the literature on military service have focused on how the military affects posttraumatic stress disorder (Gansel 2013; Killgore et al. 2008; Köbach et al. 2015; MacManus et al. 2013; Worthen 2011), how the military affects marriage (Bouffard 2005; MacLean and Elder Jr. 2007), and how the military affects substance and alcohol use (MacManus et al. 2013) to name a few. But, in many of these studies, the sample consists only of military personnel and does not include a comparison to civilians. In order to assess the specific impact of military service, propensity score matching is a technique that researchers could use in order to have a matched dataset with a comparative group. Using this technique balances the data and allows for assessing the true impact of military on life outcomes.
CHAPTER III
CRIMINAL OFFENDING DIFFERENCES BETWEEN MILITARY MEMBERS AND CIVILIANS

Abstract

Many researchers within the field of criminology have long been interested in studying the relationship between military service and crime. However, a weakness in the research is that it often does not include an adequate comparison group. Using life course theory, I examine the relationship between serving in the military and later life crime for military members and civilians. This study uses data based on a matched sample of military and civilian respondents generated through propensity score matching using the National Longitudinal Survey of Youth, Child and Young Adult sample (NLSY-CYA) 1986-2014. Using SPSS, ordinary least squares regressions were conducted on the full sample and separated by military status to examine predictors of crime. Results show that childhood and adolescent predictors of crime and military status are significant in the full sample model. Military members commit fewer crime compared to civilians. Therefore, the military serves as a transition event where individuals are directed towards a trajectory that decreases crime. Findings show support for life course theory and give further insight into the relationship between military service and crime.

Keywords: military, crime, life course, propensity score matching
The military serves as a popular topic of interest for researchers. Many researchers have been interested in studying military enlistment and predicting who is likely to join (Bachman, Segal, Freedman-Doan, and O’Malley 2000; Beaver, Barnes, Schwartz, and Boutwell 2015; Elder Jr., Wang, Spence, Adkins, and Brown 2010; Ford, Gibson, Griepentrog, and Marsh 2014; Johnson and Kaplan 1991; Teachman and Tedrow 2014). Other researchers have been interested in how the military affects later life behavior and how certain times of war affect individuals differently (Elder Jr. 1986; MacLean and Elder Jr. 2007; Snowden, Oh, Salas-Wright, Vaughn, and King 2017; Teachman and Tedrow 2016). For example, divorce rates are higher for people who served in World War II (WWII) and the Vietnam War and is lower for people who served in more recent years (MacLean and Elder Jr. 2007). There are several reasons why this might be. For instance, this finding could be due to the time of the war, it could be due to the military now being an all-volunteer force, or it could be due to the individual’s life course decisions prior to entering the military. In other words, when studying military life, context matters (Craig and Connell 2015).

Researchers who have taken context into account when studying military and crime have often used life course theory in doing so (Bouffard 2005; Elder Jr. 1998; Miller, Shutt, and Bernstein 2010; Sampson and Laub 1993; Teachman and Tedrow 2014/2016). However, when comparing military members to civilians, there is oftentimes not a general baseline comparison group. It is likely that those who join the military differ in important ways from civilians. For example, they may have different family backgrounds and this could influence their decision to join the military. However, very few studies are able to compare military and civilian groups to account for differences
prior to joining the military. Having a matched sample of military members and civilians can better assess the impact of military on crime. Therefore, the primary purpose of this study is to gain a greater understanding of what the new era of military members looks like and how they compare to civilians with regards to crime. More specifically, the purpose of the current study is to examine how military status affects crime by using life course theory and a matched sample of military members and civilians.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Explanations of the Link Between Military and Crime

Criminologists have included examinations of military since the very early days of the field. In the early study of criminology, researchers were using biology and genetics as predictors of criminal behavior. That is, researchers thought that individuals were “born criminals” (Lombroso 1891) and had natural tendencies that would lead them to participate in deviant and criminal activities. One such born trait that received attention was the study of feeble-mindedness. The concept of feeble-mindedness is that individuals are born with illnesses that would make them more prone to problems associated with social and cognitive development (Fink 1938; Goddard 1923; Haines 1917; Zeleny 1933). In other words, those that were feeble-minded were considered to be less intelligent and were thought to have mental health problems that would lead them to engage in crime.

Charles Goring was one of the first criminologists to apply the concept of feeble-mindedness and to show how certain populations were characterized as such. Goring (1913) compared criminals, students, and individuals in the military by intelligence. During this time, the Stanford-Binet IQ test was newly developed and he wanted to see
how these individuals compared to one another with regards to intelligence using this measure. Goring (1913) found that a high percentage of those who were in the military were found to be feeble-minded and so were individuals who were criminals.

Stemming from this research on criminals and military, other researchers began to find additional evidence showing this connection (Haines 1917; Lunden 1952; Munson and Miller 1921; Stone 1921). Researchers found this connection by studying prison populations and getting background information and narratives from inmates and prison guards. For instance, Lunden (1952) found that between 1947-1949, 30% of the population of a Mississippi Valley prison was made up individuals that had served in the military at one time (serving in either WWI or WWII). Lunden’s (1952) research was significant because it showed that a high number of prisoners had previous military experience. Lunden (1952) found similar findings in other prisons across the United States. In a Wisconsin prison, 52% of the inmate population between the ages of 16-30 had served in WWII. In order to determine why there was such a great representation of military service men within the prison system, researchers like Lunden (1952) and Munson and Miller (1921) had to look at these inmate’s prior records and what their behavior was like before they decided to join the military.

Lunden (1952) and Munson and Miller (1921) found that a high percentage of these individuals had prior criminal records before they entered the military. Almost 70% of the military members in the prison system between 1947-1949 had prior contact with the criminal justice system before they decided to join the military (Lunden 1952). Thus, determining the influence that serving in the military had on these individuals and their involvement in crime is difficult because many of them had prior records before their
enlistment. Lunden (1952) concludes that there is a relationship between individuals who have served in the military and those who are in prison but exercises caution with regards to determining causality. Munson and Miller (1921) also acknowledge the connection between military service and crime. However, they also note that those with criminal behavior during or after service were likely to engage in criminal behavior prior to service.

Recent researchers have also been interested in how the military affects crime (Bronson, Carson, Noonan, and Berzofsky 2015; Logan and Pare 2017; Snowden et al. 2017; Teachman and Tedrow 2014/2016; Van Dyke and Orrick 2017; Van Schellen, Apel, and Nieuwbeerta 2012). One clear finding is that crime and military service are still correlated. Bronson et al. (2015) examined the number of veterans in jail and prison populations across the United States from 2011-2012. They found that a greater number of veterans were in jail or prison due to violent offenses compared to nonveterans. Logan and Pare (2017) also examined prison inmates with military backgrounds and argued that, “Many individuals with military backgrounds will experience incarceration over their life course” (Logan and Pare 2017:814). In another study examining prison inmates, Van Dyke and Orrick (2017) found that inmates with a military background are more likely than civilian inmates to be in prison for violent offenses. Plenty of work has shown that there is an association but not many with a clear theoretical understanding of the connection.

*Life Course Theory*

Life course theory is an age-graded theory that focuses on life events that take place at different points in time (Baltes 1987; Elder Jr. 1985; Hogan 1978; Moffitt
The age at which one experiences a life event will affect their future life outcomes (Hogan 1978). The key elements that comprise the life course theory are trajectories, turning points, and transitions (Elder Jr. 1985; Moffitt 1993/2008; Sampson and Laub 1992/1993). A trajectory is usually a long pathway where current and future behaviors fall into a range of expected activities. For example, a typical educational trajectory would have an individual starting school at around age 6, complete high-school at age 18, and move on to college or a career.

Turning points can be described as the event which led the individual onto a specific path (Elder Jr. 1985; Moffitt 1993/2008; Sampson and Laub 1992/1993). Since they influence the beginning of a path, when turning points happen is important to the life course (Hogan 1978; Sampson and Laub 1992/1993). If they happen too early, or too late, they may set the individual on a different path than if they occur in a more expected or typical age. In addition, turning points also redirect one’s path or trajectory. Turning points are not necessarily one point that leads immediately to a new path but can initiate a transition from one path to another. A transition is usually short-term and embedded within trajectories (Elder Jr. 1985; Laub, Sampson, and Sweeten 2008; Moffitt 1993/2008; Sampson and Laub 1992/1993). Transitions can be described as the start of a new job, getting married, and military service (Elder Jr. 1985; Laub et al. 2008).

Transitions and turning points are similar concepts as, “All transitions are potential turning points” (Hareven and Masaoka 1988:274), and they both can be thought of as events that influence the life outcomes of individuals.

An important aspect of life course is that it is an integrated theory that uses concepts from social control and self-control theories. For example, control theory
addresses the importance of attachments (Hirschi 1969). This is important to life course theory because individuals who have weak parental or peer attachments are set on a different path than an individual with strong attachments and research has shown that individuals with weak attachments are likely to commit crime later in life (Hirschi 1969; Sampson and Laub 1993). Attachments may be weak for various reasons. For instance, if an individual grew up in a household with a criminal parent, parental attachment would be weak because the parent may have had to spend time in jail or prison. Thus, the attachment would be weak because they were not in the household. This aspect of attachment is integrated within life course theory, for example, because individuals with weak attachments would proceed throughout the life course differently compared to someone with strong attachments. Control theory is embedded within life course theory because these attachments influence other aspects of life.

Self-control theory is also integrated within life course theory and individuals with low self-control are likely to be linked to crime (Gottfredson and Hirschi 1990). For example, individuals who were harshly disciplined as children may grow up to have low self-control and this, in turn, could affect their crime trajectory (Gottfredson and Hirschi 1990). With the individual being harshly disciplined as a child, they might not have learned the full difference between right and wrong and the consequences for their actions. Individuals who have low self-control also seek more immediate gratification and usually are impulsive (Gottfredson and Hirschi 1990). These elements affect how one behaves with others and are elements that are linked to later crime. Moreover, individuals who exhibited problem behaviors as children are likely to be linked to crime later on as well (Sampson and Laub 1993).
One of the most important tests of life course theory came from Sampson and Laub (1993). They used secondary data analysis to study the early factors that might be associated with later life behavior. Sampson and Laub (1993) used data originally collected from Glueck and Glueck (1950) where 500 delinquent and non-delinquent boys were sampled to examine social background differences that led some of these boys to delinquency. Sampson and Laub (1993) also used the follow-up studies that Glueck and Glueck collected from the same boys at ages 25 and 32 to see how these boys proceeded throughout their life course. Sampson and Laub (1993) examined this data further to gain a better understanding of the factors that lead to a trajectory of crime.

Through Sampson and Laub’s (1993) work they identified several childhood predictors of crime and deviance in adulthood. For example, early delinquency, parental deviance, having a weak attachment to parents, and weak peer associations are likely links to later crime and deviance in adulthood (Nagin, Farrington, and Moffitt 2001; Sampson and Laub 1993). In addition, Sampson and Laub (1993) also found that childhood and adolescent personality factors, like temper tantrums, were linked to crime and deviance in adulthood. Moreover, Sampson and Laub (1993:129) note that, “Regardless of which measure of delinquency or antisocial behavior in childhood is used, childhood misbehavior thus has a powerful relationship with adult crime and deviance.” This means that, overall, children who are disruptive or problematic are more likely to be linked to later life crime and misbehavior. However, these predictors are not necessarily unique to life course theory, as these findings are often associated with other criminological theories as well.
One element of life course theory that is unique is the emphasis not only on what sets someone on a path to crime, but what can lead to desistence from crime (Craig and Foster 2013; Nagin et al. 2001; Shover and Thompson 2001). Nagin et al. (2001) examined four types of offenders (high chronic, low chronic, never convicted, and adolescent-limited) and found that in terms of life outcomes, those who were never convicted and those who were adolescent-limited offenders had more positive work and family trajectories than the chronic offenders. Therefore, the turning point for these individuals is the desistance from crime that set them on a new trajectories. Craig and Foster (2013) examined crime desistance and how it was affected by marriage and by serving in the military. What they found was that marriage positively affected desistance but military service only affected desistance for females but not males. Shover and Thompson (2001) also examined desistance from crime and the life course and found that age, a decent job, and higher education increased desistance. Sampson and Laub (1993) also discussed how social institutions, like the military, can shift the trajectory of one’s life.

**Military Service, Crime, and the Life Course**

Researchers have used life course theory to examine how the military may serve as a transition that sets a path of crime. For example, researchers have examined the impact of military on later life outcomes and the influence of combat (Adams, Nikitin, Wooten, Williams, and Larson 2016; Cucciare et al. 2015; Giardino 2009; Kwan, Jones, Hull, Wessely, Fear, and MacManus 2017; MacManus et al. 2013). For example, MacManus et al. (2013) found that serving in a combat role was a risk factor for later violent offending. Research shows that combat may be a turning point that sets a path of
crime, particularly violent crime (Kwan et al. 2017; MacManus et al. 2013; Rohlfs 2010). Therefore, the experiences one has in the military may be operating to create crime. However, most of this research does not account for the life histories and characteristics of individuals who join the military that may predict crime themselves.

Some research on the military has focused on early factors that influences one to join the military in the first place. It has been found that individuals who join the military are more impulsive, sensation-seeking, and aggressive than civilians (Rosellini et al. 2015; Snowden et al. 2017). These are also some of the factors that have been shown to be predictors of crime (Huesmann, Eron, Lefkowitz, and Walder 1984; Jennings, Hahn Fox, and Farrington 2014; Laub, Nagin, and Sampson 2001). Therefore, it is not clear if it is the military experience or the characteristics of the individual that led them into the military that is important in predicting their criminal involvement.

One of the most commonly found links between early life behavior and later life crime is prior delinquency and deviant behavior (Bernburg and Krohn 2003; Huesmann et al. 1984; Laub et al. 2001; Sampson and Laub 1993; Teachman and Tedrow 2016; Wiley, Slocum, and Esbensen 2013). Specifically, having a history of engaging in physical aggression correlates with later life crime (Huesmann et al. 1984; Laub et al. 2001; Teachman and Tedrow 2016). There is also evidence that shows individuals with a history of physical aggression are not only likely to be linked to later life crime but also are likely to enlist in the military (Elder Jr. et al. 2010; Wang, Elder Jr., and Spence 2012). Thus, the relationship between military and crime may be spurious and linked to a history of physical aggression.
Sampson and Laub (1993) specifically focused on the military and found that delinquency and early temper tantrums were related to later crime. That is, for individuals serving in the military, patterns that were established earlier in life continued to have an influence into adulthood. “Regardless of the particular measure of childhood misbehavior used, the continuity of childhood misbehavior to adulthood thus emerges even while under military service” (Sampson and Laub 1993:131). This finding suggests that military service does not influence desistance for all individuals but only for some. Sampson and Laub (1993) further note that individuals in the military who did not have a delinquent past fared better than individuals who did. Moreover, Laub and Sampson (2003) returned to Glueck and Glueck’s original data by interviewing the original sample at age 70. Many of the men stated that the military was what helped change their trajectory in a positive way. In other words, the military served as turning point for these men to no longer engage in crime and shifted their trajectory for the better.

Although the research by Sampson and Laub (1993) and Laub and Sampson (2003) shows how the military may serve as a turning point that may redirect one’s crime trajectory while still examining the impact of childhood predictors, there is limited research on this topic. Most importantly, there is almost no research that examines this issue using a comparable group of civilians in order to assess the impact of military on crime. One exception is by Teachman and Tedrow (2016). Teachman and Tedrow’s (2016) study does compare military members and civilians, rather than just providing a description of military groups or at best comparing military members and prison inmates. Using a fixed-effect approach to examine crime differences between military members and civilians, they found that military service does not affect the risk of being arrested for
violent crimes compared to civilians. However, being in the military compared to being a civilian decreases the risk of being arrested for nonviolent crimes. Although they discuss the effects of military on crime and control for early crime, they do not have a group of civilians that are necessarily comparable to the military group on other important characteristics. That is, outside of early crime, other demographics, cognitive factors, and childhood experiences and behaviors are not controlled for. The comparison between military members and civilians is largely on arrests, not having a demographically similar group prior to military service.

Another aspect that is not only important to life course theory but to also the research on military is the age of the individual. There is research that examines life outcomes of military members and age of first joining the military being an important factor (Elder Jr. 1986; Elder Jr. et al. 1991; Elder Jr., Shanahan, and Clipp 1994). This work finds the younger an individual is when they first join the military, the better their life outcomes will be (Elder Jr. 1986; Elder Jr. et al. 1991). However, there is evidence to the contrary with regards to crime. Munson and Miller (1921) examined the age of joining the military and how crime is affected. They argued that because the military allows for entering service in early adulthood, some individuals have not completely matured yet and misbehavior might still be likely. Because individuals can enter service at 18, their deviant behavior might not have begun to taper off. Thus, younger individuals in general, including those in the military, are more likely to engage in crime simply due to their age and maturity.

In spite of the relatively rich research on military and criminal experiences, what is still missing is a clear comparison of how the life-course of military members
compares to civilians. With very few exceptions (e.g. Teachman and Tedrow 2016), when such a comparison is made it is among prison inmates. In addition, the existing literature focuses on predictors that lead to a military trajectory, not how the predictors of military enlistment affect one’s criminal trajectory, or how the military may be a transition event for some individuals that redirects their trajectory. This study seeks to examine how military service mediates the relationship between early life predictors and later life crime. More specifically, using a matched sample of military members and civilians, the impact of military on crime is assessed using the perspective of the life-course. Therefore, this study has two specific research questions: (1) Do childhood predictors of crime set a trajectory for later crime? (2) Is military service related to later crime?

DATA AND METHOD

The data used for this research were obtained through the National Longitudinal Survey of Youth, Child and Young Adult sample (NLSY-CYA) 1986-2014. This dataset is available online via the Bureau of Labor Statistics. The NLSY originally began in 1979 and surveyed teens and young adults between the ages of 14-22 (N = 12,686). Individuals who were mothers in 1986 and part of this original survey began to complete questionnaires on their parenting practices and their children. Once the children were at least 10 years old, they too would complete a questionnaire, known as the child assessment supplemental questionnaire where they would answer questions about their childhood and their parents. Once the children were 15 years old, they then completed a questionnaire that resembled the original 1979 survey. Starting in 1994, these individuals completed this survey every other year. Participants in the NLSY and NLSY-CYA answer self-report questions that range from a variety of topics including family and school life,
peer associations, and self-reported delinquent behavior and crime. There are currently 11 waves of data on these children and young adults, with the year 2014 being the most recently released wave.

This study focuses on a subset of the full NLSY-CYA. The final dataset was obtained through propensity score matching based on background covariates to match military members and civilians. Doing this allows for more accurate examination of the impact of military status on crime. Individuals were matched on pre-existing factors like demographics, cognitive predictors, and childhood experiences and behaviors shown to influence one’s decision to join the military. Thus, the only difference between the two groups is military status. This dataset allows for further life outcomes of the impact of military to be assessed. As was shown in previous research, many of the predictors of military enlistment overlaps with predictors of crime.

The current NLSY-CYA consists of a total sample of 11,521 individuals. Because the focus of this study is on individuals who have served in the military in the post 9/11 era, the sample was generated from the waves including years 2000-2014. From 2000-2014, 8201 individuals indicated their military status (N = 8201), with 331 who reported military experience (N = 331) and 7870 reporting never having been in the military (N = 7870). For this analysis, information was collected across waves as early as 1986 to create variables for childhood behavioral patterns at specific ages. Since the goal of this study is to assess the role of early life course predictors of crime, and to assess whether military experience influences these predictors, only a small portion of the non-military group is used. This group was created using a propensity score process. The current study uses the data that were generated after propensity score matching (N = 640).
Using propensity scores, individuals were matched via nearest neighbor on a one-to-one ratio with a caliper of .2. This means that for every one individual in the treated group (military), there would be one individual from the control group (civilian) that are assessed to be very similar to the military individual on all of the included factors. Furthermore, to prevent poor matches, the caliper of .2 ensures that cases will be matched where propensity scores, or probability of joining the military, are very close. In other words, the caliper guarantees that individual’s scores on the range of items included are within close proximity to one another. In order to have better balance, cases were discarded from both the treated group and the control group if matches could not be made. The final sample size was 640 individuals (N = 640) with half in each group (320 in the military group and 320 in the civilian group).

*Measures*

Appendix D lists a description of all the variables used in the study, including the original survey questions and how items were coded, and a further description of how variables were subsequently recoded. Appendix D also lists the specific years for which data were pulled for the specific variables. A brief description of the key variables is provided here.

*Dependent variable*

There are a number of indicators of crime within the NLSY-CYA. These unfortunately vary across each wave of data collection. Therefore, to have a consistent measure, I created a variable assessing the percentage of crimes committed after adulthood or joining the military. Specifically, respondents indicated whether in the past year they have participated in three acts; hit or seriously threatened to hit someone, been
in a physical fight at work or school, or had hurt someone badly enough for them to see a doctor. Each item was coded 1 = yes and 0 = no. Therefore, in each wave, respondents could report up to three acts of crime\(^1\).

For civilian respondents, the total number of crimes is aggregated starting in the wave when the individual reached legal adulthood (18 years old). Since one of the main research questions of this study is whether military experience influences criminal trajectories, the total crime for military respondents includes only the waves after they reported joining the military. Since the number of waves each respondent may have completed after these cut off points may have varied, the measure of crime is the proportion of possible crimes reported by the respondent. For example, if the individual was 18 or joined the military in the 2002 wave, they could have reported up to 21 crimes. The total number of times the individual reported a crime across these waves was added and then divided by the total number of possible crimes. Therefore, the final measure of crime is the percentage of crimes the individual reported as adults or after joining the military.

Using this method, the original range of the dependent variable was from 0-.67 (committed no crimes to up to 67% of the crimes). However, this was skewed toward zero (skewness statistic = 2.624), with less than 5% of the sample reporting a proportion of crime greater than .20. Therefore, the final dependent variable was recoded with any cases higher than .2 being coded as .20 or higher. This improved the skewness statistic by

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\(^1\) Because this study focuses on the post 9/11 group of military members, data for the dependent variable were pulled for the years 2000-2014. However, the variable for hurt consisted of data from 2002-2014, as this item was not available in 2000. Therefore, for the year 2000 only hit and fight are included.
0.952, but still showing that this variable is skewed (skewness statistic = 1.672). Research has shown that because violent offending is rare, a small group of individuals are responsible for a large amount of violent offending (Piquero 2000). Therefore, when violent offending is the outcome of a study, as is the case in the present study, data is likely skewed. The final distribution of the dependent variable is shown in Table 3.1.

**Independent and control variables**

The primary independent variable of interest in this study is military status. Military status was a dichotomous variable indicating if individuals ever reported being a military member between 2000-2014. So for this analysis, those who were in the military were coded as one, all else, or those who were never in the military, were coded as zero. This military variable was constructed in the NLSY-CYA to indicate whether the respondent was in the military at the time of the interview. Originally, this variable was coded as 0 = not in the military, 1 = in the active forces, and 2 = in the guards/reserves. Due to the small number of respondents indicating that they were in the active forces or guards/reserves for these years, I dichotomized this variable. Data for this variable were available for each wave of interest.

Control variables included several measures related to life course theory as well as basic demographics. These include sex (1 = male, 0 = female), race (1 = Non-Black, 0 = Black), age, and marital status. Marital status was coded into a dummy variable with never married being the reference category. Past research has found a consistent pattern of parental deviance being a risk factor for later crime (Nagin et al. 2001; Sampson and Laub 1993). Therefore, one control related to family background is if the individual had an adult household member sent to jail or prison since they were 10 years old (adult
jail/prison), where 1 = yes and 0 = no.

There are a number of variables consistent with important life predictors of crime that are controlled in the analysis. The first is whether the respondent believed life would be dull without any danger in it (1 = agree, 0 = disagree, measured at 16 or 17 years old). Other measures indicated patterns of childhood behavior problems as assessed by the respondent’s mother when the respondent was 13 or 14 years old. The first is if the individual had trouble getting along with other children (along), where 1 = true and 0 = not true. The second is if the individual had a strong temper (temper), where 1 = true and 0 = not true. All three of these measures have been utilized in past work focusing on the self-control of individuals and are important parts of the life course. For instance, individuals who believe that life would be dull without any danger in it are probably risky individuals. These individuals might seek out dangerous or risky situations and this could affect their life outcomes.

Lastly, since one of the main findings in life course work is that early involvement in crime predicts a continued trajectory of crime, I control for crime committed when the child was between the ages of 10 and 17. This variable is a composite measure that includes six different specific forms of childhood delinquency: bullies, breaks, damage, fight, hit, and hurt. Bullies and breaks are variables that were obtained from mothers and represent delinquency committed between the ages of 10 and 13. Damage was a self-report item obtain from the respondent between the ages of 10 and 13. In addition, fight, hit, and hurt were self-report items obtained from the respondent between the ages of 14 and 17. Both measures of bullying and breaking (if the individual bullied or was cruel to others and if the individual purposely broke their own or other’s things) are dichotomous.
where 1 = true and 0 = not true. The measure for damage (how many times the individual damaged school property on purpose in the last year) was also dichotomous where 1 = once or more and 0 = never. The self-reported variables of fight, hit, and hurt are also all coded to be dichotomous (1 = yes and 0 = no) indicating if the respondent got into a fight at work or school in the last year, hit or seriously threaten to hit someone in the last year, or hurt someone badly enough to send them to the doctor within the last year.

These individual items were added together to determine how many times the individual engaged in these behaviors. The purpose of this variable is to establish whether there is a pattern in the crime trajectory of the respondent. Specifically, it allows me to control for the delinquent trajectory in adolescence to assess the impact on crime in adulthood or after joining the military. The maximum value for young crime is 12, meaning that the individual engaged in every one of these behaviors. Although there is a total of 6 items that comprise the young crime variable, the total number is 12 because of how variables were coded. For example, there are 2 variables for each item – Hit at 14 or 15 and Hit at 16 or 17, Bullies at 10 or 11 and Bullies at 12 or 13. Although the maximum number is 12, no respondent had a value greater than 8. Like the dependent variable, this variable was skewed towards zero (skewness statistic = 1.452) and less than 3% of the sample reported to more than 5 crimes. Therefore, “young crime” is a continuous variable that was truncated to range between 0-5 where 0 indicates that the individual did not engage in any of these behaviors as an adolescent and 5 indicates that they repeatedly engaged in these behaviors as an adolescent. Although still clearly skewed (skewness statistic = 1.070), once this variable was truncated the skewness improved by 0.382.
ANALYTIC STRATEGY

Using SPSS 25, I started with a descriptive analysis of the military members and civilians. Then, bivariate tests were analyzed to determine if there are significant mean differences on key variables between military members and civilians. Following this, I performed an independent samples t-test for military status and crime and calculated the effect size of military on crime. Then, I performed multivariate analyses to assess the impact of the predictors on crime. I conducted three ordinary least squares (OLS) regression analyses. The first was to assess the impact of military status on crime, controlling for sex, race, age, marital status, lifedull, along, temper, adult jail/prison, and young crime. Then, because military was significant in the full model, I then conducted this same OLS regression separately on military members and civilians to determine whether the predictors for each sub-sample varied.2

RESULTS

Table 3.1 shows the descriptive statistics of the study variables and is broken up by military status. As is shown, there are no statistically significant differences between military members and civilians with any of the study variables except for crime. That is, military members and civilians appear to be very similar. This similarity is expected because the civilian sample was intentionally created to be matched to the military. This analysis confirms that propensity score matching was successful. For instance, both military members and civilians appear to have the same opinion on life being dull without any danger in it, with 73.1% of military members and 73.4% of civilians agreeing with

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2 Z-Scores were calculated to determine if there were significant differences in coefficients for the military model and the civilian model. There were no significant differences between the groups.
this statement. In addition, the majority of both military members and civilians did not have an adult household member sent to jail or prison since they were 10 years old, with 86.3% of military members and 83.4% of civilians not having this experience. Table 3.1 continues to illustrate how military members and civilians are similar and the p-values show that there are no mean differences between groups, with the exception of crime.

Table 3.1 shows that there is a statistically significant relationship between military status and crime (p < .05). That is, there is a statistically significant difference between military members and civilians with regards to committing crime. Although the majority of the sample, both military members and civilians, have not committed a crime since 18 years old or after joining the military, there appears to be a significant difference between the two groups elsewhere. Examining the distribution of proportions in Table 3.1 shows that in some instances civilians commit a greater proportion of crime and in other instances military members commit more crime. Because the p-value is significant, there is a mean difference in crime between military members and civilians. Crime was not used as an observed covariate with propensity score matching, therefore the relationship on crime by military status can be assessed. The process of matching was to create samples that are as close as possible between military members and civilians. These variables still may vary within groups, as some military members may be higher or lower on some compared to civilians, but this allows for examination of the variation in the variables as predictors of crime.
Table 3.1 Descriptive Statistics of Study Variables

<table>
<thead>
<tr>
<th>Static Factors</th>
<th>All (N = 640)</th>
<th>Military (n = 320)</th>
<th>Civilian (n = 320)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
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<tr>
<td>Female</td>
<td>22.8% (n = 146)</td>
<td>23.1% (n = 74)</td>
<td>22.5% (n = 72)</td>
<td>.851</td>
</tr>
<tr>
<td>Male (Ref.)</td>
<td>77.2% (n = 494)</td>
<td>76.9% (n = 246)</td>
<td>77.5% (n = 248)</td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
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<tr>
<td>Black</td>
<td>37.2% (n = 238)</td>
<td>38.4% (n = 123)</td>
<td>35.9% (n = 115)</td>
<td>.514</td>
</tr>
<tr>
<td>Non-Black (Ref.)</td>
<td>62.8% (n = 402)</td>
<td>61.6% (n = 197)</td>
<td>64.1% (n = 205)</td>
<td></td>
</tr>
<tr>
<td><strong>Age (18 – 42) (mean)</strong></td>
<td>29.66 (SD = 4.734)</td>
<td>29.60 (SD = 4.536)</td>
<td>29.71 (SD = 4.931)</td>
<td>.764</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married (Ref.)</td>
<td>43.8% (n = 280)</td>
<td>43.8% (n = 140)</td>
<td>43.8% (n = 140)</td>
<td>1.000</td>
</tr>
<tr>
<td>Married</td>
<td>32.0% (n = 205)</td>
<td>33.1% (n = 106)</td>
<td>30.9% (n = 99)</td>
<td>.554</td>
</tr>
<tr>
<td>Separated, Divorced, Widowed</td>
<td>24.2% (n = 155)</td>
<td>23.1% (n = 74)</td>
<td>25.3% (n = 81)</td>
<td>.519</td>
</tr>
<tr>
<td><strong>Life With No Danger In It Would Be Too Dull For Me (16-17)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Disagree</td>
<td>26.7% (n = 171)</td>
<td>26.9% (n = 86)</td>
<td>26.6% (n = 85)</td>
<td>.929</td>
</tr>
<tr>
<td>Agree (Ref.)</td>
<td>73.3% (n = 469)</td>
<td>73.1% (n = 234)</td>
<td>73.4% (n = 235)</td>
<td></td>
</tr>
<tr>
<td><strong>Child Has Trouble Getting Along With Other Children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not True</td>
<td>78.0% (n = 499)</td>
<td>75.3% (n = 241)</td>
<td>80.6% (n = 258)</td>
<td>.405</td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>22.0% (n = 141)</td>
<td>24.7% (n = 79)</td>
<td>19.4% (n = 62)</td>
<td></td>
</tr>
<tr>
<td><strong>Child Has Strong Temper and Loses It Easily</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not True</td>
<td>51.2% (n = 328)</td>
<td>50.0% (n = 160)</td>
<td>52.5% (n = 168)</td>
<td>.528</td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>48.8% (n = 312)</td>
<td>50.0% (n = 160)</td>
<td>47.5% (n = 152)</td>
<td></td>
</tr>
<tr>
<td><strong>Adult Household Member Sent to Jail/Prison Since R Was 10</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>84.8% (n = 543)</td>
<td>86.3% (n = 276)</td>
<td>83.4% (n = 267)</td>
<td>.322</td>
</tr>
<tr>
<td>Yes (Ref.)</td>
<td>15.2% (n = 97)</td>
<td>13.8% (n = 44)</td>
<td>16.6% (n = 53)</td>
<td>.300</td>
</tr>
<tr>
<td><strong>Young Crime</strong></td>
<td></td>
<td></td>
<td></td>
<td>.032 (*)</td>
</tr>
<tr>
<td>0</td>
<td>43.1% (n = 276)</td>
<td>40.9% (n = 131)</td>
<td>45.3% (n = 145)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>22.2% (n = 142)</td>
<td>23.4% (n = 75)</td>
<td>20.9% (n = 67)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>16.1% (n = 103)</td>
<td>16.9% (n = 54)</td>
<td>15.3% (n = 49)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>8.6% (n = 55)</td>
<td>6.9% (n = 22)</td>
<td>10.3% (n = 33)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5.5% (n = 35)</td>
<td>6.6% (n = 21)</td>
<td>4.4% (n = 14)</td>
<td></td>
</tr>
<tr>
<td>&gt; = 5</td>
<td>4.5% (n = 29)</td>
<td>5.3% (n = 17)</td>
<td>3.8% (n = 12)</td>
<td></td>
</tr>
<tr>
<td><strong>Crime</strong></td>
<td></td>
<td></td>
<td></td>
<td>.032 (*)</td>
</tr>
<tr>
<td>.00</td>
<td>62.7% (n = 401)</td>
<td>70.3% (n = 225)</td>
<td>55.0% (n = 176)</td>
<td></td>
</tr>
<tr>
<td>.04</td>
<td>13.5% (n = 86)</td>
<td>8.4% (n = 27)</td>
<td>18.4% (n = 59)</td>
<td></td>
</tr>
<tr>
<td>.08</td>
<td>11.3% (n = 72)</td>
<td>9.4% (n = 30)</td>
<td>13.1% (n = 42)</td>
<td></td>
</tr>
<tr>
<td>.12</td>
<td>3.8% (n = 24)</td>
<td>4.4% (n = 14)</td>
<td>3.1% (n = 10)</td>
<td></td>
</tr>
<tr>
<td>.16</td>
<td>3.6% (n = 23)</td>
<td>1.9% (n = 6)</td>
<td>5.3% (n = 17)</td>
<td></td>
</tr>
<tr>
<td>&gt; = .20</td>
<td>5.3% (n = 34)</td>
<td>5.6% (n = 18)</td>
<td>5.0% (n = 16)</td>
<td></td>
</tr>
</tbody>
</table>

Significance levels are reported for group differences between the experimental and comparison groups.

*p < .05; **p < .01; ***p < .001
In order to examine the relationship between military status and crime further, Table 3.2 shows an independent samples t-test for these two variables. In addition, to determine the impact of military on crime, Cohen’s d was used to measure effect size (Cohen 1992). As is shown in Table 3.2, there is a statistically significant relationship between military status and crime (p < .05). However, the effect size is small (d = .025) (Cohen 1992). This means that there is a .025 standard deviation of a difference between the two groups. Civilians commit .025 standard deviations more crime compared to military members. Therefore, even though there is a statistically significant relationship between military status and crime, the actual effect size of being in the military versus a civilian and committing crime is quite small.

Table 3.2 Independent Samples T-Test for Military Status and Crime

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>P-Value</th>
<th>Mean Diff.</th>
<th>95% C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian</td>
<td>320</td>
<td>.0401</td>
<td>.05784</td>
<td></td>
<td></td>
<td>.00974</td>
<td>.00087</td>
</tr>
<tr>
<td>Military</td>
<td>320</td>
<td>.0304</td>
<td>.05641</td>
<td>2.155</td>
<td>.032 (*)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

OLS Model: Full Sample

Table 3.3 shows the OLS regression of military status on crime, controlling for the other predictors. Shown in the Table are the unstandardized (B) and standardized (β) coefficients. The r-square for the model is .112, indicating that 11.2% of the variation in the proportion of crime committed is explained by the predictors in the model. There is a statistically significant relationship between military status and crime (B = -.010, p < .05). Military members commit .010 fewer crimes with each increase in proportion of crimes committed after joining the military compared to civilians who committed crimes as adults, controlling for the other predictors in the model.
There is also a statistically significant relationship between sex and crime ($B = .013, p < .05$). Males commit .013 more crimes with each increase in proportion of crimes committed after joining the military or as adults compared to females, controlling for the other predictors in the model. In addition, there is also a statistically significant relationship between being married and crime ($B = -.011, p < .05$). Individuals who are married commit .011 fewer crimes with each increase in proportion of crimes committed after joining the military or as adults compared to individuals who never married, controlling for the other predictors in the model. There is also a statistically significant relationship with lifedull and crime ($B = .017, p < .01$). Thus, individuals who agreed that life would be dull with no danger commit .017 more crimes with each increase in proportion of crimes committed after joining the military or as adults compared to individuals who disagreed with this assessment, controlling for the other predictors in the model. Table 3.3 also shows that there is a statistically significant relationship with adult jail/prison and crime ($B = .021, p < .01$). Individuals who had an adult household member sent to jail or prison since they were 10 years old commit .021 more crimes with each increase in proportion of crimes committed after joining the military or as adults compared to individuals who did not have this experience, controlling for the other predictors in the model.

Lastly, there is a statistically significant relationship with young crime and crime ($B = .007, p < .001$). For every increase in young crimes committed, each proportion of crimes committed after joining the military or as an adult increases by .007, controlling for the other predictors in the model. In addition, committing crime as an adolescent has the strongest effect on the proportion of committing crime either after joining the military
or as an adult ($\beta = .189$).

**OLS Model: Military Sample**

As military status was significant in the full sample, separate regressions were conducted to test whether similar variables predicted crime for civilians and military personnel. Table 3.3 also shows the OLS regression on crime for the military sample. The $r$-squared is .110, indicating that 11% of the variation in the proportion of crime committed is explained by the predictors in the model. Very few of the variables are significant. However, one important variable is having an adult household member sent to jail or prison since the individual was 10 years old. There is a statistically significant relationship with adult jail/prison and crime ($B = .027, p < .01$). Military members who had an adult household member sent to jail or prison since they were 10 years old commit .027 more crimes with each increase in proportion of crimes committed after joining the military compared to military members who did not have this experience, controlling for the other predictors in the model. A second important variable is young crime as there is a statistically significant relationship with young crime and crime ($B = .008, p < .001$). For every increase in young crimes committed, each proportion of crimes committed after joining the military increases by .008, controlling for the other predictors in the model. When comparing the standardized coefficients, a pattern of committing crime as an adolescent has the strongest effect on the proportion of committing crime after joining the military ($\beta = .218$).

**OLS Model: Civilian Sample**

Lastly, Table 3.3 shows the OLS regression on crime for the civilian sample. The $r$-squared is .115, indicating that 11.5% of the variation in the proportion of crime
committed is explained by the predictors in the model. There is a statistically significant relationship with lifedull and crime ($B = .025, p < .01$). Civilians who agreed that life would be dull with no danger in it at 16 or 17 years old commit .025 more crimes with each increase in proportion of crimes committed as adults compared to civilians who disagreed with this assessment, controlling for the other predictors in the model. Table 3.3 also shows that there is a statistically significant relationship with adult jail/prison and crime ($B = .017, p < .05$). Civilians who had an adult household member sent to jail or prison since they were 10 years old commit .017 more crimes with each increase in proportion of crimes committed as adults compared to civilians who did not have this experience, controlling for the other predictors in the model. Finally, there is a statistically significant relationship with young crime and crime ($B = .007, p < .01$). For every increase in young crimes committed, each proportion of crimes committed as an adult increases by .007, controlling for the other predictors in the model. Unlike the full model and the military model, agreeing that life would be dull without any danger in it at ages 16 or 17 has the strongest effect on the proportion of committing crime as an adult ($\beta = .189$).
Table 3.3 Regression Coefficients Predicting the Proportion of Crimes Committed

<table>
<thead>
<tr>
<th></th>
<th>Full Sample (N = 640)</th>
<th>Military (N = 320)</th>
<th>Civilian (N = 320)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>β</td>
<td>B (SE)</td>
</tr>
<tr>
<td>Military Male</td>
<td>-.010 (.004)*</td>
<td>-.083</td>
<td>.014 (.008)</td>
</tr>
<tr>
<td>Male</td>
<td>.013 (.005)*</td>
<td>.097</td>
<td>.004 (.007)</td>
</tr>
<tr>
<td>Non-Black</td>
<td>.002 (.005)</td>
<td>.018</td>
<td>-.001 (.001)</td>
</tr>
<tr>
<td>Age</td>
<td>-.001 (.001)</td>
<td>-.051</td>
<td>-.012 (.007)</td>
</tr>
<tr>
<td>Married</td>
<td>-.011 (.005)*</td>
<td>-.094</td>
<td>.004 (.006)</td>
</tr>
<tr>
<td>Separated, Widowed, Divorced</td>
<td>.004 (.006)</td>
<td>.027</td>
<td>.000 (.008)</td>
</tr>
<tr>
<td>Livedull</td>
<td>.017 (.005)**</td>
<td>.130</td>
<td>.008 (.007)</td>
</tr>
<tr>
<td>Along</td>
<td>-.002 (.006)</td>
<td>-.012</td>
<td>-.001 (.008)</td>
</tr>
<tr>
<td>Temper</td>
<td>.000 (.004)</td>
<td>.004</td>
<td>-9.668E-5 (.007)</td>
</tr>
<tr>
<td>Adult Jail/Prison</td>
<td>.021 (.006)**</td>
<td>.131</td>
<td>.027 (.009)**</td>
</tr>
<tr>
<td>Young Crime</td>
<td>.007 (.002)**</td>
<td>.189</td>
<td>.008 (.002)***</td>
</tr>
<tr>
<td>Constant</td>
<td>.025 (.016)</td>
<td>.035</td>
<td>.055 (.024)</td>
</tr>
<tr>
<td>R. Sq.</td>
<td>.112</td>
<td>.110</td>
<td>.110</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

DISCUSSION

The purpose of this study was to examine life course theory and crime. In the model with the full sample, the majority of the variables were found to be significant, indicating that patterns that are established in childhood and adolescence set a trajectory for later crime, thus answering the first research question: childhood predictors of crime set a trajectory for later crime. These findings support the life course theory in several ways. For example, being risky or committing crime as an adolescent can set a pathway that leads to later crime, showing how early patterns and behaviors influence later patterns and behaviors. Parental deviance can also serve as a pathway for individuals to later crime as well. An individual who grew up in a household where there was an adult household member sent to jail or prison are likely to have had a weak attachment to that individual. This finding is an example of how control theory is an important aspect of life course theory and crime – weak parental attachments set a trajectory of crime (Nagin et al. 2001; Sampson and Laub 1993).
In addition, this study specifically focused on the impact of military on crime. As was shown, there was a significant relationship between crime and military status with military members committing fewer crimes than civilians. Therefore, the second research question was answered: military service is related to later crime with military service decreasing later crime. Unlike other studies, this study shows that this relationship exists not just because of who joins the military. Because the data came from a matched sample of military members and civilians, all the predictors were the same for both groups except for military status and the impact of military was therefore able to be assessed. This study essentially controlled for who joins the military by using a matched sample of individuals who did not join the military. Because military members committed fewer crimes than civilians, this study shows that it is the military that matters, not a pre-existing variable that was unaccounted for. In addition, the matched sample controlled for individual trajectories of crime yet being in the military still decreased crime. This is important because regardless of the stresses or other problems that being in the military might produce, it also serves as a transition event that changes the trajectory of crime by decreasing it.

Military members may commit fewer crime compared to a similar group of civilians because of the military serving as a stabilizing influence. Connecting back to the literature on the age-crime curve, the military keeps individuals who are in the high-crime ages in a tightly controlled environment. If military members act out while they are serving, they are likely punished internally rather than being arrested by police or criminally convicted. Another way to explain military members committing fewer crimes than civilians is to consider the literature on catharsis and violent video games (Ferguson,
Olson, Kutner, and Warner 2014). There has been much debate about whether playing violent video games influences one’s aggression and delinquency. However, research has shown that playing violent video games is not clearly linked to aggression or delinquency. Rather, playing violent video games may serve as outlet for aggressive individuals (Ferguson et al. 2014). This is potentially relevant in the current study because the military may serve as outlet for aggression for already aggressive individuals. Moreover, previous research has shown that individuals who like to take risks and crave excitement are likely to join the military in the first place (Bachman et al. 2000; Duffy 1988) and that these individuals are likely to commit crime. Therefore, the military may serve as an outlet for taking risks which may have an effect on committing less crime.

When separate analyses were conducted on the military and civilian samples there was a great deal of consistency. In both models, having a criminal role model and adolescent crime were significant. In addition, having leaned towards risk-taking in adolescence was also shown to be important for later crime for civilians. These findings correspond to the discussion by Sampson and Laub (1993) with childhood predictors of crime, like parental deviance, being linked to later crime. In addition, individuals who engaged in young crime committed more crime later in life as well. Individuals who were risky in adolescence committed more crime as adults, but this only applied to the civilian sample, not the military sample. Moreover, young crime had the strongest effect on crime for the full sample and military sample but lifedull had the strongest effect on crime for the civilian sample. Civilians who were risky in adolescence committed more crime as adults compared to civilians who were not risky. This is an interesting finding because civilians and military members were matched on the same predictors. Therefore, these
two groups were very much alike. Based on the previous discussion of catharsis, this finding shows how that argument is further supported. Civilians do not have the military outlet to relieve criminal tendencies and this could be why this predictor is significant in the civilian sample but not the military sample. These additional analyses allowed for closer examination of the particular groups and how military members and civilians differ with regards to important predictors of crime.

As was clear from this study, young crime was significant in each model and had the strongest effect on crime for the full sample and the military sample. This means that the more delinquent one was during adolescence, the more crime they committed as adults or after joining the military. This finding goes along with previous research as early delinquent behavior leads to later life crime (Bernburg and Krohn 2003; Huesmann et al. 1984; Laub et al. 2001; Sampson and Laub 1993; Wiley et al. 2013). More specifically, this finding corresponds to the literature of delinquency in childhood or adolescence being linked to crime (Huesmann et al. 1984; Laub et al. 2001), regardless of military status. Thus, individuals who are delinquent between the ages of 10-17 are on a pathway to crime, regardless of military status. However, military membership helps to decrease one’s crime trajectory.

Limitations

There are a few limitations with the current study. First, because the outcome variable consists of items related to violent offending, the dependent variable could have been logged to obtain a more normal distribution. In addition, because violent offending is a rare event, logistic regression could have been used in order to examine the odds of violent offending based on military status. As Piquero (2000) discussed, when examining
violent offending, skewness is likely because a small percentage of individuals are responsible for a large amount of violent crime. A second limitation deals with the relatively small sample size. However, this study contributes to the research by using a sample of both military and civilians in the general population. Unlike previous research which has been shown to focus on prison inmates, this study consists of individuals from the general population and because of this, there is not a large number of military members. A final limitation is that this study does not provide much information on the actual experience of the military and why it may have an impact on offending. Rather, findings are explained by speculation based on some of the controls that are significant. Therefore, this study is able to tell which factors are important but not necessarily why or how the military matters.

Future Research

While this study provides some insight into the relationship between military service and crime, there are several areas of interest when it comes to the impact of the military on individuals beyond crime. Future research can focus on many other aspects that the literature has shown to be related to life outcomes after military service. This includes better understanding the relationship between military service and PTSD, alcohol and substance use, and interpersonal relationships (i.e., marriages). In addition, much of the current research focusing on the military examines sexual assault within the military (Sadler, Mengeling, Booth, O’Shea, and Tomer 2017) and suicide upon returning home from service (Bryan, Cerel, and Bryan 2017; Hom, Stanley, Gutierrez, and Joiner Jr. 2017; O’Keefe and Reger 2017; Rosellini et al. 2017). However, nearly every study focuses only on military members and thus is unable to determine whether this group
differs from the general population in these experiences and if being in the military makes individuals an at-risk group for certain life outcomes. Creating a matched sample of individuals by groups is a beneficial methodological technique for exploring life course theory and life outcomes. Therefore, future research should focus on several aspects of military life and use a matched sample to explore the impact of the military on life outcomes.

CONCLUSION

The goal of this study was to use life course theory to examine crime. This study has found that childhood patterns do set a trajectory of crime. In addition, military members commit less crime compared to civilians. Finally, this study has shown that the military is a transition event that affects the trajectory of crime by decreasing it. The biggest takeaway from this study is that being in the military decreases crime and this is found in spite of having two samples that are demographically, cognitively, and socially similar. There is something about the military that impacts a trajectory of crime. Regardless of the problems that may result from being in military, there are also some benefits with military members committing fewer crimes than civilians.

Although previous research and life course theory argues that childhood factors of deviance are important predictors of crime, it was only partially shown in this study. For example, Sampson and Laub (1993) argue that childhood misbehavior predictors, like temper tantrums, will direct a crime trajectory regardless of military status. Previous childhood misbehavior factors were controlled in this study and were not important predictors to the life course. However, life course theory is about early patterns and behaviors predicting later life outcomes. Although those childhood misbehavior effects
were not important predictors of crime, engaging in crime in adolescence was the most important predictor of crime. Those who were delinquent in adolescence were likely to remain on that trajectory into adulthood, regardless of military status. Life course theory is the appropriate theory to use when examining how the military affects life outcomes because it has been shown to be an important transition event that affects one’s trajectory. What needs to be examined further is how specific experiences within the military may affect one’s crime trajectory and to examine other life outcomes and differences between military members and civilians.
CHAPTER IV

DO MILITARY EXPERIENCES VARY BY RACE? THE IMPACT OF LIFE COURSE AND MILITARY ON CRIME

Abstract

Though the military has long been a popular topic to researchers, race is often an element that is overlooked (Craig and Connell 2015). This study uses life course theory to examine how the military experience varies by race and to examine the impact of positive and negative experiences on committing crime after joining the military. Data for this study comes from the National Longitudinal Survey of Youth, Child and Young Adult sample (1986-2014) and has a total sample size of 331 Black and Non-Black military members (N = 331). Findings show that military members commit crime after joining the military if they have a history of deviance like committing crime in adolescence. This finding corresponds to life course theory as early life patterns predict later life behaviors and outcomes. This study also shows that in addition to race, positive and negative experiences within the military do not set or effect a trajectory of crime. Implications for life course theory and the military are discussed.

Keywords: military, race, life course, combat, crime
Being in the military results in both positive and negative life outcomes. A substantial literature has examined a variety of these, including mental health (Elder Jr. and Clipp 1988; Lane, Hourani, Bray, and Williams 2012; Lyk-Jensen, Weatherall, and Jepsen 2016; Rosellini et al. 2015), and behavioral, such as alcohol use (Adams, Nikitin, Wooten, Williams, and Larson 2016; Cucciare et al. 2015; Fink et al. 2017), marriage (Bouffard 2005; MacLean and Elder Jr. 2007), and crime (Glueck and Glueck 1950; Rand 1987; Teachman and Tedrow 2014). Some of the effects are clear, such as military personnel having very high rates of posttraumatic stress disorder (PTSD) (Adams et al. 2016; Gansel 2013; Giardino 2009; Killgore et al. 2008; Kim, Thomas, Wilk, Castro, and Hoge 2010; Köbach Schaal, and Elbert 2015; MacManus et al. 2013) and being at risk for suicide (Bryan, Cerel, and Bryan 2017; Hom, Stanley, Gutierrez, and Joiner Jr. 2017; O’Keefe and Reger 2017; Rosellini et al. 2017). The connection between military service and other outcomes, such as criminal offending, is less clear.

This study adds to the literature by using a life course theoretical perspective to examine the connection between military experience and crime. Specifically, I examine how the experiences that occur within the military may serve as turning points that influence criminal offending trajectories. A second contribution of this study is to examine the relative impacts of military experiences on crime by race. In spite of the robust literature on the military, one aspect that is largely overlooked in the research is how race plays a role in military experiences and later life outcomes (Craig and Connell 2015).
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Military Service and Race

According to the most recent statistics, there is an uneven distribution of racial groups in the military. Of active duty enlisted members and officers, 77% are White and only 9% are Black. In addition, of the reserves and guards, 73.9% are White and only 16.5% are Black (Department of Defense 2018). However, research has shown that a higher rate of Black individuals actually enlist in the military compared to White individuals (Bachman, Segal, Freedman-Doan, and O’Malley 2000; Elder Jr., Wang, Spence, Adkins, and Brown 2010; Jackson, Thoemmes, Jonkmann, Lüdtke, and Trautwein 2012; Johnson and Kaplan 1991). One explanation is because the military offers incentives, like education, which is otherwise less accessible to Blacks. Therefore, the military may serve as a means to gain social capital where resources that were once unavailable for some groups are now within reach (Duffy 1988; Elder Jr. and Hareven 1993; Mankowski, Tower, Brandt, and Mattocks 2015; McDonald and Elder Jr. 2006; Woodruff 2017).

The military has a history of offering such benefits. Although most Black men did not have any formal education prior to serving in the 1860s, the military provided them with tools to learn to read and write, something most did not know how to do (Berlin, Reidy, and Rowland 1982). Like their White counterparts, Black men valued this education because it allowed them to be able to communicate with their loved ones (Berlin et al. 1982). Even though the military has greatly evolved over time, it still provides incentives to encourage enlisting. For example, the GI Bill offered housing, unemployment insurance, and educational assistance (Wang, Elder Jr., and Spence 2012).
These benefits not only are attractive to racial minorities but also to women. Studies show that over the past 30 years, more and more women have been enlisting in the military (Mankowski et al. 2015; Melin 2016). Mankowski et al. (2015) focused on the motivations for women joining the military and found that the military provides women with stable careers, thus offering incentive to join. Moreover, for the past 30 years, a vast amount of Black women have been joining the military (Melin 2016). Black women constitute about 30% of the population of women that serve in the military – more than double their representation in the general population (Melin 2016).

It could be argued that women, and more particularly Nonwhite women, are enlisting in the military to gain a means of social capital and to better their life chances (Mankowski et al. 2015; Melin 2016). Indeed, Melin (2016) found that Black women have been enlisting in the military due to policy changes, specifically dealing with welfare reform and due to economic recession. These changes hit particularly hard on groups of women who have few options for employment. Thus, people may join the military as a means to better their lives, as Melin (2016) found.

In addition to possible differences in why people join the military, the experience of being in service may also have different impacts for groups. Researchers have focused on life outcomes of the military by race. Craig and Connell (2015) found Nonwhite military members experience a greater sense of respect from their peers once they return home from service compared to Nonwhite civilians. Moreover, Rackin (2017) found that Black military members have higher self-esteem after serving compared to White military members. It is argued that this might be due to the military serving as an institution where there is less racial discrimination (Rackin 2017) and a place that offers resources and
opportunities (Rackin 2017; Wang et al. 2012).

One reason for the differences in outcomes is possibly because experiences within the military differ by race (Craig and Connell 2015). Depending on an individual’s race, they will likely have different outcomes from serving in the military and could potentially have different reasons for joining the military in the first place (Bouffard 2005; Craig and Connell 2015; Rohlfis 2010). While Craig and Connell (2015) acknowledge that deviance is higher for Nonwhite individuals regardless of military experience, they also argue that contextual transactions may vary by one’s military experience and by one’s race. “For Whites, what happens while they are in the military matters, whereas for Nonwhites, being a member of the military has a transformative effect. Context appears to matter” (Craig and Connell 2015:344). Due to the importance of context, it is appropriate to turn to life course theory to study how contextual aspects of the military experience affects later life outcomes.

*Life Course Theory*

The focal point of life course theory is to examine how early patterns of behavior affect later life behaviors and outcomes (Elder Jr. 1985; Sampson and Laub 1992/1993). Life course theory examines how childhood or adolescent patterns of behavior lead to patterns, behaviors, and outcomes in adulthood. According to life course theory, some individuals are predisposed to certain life paths at a very early age (Elder Jr. 1985; Sampson and Laub 1992/1993). Sex, race, and class are early factors that influence pathways for individuals (Chevan and Sutton 1985; Elder Jr. 1985; Glass, Mclanahan, and Sørensen 1985; Hofferth 1985; Sampson and Laub 1992/1993). For example, it is argued that within the life course race is important because it influences several life
patterns and experiences. Race could also be indirectly linked to class, which also influences these patterns. More minorities are part of a lower socioeconomic status (SES) compared to White individuals and minorities have fewer resources available to them and this could affect their life trajectory. Children from a higher social class will have different opportunities available to them compared to children from a lower social class. This, in turn, affects how they proceed in life and ultimately affects their experiences as adults.

Life course theorists argue that individual’s lives are made up of transitions, turning points, and trajectories (Elder Jr. 1985; Sampson and Laub 1992/1993). Trajectories are the long-term paths that individuals are on and transitions are shorter life events that may affect one’s trajectory. Moreover, transitions are embedded within trajectories (Elder Jr. 1985; Laub, Sampson, and Sweeten 2008). Social institutions like marriage, employment, and military are transitions that influence one’s trajectory (Elder Jr. 1985; Laub et al. 2008). These social institutions can also serve as a turning point where the trajectory of one’s life shifts or is redirected due to the transition (Sampson and Laub 1992/1993). Transitions and turning points can be very similar because, “All transitions are potential turning points” (Hareven and Masaoka 1988:274). For example, the military is an example of a transition along the career trajectory, helping to move a person along a specific career path. But if one suffers from a serious injury, the injury would be a trigger event, or a turning point, that redirects their life trajectory.

When using life course to study outcomes, it is important to take social context and the social structure into account when examining an individual’s life history (Sampson and Laub 1992/1993). In other words, it is important to examine how patterns
and behaviors might have been passed down from parents to children, and to account for the social events of the time (i.e., if an individual grew up during an economic recession or during a time of war) (Sampson and Laub 1992/1993). It is also important to examine the age of the individual and the social context surrounding what is expected of them (Sampson and Laub 1992/1993). Life course theory is an age-graded theory in which the specific age of when one experiences transitions, turning points, or trajectories will likely affect their later life outcomes (Elder Jr. 1985; Hogan 1978; Sampson and Laub 1992/1993).

This importance of time, or when events occur, such as getting a first job, getting married, or joining the military, is discussed by Hogan (1978). Life course theory acknowledges that the specific age one engages in acts within their life course influences their later life outcomes. Hogan (1978) argues that the appropriate ordering of events would be that an individual finishes school or completes military service, gets a decent paying job, and then marries. When the sequence of these events is unordered, the individual will experience disruption. That is, if an individual marries before finishing school or completing military service, their life trajectory would be different had they finished school and/or completed military service and found a job prior to marriage. Had they sequenced those events differently, the individual would have a more positive life trajectory. Hogan (1978) argues that the time element of higher education and military service is crucial to a positive life trajectory.

Life Course, Combat, Race, and Crime

An important predictor of life outcomes and military service is the age of the individual. However, research has shown that age is also important in assessing the risk
of engaging in crime, with adolescence and early adulthood being the time of peak crime and then declining after these stages, known as the age-crime curve (Hirschi and Gottfredson 1983; Piquero, Farrington, and Blumstein 2003; Stolzenberg and D’Alessio 2008). Related to this notion, Munson and Miller (1921) argued that because individuals can enlist in the military at relatively young ages, some individuals may not be fully matured and may still resort to criminal behavior regardless of being in the military. However, researchers have found that the younger an individual is when they first joined the military, the better their life outcomes will be (Elder Jr. 1986; Elder Jr., Gimbel, and Ivie 1991; McDonald and Elder Jr. 2006; Sampson and Laub 1996). For example, although Elder Jr. (1986) did not specifically test crime, he found that the younger an individual is when they join the military, the better their marriage will be. Moreover, Elder Jr., Shanahan, and Clipp (1994) found that the older an individual is when they join the military, the more disruption they will face later in life. This corresponds to Hogan’s (1978) argument of the importance of time-order and life events. Elder Jr. et al. (1994) found that people who join the military at a later age are more likely to have health problems later in life. Thus, late military enlistment leads these individuals down a negative health-related trajectory (Elder Jr. et al. 1994).

Also shown in studies to be a turning point for negative trajectories is serving in combat zones, specifically in Iraq or Afghanistan. Researchers have recently been interested in studying the effects of serving in the Iraq War and the War in Afghanistan (Adams et al. 2016; Cucciare et al. 2015; Giardino 2009; Kwan, Jones, Hull, Wessely, Fear, and MacManus 2017; Lyk-Jensen et al. 2016; MacManus et al. 2013; Murphy and Sharp 2011; Sanders et al. 2005; Tribble et al. 2016). Iraq and Afghanistan are popular
areas of focus because they are dangerous deployment locations where one is likely to be exposed to combat (MacManus et al. 2013). Furthermore, Tribble et al. (2016) found that injuries sustained in Afghanistan are more severe than combat in other places.

Several researchers have examined how serving in Iraq or Afghanistan impacts later life outcomes in a variety of ways. For instance, Cucciare et al. (2015) studied binge drinking among servicewomen who served in Iraq or Afghanistan and found that those who served in these locations binge drank more compared to servicewomen who were not deployed to these areas. In addition, Kwan et al. (2017) and MacManus et al. (2013) studied individuals in the UK that were deployed in Iraq and Afghanistan and found that individuals that were returning home from these places were at greater risk of violent offending compared to individuals who were returning home from other deployment locations. The experience of combat is particularly important, with violent offending being related to the military but more strongly for those exposed to combat (Kwan et al. 2017; MacManus et al. 2013). Interestingly, Kwan et al. (2017) found that reservists, not active duty members, who served in either Iraq or Afghanistan were at greater risk of being linked to violence later in life.

Further research has shown that there is a relationship between military service and committing acts of violence (Bronson, Carson, Noonan, and Berzofsky 2015; Van Dyke and Orrick 2017). Bronson et al. (2015) studied prison inmates in the United States from 2011-2012 and found that veterans were more likely in jail or prison for committing a violent offense compared to civilians but this was not the case for all racial groups. What they found was that for Nonwhites, veterans were less likely to be in jail or prison than civilians. This finding suggests that for Whites, veterans were more likely to be in
jail or prison than civilians.

Bouffard (2005) also found that with regards to violent offending, White military members are more likely to engage in violent offending compared to Black military members. Bronson et al. (2015) also found that the veterans that made up the jail and prison populations were not all exposed to combat while they were serving in the military with 25% of veterans in prison and 31% of veterans in jail being exposed to combat while they served. It appears that depending on one’s race, they may experience the military differently and be more prone to different life outcomes. Furthermore, with these examples, it appears that White military members are more prone to violence compared to Nonwhite military members and that combat, at least in these examples, does not appear to be an important predictor of crime.

Although there is evidence to suggest that Nonwhite military members are less likely to engage in later crime, there is some evidence to the contrary as well. When discussing desistance, Rand (1987) found that White military members were more likely to desist from crime compared to Black military members. However, when studying a group of offenders and the number of offenses committed by race, Rand (1987) found evidence to the contrary. That is, 60% of White offenders were in the military, and they accounted for 60% of the offenses. Forty-eight percent of Nonwhite offenders were in the military and they only accounted for 29% of the offenses. Although there is evidence suggesting that Whites desist more from crime after serving, as previously mentioned, when examining a group of offenders in general, regardless of committing crime before or after military, more White military members account for more of the criminal offenses than Nonwhite military members (Rand 1987).
Craig and Connell (2015) found that for White military members, what happens to them is more influential on their future behaviors. Thus, based on what Craig and Connell (2015) found, it could be argued that if a White military member were exposed to combat, they might be more likely to commit criminal violence in the future. However, findings in the literature are inconsistent. Rohlfs (2010) found that Black men who experienced combat in the military were more likely to commit violent acts later in life. For White men, being exposed to combat had a positive effect on later activities but only for certain types of crimes, not violent ones (Rohlfs 2010). Contrarily, Bouffard (2005) found that Black individuals who serve in the military are less likely to engage in violent behavior later in life compared to White military members and to other Black individuals who did not serve in the military. In addition, researchers have found that people who come from a low SES (Bouffard 2005; Rosellini et al. 2016), are minorities (Bouffard 2005), and have a delinquent past (Bouffard 2005; Rosellini et al. 2016) are most likely to engage in violent behavior after serving in the military. Bouffard (2005) argues that there is a bridging hypothesis that the military serves for some individuals. That is, Bouffard (2005) suggests that this finding could be due to Black individuals entering the military to increase their opportunities but does not specifically measure this. Therefore, the bridging hypothesis can be compared to some individuals joining the military as a transition event to change their life trajectory.

Many researchers have used life course theory to discuss the military-crime relationship but oftentimes race is overlooked. The first portion of this study is largely descriptive to illustrate what the military sample looks like, but also examining the military experience and how it varies by race. It is clear from the research on military
experience and how it links to criminal behavior that the outcomes vary by race. However, how those experiences vary by race is unclear and inconsistent. This study seeks to overcome some of these inconsistencies using life course theory to examine how the military serves as a transition event that affects one’s crime trajectory and whether the impact of military experiences on trajectories varies by race. Also, this study seeks to determine the impact of turning points within the military on committing crime and whether race is an important predictor to this relationship. Due to the range of outcomes in past work, there first needs to be a better understanding of what experiences matter to crime for military members and how this varies by race. Therefore, this study is largely exploratory with two specific hypotheses: (1) Having higher self-esteem after joining the military and positive experiences in the military like education will decrease a trajectory of crime. (2) Negative experiences in the military like serving in a combat zone and specifically serving in Iraq or Afghanistan will increase a crime trajectory.

DATA AND METHOD

Data for this study were generated from the National Longitudinal Survey of Youth, Child and Young Adult (NLSY-CYA) sample (1986-2014). This survey originally began in 1979 with the NLSY and consisted of individuals between the ages of 14-22. Individuals completed questionnaires regarding various aspects of their lives including family background, items assessing mental health, social relationships, and a wide range of behaviors related to education, careers, and deviance. These data are particularly useful for the current study because military personnel were oversampled in this original sample, making it possible to build an adequate military sample from publically accessible data. This oversample is important because it allowed researchers to conduct
comparative analyses between those who were in the military and those who were not. The NLSY-CYA started in 1986 and consists of the children to the women who were part of the original 1979 survey. The mothers complete questionnaires on parenting practices and child assessments and if their child is at least 10 years old, the child completes a supplemental questionnaire as well. Beginning in 1994, children of the original cohort aged 15 and older complete an additional questionnaire resembling the original survey from 1979. Individuals complete questionnaires every other year and there are currently 11 waves of data available.

This study uses data from the NLSY-CYA sample for the years 2000-2014 in order to account for a unique group of military personnel, those serving post September 11th. Thus, the sample consists of individuals who reported ever serving in the military between the years 2000 and 2014 (N = 331). The military variable indicated whether the respondent was in the military at the date of the interview. Originally, this military variable consisted of 0 = not in the military, 1 = in the active forces, and 2 = in the guards/reserves. Considering that only 331 individuals indicated being in either the active forces or in the guards/reserves between 2000-2014, I dichotomized this variable where 0 = not in the military and 1 = in the military. I limited the data to just the military sample for this study because the main purpose of is to examine military experience on crime and if race impacts this relationship.

**Measures**

Appendix E provides a full description of the variables in this study, including the original interview questions and how variables were originally coded and a description of how the variables were ultimately recoded. In addition, Appendix E also provides detail
on the specific years in which data were pulled. Below is a description of the variables used in the study.

**Dependent variable**

The dependent variable in this study is the proportion of crime committed after joining the military. This variable is made up of three self-report items indicating whether the respondent had engaged in any of the crimes in the past year. These crimes are whether the respondent had ever gotten into a physical fight at work or school (fight), if the respondent had ever hurt someone badly enough for them to see a doctor (hurt), and if the respondent had ever hit or seriously threatened to hit someone (hit). All three items are dichotomous, coded as 1 = yes and 0 = no. Because this study focuses on military members in the post September 11th era, data were pulled for the years 2000-2014. With the exception of the year 2000\(^1\), each wave of data contains three possible crimes. If an individual had joined the military in 2000 or earlier, they would have a total of 23 possible crimes committed while if an individual joined the military in 2013 or 2014, they would have a total of 3 possible crimes.

Hit, fight, and hurt were added together based on the year in which the individual joined the military to create a total crime variable. This was then divided by the total number of possible crimes and a proportion was generated. This proportion represents the amount of crime the individual engaged in after joining the military. This variable originally ranged from 0-.67 meaning that individuals committed no crime to up to 67% of crime. This variable was highly skewed towards zero due to the subject matter pertaining to violent crime (skewness statistic = 2.975). As Piquero (2000) discussed,

\(^1\) There was no item for hurt in the year 2000.
skewness is likely an issue when examining violent crime because a small group of people commit a lot of the violent crime represented. In order to improve some of the skewness, I truncated this variable to range between 0-.20 or more as less than 6% of the sample committed more than 20% of crimes. Although this variable was still skewed towards zero (skewness statistic = 1.793), the skewness was improved by 1.182 after it was truncated. Table 3.1 shows the distribution of crimes committed after joining the military.

**Independent and control variables**

The key independent variable in this study is race. Race is a dichotomous variable where zero is Black and one is Non-Black. The original race variable was obtained from the respondent’s mother when they were children and consisted of either Hispanic, Black, or Non-Black, Non-Hispanic. Although this shows that there are other races within the NLSY-CYA, Black and Non-Black are the only races included in this study due to the already small sample size and because there were not many individuals of different races who indicated their military status. In addition to the small sample size, Hispanics were combined with the Non-Black, Non-Hispanic group to make this a dichotomous variable because literature suggests that Whites and Hispanics have similar military experiences compared to other minorities like Blacks (Penk et al. 1989).

There are several control variables in the study. Because part of this study is largely exploratory to examine how military experience varies by race, there are many control variables. These variables consist of demographics, variables that have shown to be important predictors of crime, life course predictors, and predictors pertaining to military life. There are plenty of dichotomous variables like sex (1 = male, 0 = female)
and marital status. Marital status was coded into a dichotomous variable with never
married being the reference category. Other dichotomous variables where 1 = yes and 0 =
no are whether the respondent had an adult household member sent to jail or prison since
they were 10 years old, whether the respondent re-enlisted in the military, whether the
respondent ever used skills they learned in the military in their civilian job, whether the
respondent took school courses for credit while in the military (courses for credit),
whether the respondent ever worked or had been deployed in a combat zone (combat
zone), whether the country the respondent worked or was deployed in was Iraq or
Afghanistan (Iraq or Afghanistan), whether the respondent had emotional problem
behaviors after joining the military, and whether the respondent had violent behavior or a
temper after joining the military.

Additional dichotomous variables where 1 = true and 0 = not true consist of the
respondent’s mother’s assessment of what the respondent was like as a child. These
include whether the respondent had trouble getting along with other children at 13 or 14
years old and whether the respondent had a strong temper and lost it easily at 13 or 14
years old. Other dichotomous variables where 1 = agree and 0 = disagree are whether the
respondent thought life would be dull without any danger in it at ages 16 or 17, self-
esteeem at ages 16 or 17 (measured as, “On the whole, I am satisfied with myself”), and
self-esteem after joining the military (self-esteem after joining) which is also measured
as, “On the whole, I am satisfied with myself.” Two final dichotomous variables are how
satisfied the respondent is with the military where 1 = satisfied and 0 = not satisfied and
marital status after joining the military where 1 = married and 0 = never married,
separated, divorced, or widowed.
Additional control variables consist of the continuous variables of age (ranging from 18-39), total number of years in the military (ranging from 0-25 years), year the respondent joined the military, age in which the respondent joined the military (ranging from 18-30), military grade indicating their rank (ranging from E1-E7 with E7 indicating the highest rank in this study), the number of years of regular school the respondent completed or received credit for at the time of entering the military (ranging from a 12th grade education to 5th year of college), and young crime (ranging from 0-5).

Young crime is a variable that was created to examine life outcomes of individuals already set on a trajectory of crime when they were in adolescence, specifically between the ages of 10-17. This is a continuous variable that consists of 6 items: bullies, breaks, damage, hit, fight, and hurt. Each variable is dichotomous where 1 = true and 0 = not true for bullies and breaks, 1 = once or more and 0 = never for damage, and 1 = yes and 0 = no for hit, fight, and hurt. Bullies (child bullies or is cruel to others) and breaks (child breaks own or other’s things on purpose) were assessed by respondent’s mothers when the respondent between the ages of 10-13. Damage is a variable that was part of the child supplemental questionnaire where the respondent indicated how many times in the past year they had purposely damaged school property. Like bullies and breaks, damage was also assessed for when the respondent was 10-13 years old.

Hit, fight, and hurt were individual items where the respondent indicated if they ever engaged in any of these behaviors within the past year between the ages of 14-17 (Did you hit or seriously threaten to hit someone within the last year? Did you get into a physical fight at work or school in the last year? Did you hurt someone badly enough for them to see a doctor in the last year?). Bullies, breaks, damage, hit, fight, and hurt were
all added together and there were a total of 12 possible crimes individuals could have engaged in as adolescents. However, no respondent indicated more than 8 crimes, thus making the range for young crime between 0-8. Like the dependent variable, data for young crime was skewed towards zero (skewness statistic = 1.397) and less than 3% of cases indicated committing 6 or more crimes. Therefore, this variable was recoded to range between 0-5 or more crimes. Although the variable was still skewed (skewness statistic = 1.069) truncating this variable improved skewness by 0.328.

Variables that assess what the respondent was like after joining the military were manually created by combining the year they joined the military with the individual item. For instance, the NLSY-CYA has a dichotomous item of whether the respondent exhibited violent behavior within the past year. Using the variable for year the respondent joined the military, I was able to determine whether the respondent exhibited this behavior after joining the military. In addition, other military variables were manually created like total number of years in the military, age the respondent joined the military, and whether the respondent re-enlisted. Some of these variables were not directly in the NLSY-CYA but were created based on the presence of other variables. For instance, there is a variable about which year the respondent entered service or active duty, and this was how the variable for year the respondent joined the military was created. To determine the age the respondent joined the military, I subtracted the year for this variable with the respondent’s date of birth year. In addition, there is a variable that asks which year the respondent separated from the military. I used this variable and subtracted the variable for the year the respondent entered service or active duty to create the variable for total number of years in the military.
There were also instances where respondents indicated multiple years in which they entered service or active duty and where they indicated separating from the military. These individuals who had multiple responses were considered to have re-enlisted in the military and were marked as such. Additionally, in order to have an accurate measure of total number of years in the military and the year the respondent entered, if there were multiple years listed, I used the older year. For example, if a respondent indicated that they entered service in 1997 but that they also indicated that they entered service in 2002, they were marked for first entering service in 1997. In addition, they were also marked for having re-enlisted.

ANALYTIC STRATEGY

Using SPSS 25, I first divided the sample by race and ran frequencies on all variables of interest that both may serve as demographic influences on life trajectories and that relate more specifically to their military experiences. Then, I conducted independent samples t-tests for the variables to determine if there were any significant mean differences by race. After this, I conducted six ordinary least squares (OLS) regression models. The first was to assess the impact of race on crime without any additional control variables. The second was to assess the impact of race on crime with demographic controls (sex and marital status) and life course controls (age joined and young crime). The third was to assess the impact of race on crime with these same controls but with additional positive life course controls (courses for credit and self-esteem after joining).

The fourth model assesses the impact of race on crime with the same demographic and life course controls, but instead of positive experiences like courses for
credit and self-esteem after joining, combat zone (which is a negative experience) was used. The fifth model assesses the impact of race on crime with the same demographic and life course controls (sex, marital status, age joined, and young crime) and uses Iraq or Afghanistan (a negative experience) as an additional control. Lastly, model six assesses the impact of race on crime with all the variables (sex, marital status, age joined, young crime, courses for credit, self-esteem after joining, and combat zone)\(^2\).

RESULTS

Table 4.1 shows the descriptive statistics of all the variables that were examined in this study. Overall, and except for a few discrepancies most likely due to coding purposes, this sample of military individuals, even though a fairly small sample, closely resembles the larger population of active military. The Table is separated by race to examine whether there are differences in the demographic backgrounds and experiences between Non-Blacks and Blacks. The majority of the sample is Non-Black (61.3%) while 38.7% of the sample is Black. Although these statistics show more representation of Black military members compared to the national average, it still shows Non-Black members being the overwhelming majority. The variables in Table 4.1 show how the military experience varies by race and the p-values are for the mean differences between Non-Blacks and Blacks.

As shown, there are only a few significant mean differences between Non-Black and Black military members. With regards to sex, 22.4% of the sample is female and 77.6% of the sample is male. The national average of the total population of military

\(^2\) Iraq or Afghanistan was not used in the final, full model due to the number of missing cases.
members shows a similar trend with 82.8% being male and 17.2% being female (Department of Defense 2018). Additionally, the relationship between sex and race is statistically significant (p < .05). Though there are more Non-Black military members in the sample and the majority of the sample are male, there is a greater percentage of Black females in this sample compared Non-Black females. This finding goes along with the discussion by Mankowski et al. (2015) and Melin (2016). The average number of Black women in the military is 30% (Melin 2016) and this sample is very consistent with 28.9% of the sample consisting of Black females. In addition, the average age of this sample is 29.62 and the national average age of active duty members and officers and reserve enlisted members and officers is 30.1 (Department of Defense 2018). As is shown, age varies by race and is also statistically significant (p < .001). Black military members are older than Non-Black military members.

Table 4.1 also shows that the majority of both Non-Black (79.8%) and Black (63.3%) military members were likely to agree that life would be dull without any danger in it when they were 16 or 17 years old and this relationship is statistically significant (p < .01). More Non-Black individuals who agreed with this assessment at age 16 or 17 are in the military compared to Black individuals who agreed with this assessment at age 16 or 17. Lastly, there is a statistically significant relationship between race and year the respondent joined the military (p < .01). The year in which the greatest percentage of Non-Black individuals joined the military was in 2007 as 10.3% of the Non-Black sample joined the military in 2007. On the contrary, the year in which the greatest percentage of Black individuals joined the military was in 2001 as 11.7% of the Black sample joined the military in 2001.
Table 4.1 Descriptive Statistics of All Variables, Military Sample By Race

<table>
<thead>
<tr>
<th>Static Factors</th>
<th>All (N = 331)</th>
<th>Non-Black (n = 203)</th>
<th>Black (n = 128)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>22.4% (n = 74)</td>
<td>18.2% (n = 37)</td>
<td>28.9% (n = 37)</td>
<td>.029 (*)</td>
</tr>
<tr>
<td>Male (Ref.)</td>
<td>77.6% (n = 257)</td>
<td>81.8% (n = 166)</td>
<td>71.1% (n = 91)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td><strong>Age (18-39) (mean)</strong></td>
<td>29.62 (SD = 4.507)</td>
<td>28.83 (SD = 4.365)</td>
<td>30.86 (SD = 4.465)</td>
<td>.000 (**)</td>
</tr>
<tr>
<td>Valid</td>
<td>100.0% (n = 331)</td>
<td>100.0% (n = 203)</td>
<td>100.0% (n = 128)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married (Ref.)</td>
<td>42.9% (n = 142)</td>
<td>39.9% (n = 81)</td>
<td>47.7% (n = 61)</td>
<td>.168</td>
</tr>
<tr>
<td>Married</td>
<td>32.6% (n = 108)</td>
<td>35.5% (n = 72)</td>
<td>28.1% (n = 36)</td>
<td>.161</td>
</tr>
<tr>
<td>Separated, Divorced, Widowed</td>
<td>24.5% (n = 81)</td>
<td>24.6% (n = 50)</td>
<td>24.2% (n = 31)</td>
<td>.933</td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td><strong>Mom's Responses of R When R</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Was 13 or 14 Years Old</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Has Trouble Getting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Along With Other Children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not True</td>
<td>75.2% (n = 249)</td>
<td>74.4% (n = 151)</td>
<td>76.6% (n = 98)</td>
<td></td>
</tr>
<tr>
<td>True (Ref.)</td>
<td>24.8% (n = 82)</td>
<td>25.6% (n = 52)</td>
<td>23.4% (n = 30)</td>
<td>.654</td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td>Child Has Strong Temper and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loses It Easily</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not True</td>
<td>49.8% (n = 165)</td>
<td>47.3% (n = 96)</td>
<td>53.9% (n = 69)</td>
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</tr>
<tr>
<td>True (Ref.)</td>
<td>50.2% (n = 166)</td>
<td>52.7% (n = 107)</td>
<td>46.1% (n = 59)</td>
<td>.243</td>
</tr>
<tr>
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<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
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</tr>
<tr>
<td><strong>Additional Self-Report</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Responses for R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life With No Danger In It</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would Be Too Dull For Me (16-17)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>26.6% (n = 88)</td>
<td>20.2% (n = 41)</td>
<td>36.7% (n = 47)</td>
<td></td>
</tr>
<tr>
<td>Agree (Ref.)</td>
<td>73.4% (n = 243)</td>
<td>79.8% (n = 162)</td>
<td>63.3% (n = 81)</td>
<td>.001 (**)</td>
</tr>
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<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td><strong>Self-Esteem at 16-17 (On the</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>whole, I am satisfied with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>myself)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>2.7% (n = 9)</td>
<td>3.0% (n = 6)</td>
<td>2.3% (n = 3)</td>
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</tr>
<tr>
<td>Agree (Ref.)</td>
<td>97.3% (n = 322)</td>
<td>97.0% (n = 197)</td>
<td>97.7% (n = 125)</td>
<td>.733</td>
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<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
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<tr>
<td><strong>Adult Household Member Sent</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Jail/Prison Since R Was 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>86.1% (n = 285)</td>
<td>86.7% (n = 176)</td>
<td>85.2% (n = 109)</td>
<td></td>
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<tr>
<td>Yes (Ref.)</td>
<td>13.9% (n = 46)</td>
<td>13.3% (n = 27)</td>
<td>14.8% (n = 19)</td>
<td>.697</td>
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<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
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<tr>
<td><strong>Total Number of Years in</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military (0 – 25) (mean)</td>
<td>7.63 (SD = 4.493)</td>
<td>7.57 (SD = 4.584)</td>
<td>7.72 (SD = 4.463)</td>
<td>.762</td>
</tr>
<tr>
<td>Valid</td>
<td>99.4% (n = 329)</td>
<td>99.1% (n = 201)</td>
<td>100.0% (n = 128)</td>
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</tr>
<tr>
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<td>0.9% (n = 2)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td><strong>R Re-Enlisted</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>59.2% (n = 196)</td>
<td>61.6% (n = 125)</td>
<td>55.5% (n = 71)</td>
<td></td>
</tr>
<tr>
<td>Yes (Ref.)</td>
<td>40.8% (n = 135)</td>
<td>38.4% (n = 82)</td>
<td>44.5% (n = 52)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
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<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
<tr>
<td>Yes (Ref.)</td>
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<td>38.4% (n = 78)</td>
<td>44.5% (n = 57)</td>
<td>.275</td>
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<td>0.0% (n = 0)</td>
<td>0.0% (n = 0)</td>
<td></td>
</tr>
</tbody>
</table>

| Year R Joined Military                        | .003 (**)        |
| 1995    | 0.9% (n = 3)    | 1.0% (n = 2)   | 0.8% (n = 1)   |
| 1996    | 2.1% (n = 7)    | 2.0% (n = 4)   | 2.3% (n = 3)   |
| 1997    | 4.5% (n = 15)   | 1.5% (n = 3)   | 9.4% (n = 12)  |
| 1998    | 4.2% (n = 14)   | 4.4% (n = 9)   | 3.9% (n = 5)   |
| 1999    | 6.3% (n = 21)   | 4.9% (n = 10)  | 8.6% (n = 11)  |
| 2000    | 7.3% (n = 24)   | 5.4% (n = 11)  | 10.2% (n = 13) |
| 2001    | 9.1% (n = 30)   | 7.4% (n = 15)  | 11.7% (n = 15) |
| 2002    | 6.9% (n = 23)   | 8.4% (n = 17)  | 4.7% (n = 6)   |
| 2003    | 6.9% (n = 23)   | 6.9% (n = 14)  | 7.0% (n = 9)   |
| 2004    | 6.0% (n = 20)   | 4.9% (n = 10)  | 7.8% (n = 10)  |
| 2005    | 4.2% (n = 14)   | 4.9% (n = 10)  | 3.1% (n = 4)   |
| 2006    | 6.9% (n = 23)   | 9.4% (n = 19)  | 3.1% (n = 4)   |
| 2007    | 8.2% (n = 27)   | 10.3% (n = 21) | 4.7% (n = 6)   |
| 2008    | 5.7% (n = 19)   | 6.4% (n = 13)  | 4.7% (n = 6)   |
| 2009    | 5.4% (n = 18)   | 5.9% (n = 12)  | 4.7% (n = 6)   |
| 2010    | 4.2% (n = 14)   | 3.9% (n = 8)   | 4.7% (n = 6)   |
| 2011    | 2.4% (n = 8)    | 3.4% (n = 7)   | 0.8% (n = 1)   |
| 2012    | 3.0% (n = 10)   | 3.4% (n = 7)   | 2.3% (n = 3)   |
| 2013    | 2.1% (n = 7)    | 2.5% (n = 5)   | 1.6% (n = 2)   |
| 2014    | 3.3% (n = 11)   | 3.0% (n = 6)   | 3.9% (n = 5)   |
| Missing | 0.0% (n = 0)    | 0.0% (n = 0)   | 0.0% (n = 0)   |

| Age R Joined Military (18 – 30) (mean) | 19.93 (SD = 2.283) | 19.76 (SD = 2.159) | 20.20 (SD = 2.453) | .100 |
| Valid      | 100.0% (n = 331) | 100.0% (n = 203)  | 100.0% (n = 128)  |
| Missing    | 0.0% (n = 0)    | 0.0% (n = 0)      | 0.0% (n = 0)      |

| Military Grade | .674 |
| E1             | 1.2% (n = 4) | 1.5% (n = 3) | 0.8% (n = 1) |
| E2             | 1.2% (n = 4) | 1.0% (n = 2) | 1.6% (n = 2) |
| E3             | 7.6% (n = 25) | 9.4% (n = 19) | 4.7% (n = 6) |
| E4             | 20.8% (n = 69) | 21.2% (n = 43) | 20.3% (n = 26) |
| E5             | 19.6% (n = 65) | 19.7% (n = 40) | 19.5% (n = 25) |
| E6             | 8.8% (n = 29) | 10.3% (n = 21) | 6.3% (n = 8) |
| E7             | 1.8% (n = 6) | 1.5% (n = 3) | 2.3% (n = 3) |
| Missing        | 39.0% (n = 129) | 35.5% (n = 72) | 44.5% (n = 57) |

| Has R Used Any Skills From Military Job in Civilian Job? | .952 |
| No            | 27.2% (n = 90) | 28.6% (n = 58) | 25.0% (n = 32) |
| Yes (Ref.)    | 12.1% (n = 40) | 12.8% (n = 26) | 10.9% (n = 14) |
| Missing       | 60.7% (n = 201) | 58.6% (n = 119) | 64.1% (n = 82) |

| While in Military, R Take Any Courses for College Credit? | .123 |
| No            | 31.7% (n = 105) | 28.6% (n = 58) | 36.7% (n = 47) |
| Yes (Ref.)    | 67.7% (n = 224) | 70.9% (n = 144) | 62.5% (n = 80) |
| Missing       | 0.6% (n = 2) | 0.5% (n = 1) | 0.8% (n = 1) |

| Number of Years of Regular School R Had Completed or Received Credit For At the Time R Entered the Military | .221 |

128
<table>
<thead>
<tr>
<th>Grade</th>
<th>12\textsuperscript{th}</th>
<th>1\textsuperscript{st}</th>
<th>2\textsuperscript{nd}</th>
<th>3\textsuperscript{rd}</th>
<th>4\textsuperscript{th}</th>
<th>5\textsuperscript{th}</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>59.5% (n = 197)</td>
<td>13.3% (n = 44)</td>
<td>10.6% (n = 35)</td>
<td>3.9% (n = 13)</td>
<td>5.4% (n = 18)</td>
<td>0.3% (n = 1)</td>
<td>6.9% (n = 23)</td>
</tr>
<tr>
<td></td>
<td>62.1% (n = 126)</td>
<td>15.3% (n = 31)</td>
<td>7.4% (n = 15)</td>
<td>3.4% (n = 7)</td>
<td>4.4% (n = 9)</td>
<td>0.5% (n = 1)</td>
<td>6.9% (n = 14)</td>
</tr>
<tr>
<td></td>
<td>55.5% (n = 71)</td>
<td>10.2% (n = 13)</td>
<td>15.6% (n = 20)</td>
<td>4.7% (n = 6)</td>
<td>7.0% (n = 9)</td>
<td>0.0% (n = 0)</td>
<td>7.0% (n = 9)</td>
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</tbody>
</table>

R Ever Worked or Been Deployed in Combat Zone?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>43.8% (n = 145)</td>
<td>51.4% (n = 170)</td>
<td>4.8% (n = 16)</td>
</tr>
<tr>
<td></td>
<td>46.8% (n = 95)</td>
<td>49.8% (n = 101)</td>
<td>3.4% (n = 7)</td>
</tr>
<tr>
<td></td>
<td>39.1% (n = 50)</td>
<td>39.4% (n = 80)</td>
<td>7.0% (n = 9)</td>
</tr>
</tbody>
</table>

Country R Worked Or Was Deployed In: Iraq or Afghanistan

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.5% (n = 38)</td>
<td>39.3% (n = 130)</td>
<td>49.2% (n = 163)</td>
</tr>
<tr>
<td></td>
<td>9.9% (n = 20)</td>
<td>39.4% (n = 80)</td>
<td>50.7% (n = 103)</td>
</tr>
<tr>
<td></td>
<td>14.1% (n = 18)</td>
<td>39.1% (n = 50)</td>
<td>46.9% (n = 60)</td>
</tr>
</tbody>
</table>

How Satisfied R is with Military

<table>
<thead>
<tr>
<th></th>
<th>Not Satisfied</th>
<th>Satisfied (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25.1% (n = 83)</td>
<td>74.9% (n = 248)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>25.6% (n = 52)</td>
<td>74.4% (n = 151)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>24.2% (n = 31)</td>
<td>75.8% (n = 97)</td>
<td>0.0% (n = 0)</td>
</tr>
</tbody>
</table>

Self-Esteem After Joining Military (On the whole, I am satisfied with myself)

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Agree (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24.5% (n = 81)</td>
<td>75.5% (n = 250)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>27.1% (n = 55)</td>
<td>72.9% (n = 148)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>20.3% (n = 26)</td>
<td>79.7% (n = 102)</td>
<td>0.0% (n = 0)</td>
</tr>
</tbody>
</table>

Marital Status After Joining Military

<table>
<thead>
<tr>
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<th>Never Married, Separated, Divorced, Widowed</th>
<th>Married (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50.8% (n = 168)</td>
<td>49.2% (n = 163)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>46.8% (n = 95)</td>
<td>53.2% (n = 108)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>57.0% (n = 73)</td>
<td>43.0% (n = 55)</td>
<td>0.0% (n = 0)</td>
</tr>
</tbody>
</table>

Emotional Behavior Problems After Joining Military

<table>
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<th></th>
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<th>Yes (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80.4% (n = 266)</td>
<td>19.6% (n = 65)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>80.8% (n = 164)</td>
<td>19.2% (n = 39)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>79.7% (n = 102)</td>
<td>20.3% (n = 26)</td>
<td>0.0% (n = 0)</td>
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</tbody>
</table>

Violent Behavior, Temper After Joining Military

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes (Ref.)</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>98.2% (n = 325)</td>
<td>1.8% (n = 6)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>97.5% (n = 198)</td>
<td>2.5% (n = 5)</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td></td>
<td>99.2% (n = 127)</td>
<td>0.8% (n = 1)</td>
<td>0.0% (n = 0)</td>
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</tbody>
</table>

Young Crime

<table>
<thead>
<tr>
<th></th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>41.7% (n = 138)</td>
<td>23.0% (n = 76)</td>
<td>16.6% (n = 55)</td>
<td>6.9% (n = 23)</td>
<td>6.3% (n = 21)</td>
</tr>
<tr>
<td></td>
<td>40.4% (n = 82)</td>
<td>25.1% (n = 51)</td>
<td>15.8% (n = 32)</td>
<td>7.4% (n = 15)</td>
<td>7.9% (n = 16)</td>
</tr>
<tr>
<td></td>
<td>43.8% (n = 56)</td>
<td>19.5% (n = 25)</td>
<td>18.0% (n = 23)</td>
<td>6.3% (n = 8)</td>
<td>3.9% (n = 5)</td>
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</table>
There are several variables in Table 4.1 that are not statistically significant and therefore do not vary by race. However, the variables are discussed to show how this sample of military members compares to that of the national population and to illustrate what the military sample looks like. In terms of education and earnings, the current sample is largely similar to the national data on the military. Eighty-nine percent of the national average of total military population has at least a high school diploma (Department of Defense 2018) and this sample shows a consistent trend with the majority of individuals (59.5%) having completed at least 12th grade prior to entering the military. With regards to pay and prestige, the military has several levels of pay grades (measured by E) with the higher pay being at higher numbers. With this sample, 33.1% of Non-Black military members and 27.4% of Black military members reported receiving a range of the E1-E4 pay grade. The national average for the E1-E4 pay grade is 69.2% Non-Black and 30.8% Black (Department of Defense 2018). With this sample, 30% of Non-Black military members and 25.8% of Black military members comprise of the E5-E6 pay grade. The national average for the E5-E6 pay grade is 64.6% Non-Black and 35.4%

---

3 Percentages do not equal 100% due to missing data.
With regards to marital status, the national average of individuals within the military being married is 50.0% (Department of Defense 2018) while this sample is only 32.6%. The national average of individuals within the military who have never married is 45.0% (Department of Defense 2018) and this sample is 42.9%. In addition, the national average within the military that is divorced is only 4.9% (Department of Defense 2018) compared to a much higher 24.5% of the current sample reporting they are separated, divorced, or widowed.

In addition to what has already been discussed, Table 4.1 also illustrates what this sample of military members generally looks like. For instance, the majority of the sample (75.2%) did not have trouble getting along with other children when they were between the ages of 13 and 14 but the majority of the sample did have a strong temper when they were between 13 and 14 years old (50.2%). In addition, an overwhelming majority of individuals (97.3%) were likely to have high self-esteem when they were 16 or 17 years old and the majority of the sample did not have an adult household member sent to jail or prison since they were 10 years old (86.1%). Individuals are likely to spend, on average, about 7.5 years in the military and the majority (59.2%) have not re-enlisted. Individuals are likely to enter the military at roughly 20 years old, the majority have not used skills they learned in the military for their civilian job (27.2%)\(^5\), and the majority of the sample took courses for credit while in the military (67.7%).

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\(^4\) The national average for the E7-E9 pay grade is 62.1% White and 37.9% Black (Department of Defense 2018). Because there is missing data and because no respondent in this study reported being of a higher pay grade than E7, the comparison to the national average is unobserved.

\(^5\) This is considered the majority due to the vast amount of missing data for this variable.
Most the sample have worked or been deployed to a combat zone (51.4%) and 39.3% of individuals served in Iraq or Afghanistan. The majority of the sample is satisfied with the military (74.9%), have high self-esteem after joining (75.5% of the sample), and the majority are either never married, separated, divorced, or widowed after joining the military (50.8%). An overwhelming majority of the sample do not have emotional behavior problems after joining the military (80.4%) nor do they have violent behavior or a temper after joining the military (98.2%). Lastly, Table 4.1 shows that much of the sample engaged in zero crime as adolescents (41.7%) and the majority of the sample committed zero crime after joining the military (69.2%).

**OLS Model 1**

Model 1 in Table 4.2 shows the OLS regression of race on committing crime after joining the military. The unstandardized (B) and standardized (β) coefficients are shown in the Table. The r-squared for the model is .007, indicating that only 0.7% of the variation in the proportion of crime committed after joining the military is explained by race. As is shown, race is not a statistically significant predictor of committing crime after joining the military (p > .05).

**OLS Model 2**

Model 2 in Table 4.2 shows the OLS regression of race on crime, controlling for the other demographic predictors, age joined, and young crime. The r-square for the model is .077, indicating that 7.7% of the variation in the proportion of crime committed after joining the military is explained by the predictors in the model. There is a statistically significant relationship between being married and crime (B = -0.016, p < .05). Military members who are married commit .016 fewer crimes with each increase in
proportion of crimes committed after joining the military compared to military members who are never married, controlling for the other predictors in the model.

There is also a statistically significant relationship between age joined and crime (B = -.003, p < .05). For every year increase in age that the individual joined the military, each proportion of crimes committed after joining the military decreases by .003, controlling for the other predictors in the model. Model 2 also shows that there is a statistically significant relationship with young crime and crime (B = .006, p < .01). For every increase in young crimes committed, each proportion of crimes committed after joining the military increases by .006, controlling for the other predictors in the model. When comparing the standardized coefficients, a pattern of committing crime as an adolescent has the strongest effect on the proportion of committing crime after joining the military (β = .162).

**OLS Model 3**

Model 3 in Table 4.2 shows the OLS regression of race on crime, controlling for the demographic and life course predictors. The r-square for the model is .081, indicating that 8.1% of the variation in the proportion of crime committed after joining the military is explained by the predictors in the model. There is a statistically significant relationship between age joined and crime (B = -.003, p < .05). For every year increase in age that the individual joined the military, each proportion of crimes committed after joining the military decreases by .003, controlling for the other predictors in the model. Model 3 also shows that there is a statistically significant relationship with young crime and crime (B = .007, p < .01). For every increase in young crimes committed, each proportion of crimes committed after joining the military increases by .007, controlling for the other
predictors in the model. Like the previous model, a pattern of committing crime as an adolescent has the strongest effect on the proportion of committing crime after joining the military ($\beta = .176$). As is shown, a positive experience like education in the military nor self-esteem after joining the military are significant ($p > .05$), thus showing that hypothesis 1 is unsupported. These predictors do not shift a crime trajectory.

Table 4.2 Regression Coefficients Predicting the Proportion of Crimes Committed After Joining the Military, Including Positive Experiences

<table>
<thead>
<tr>
<th></th>
<th>Model 1 (N = 331)</th>
<th></th>
<th>Model 2 (N = 331)</th>
<th></th>
<th>Model 3 (N = 329)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>$\beta$</td>
<td>B (SE)</td>
<td>$\beta$</td>
<td>B (SE)</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Non-Black Male</td>
<td>.010 (.007)</td>
<td>.081</td>
<td>.008 (.006)</td>
<td>.069</td>
<td>.006 (.006)</td>
<td>.053</td>
</tr>
<tr>
<td>Male</td>
<td>.014 (.008)</td>
<td>.102</td>
<td>.013 (.008)</td>
<td>.097</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>-.016 (.007)*</td>
<td>-.128</td>
<td>-.013 (.007)</td>
<td>-.105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated, Divorced, Widowed</td>
<td>-.001 (.008)</td>
<td>-.007</td>
<td>-.002 (.008)</td>
<td>.016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Joined</td>
<td>-.003 (.001)*</td>
<td>-.125</td>
<td>-.003 (.001)*</td>
<td>-.139</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young Crime</td>
<td>.006 (.002)**</td>
<td>.162</td>
<td>.007 (.002)**</td>
<td>.176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courses for Credit</td>
<td></td>
<td></td>
<td>.003 (.007)</td>
<td>.024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem After Joining</td>
<td></td>
<td></td>
<td>-.007 (.008)</td>
<td>-.056</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant R. Sq.</td>
<td>.026 (.005)**</td>
<td>.077</td>
<td>.077 (.030)*</td>
<td>.085 (.031)**</td>
<td>.081</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

**OLS Model 4**

Model 4 in Table 4.3 shows the OLS regression of race on crime, controlling for the other demographic predictors, age joined, young crime, and for combat zone. The r-square for the model is .075, indicating that 7.5% of the variation in the proportion of crime committed after joining the military is explained by the predictors in the model. There is a statistically significant relationship between being married and crime ($B = -.016$, $p < .05$). Military members who are married commit .016 fewer crimes with each increase in proportion of crimes committed after joining the military compared to military members who are never married, controlling for the other predictors in the model.
There is also a statistically significant relationship between age joined and crime ($B = -.003, p < .05$). For every year increase in age that the individual joined the military, each proportion of crimes committed after joining the military decreases by .003, controlling for the other predictors in the model. Model 4 also shows that there is a statistically significant relationship with young crime and crime ($B = .006, p < .01$). For every increase in young crimes committed, each proportion of crimes committed after joining the military increases by .006, controlling for the other predictors in the model. Young crime has the largest standardized coefficient, meaning that a pattern of committing crime as an adolescent has the strongest effect on the proportion of committing crime after joining the military ($\beta = .157$).

**OLS Model 5**

Model 4 in Table 4.3 shows the OLS regression of race on crime, controlling for the other demographic predictors, age joined, young crime, and Iraq or Afghanistan. The r-square for the model is .082, indicating that 8.2% of the variation in the proportion of crime committed after joining the military is explained by the predictors in the model. There is a statistically significant relationship between being married and crime ($B = -.023, p < .05$). Military members who are married commit .023 fewer crimes with each increase in proportion of crimes committed after joining the military compared to military members who are never married, controlling for the other predictors in the model. Model 5 also shows that there is a statistically significant relationship with young crime and crime ($B = .006, p < .05$). For every increase in young crimes committed, each proportion of crimes committed after joining the military increases by .006, controlling for the other predictors in the model.
Also shown in Model 5 is that marital status has the strongest effect on the proportion of committing crime after joining the military ($\beta = -.197$). When examining the findings from Model 4 and Model 5, it is shown that neither negative experience in the military is related to committing crime after joining the military. Therefore, hypothesis 2 is unsupported in the study. Negative experiences within the military, like serving in a combat zone or serving in Iraq or Afghanistan does not shift a trajectory of crime.

**OLS Model 6**

Model 6 in Table 4.3 shows the OLS regression of race on crime, controlling for all the other variables in the previous models\(^6\). The r-square for the model is .079, indicating that 7.9% of the variation in the proportion of crime committed after joining the military is explained by the predictors in the model. There is a statistically significant relationship between age joined and crime ($B = -.004, p < .05$). For every year increase in age that the individual joined the military, each proportion of crimes committed after joining the military decreases by .004, controlling for the other predictors in the model.

Model 6 also shows that there is a statistically significant relationship with young crime and crime ($B = .007, p < .01$). For every increase in young crimes committed, each proportion of crimes committed after joining the military increases by .007, controlling for the other predictors in the model. The strongest effect on the proportion of committing crime after joining the military is a pattern of committing crime as an adolescent ($\beta = .171$). As was shown in the previous models, the positive and negative life course

\(^6\) Due to the number of missing cases for Iraq or Afghanistan, this variable was not controlled for in Model 6. Combat zone was the only negative experience controlled for in this model.
predictors were not important predictors of crime when all were controlled. However, what was consistently shown to be an important predictor of later crime was early crime, thus showing strong support for life course theory.

Table 4.3 Regression Coefficients Predicting the Proportion of Crimes Committed After Joining the Military, Including Negative Experiences

<table>
<thead>
<tr>
<th></th>
<th>Model 4 (N = 315)</th>
<th></th>
<th>Model 5 (N = 168)</th>
<th></th>
<th>Model 6 (N = 315)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>β</td>
<td>B (SE)</td>
<td>β</td>
<td>B (SE)</td>
<td>β</td>
</tr>
<tr>
<td>Non-Black</td>
<td>.007 (.007)</td>
<td>.060</td>
<td>.003 (.009)</td>
<td>.023</td>
<td>.006 (.007)</td>
<td>.049</td>
</tr>
<tr>
<td>Male</td>
<td>.014 (.008)</td>
<td>.099</td>
<td>.019 (.011)</td>
<td>.134</td>
<td>.012 (.008)</td>
<td>.090</td>
</tr>
<tr>
<td>Married</td>
<td>-.016 (.008)*</td>
<td>-.127</td>
<td>-.023 (.010)*</td>
<td>-.197</td>
<td>-.013 (.008)</td>
<td>-.108</td>
</tr>
<tr>
<td>Separated, Divorced,</td>
<td>-.002 (.008)</td>
<td>-.015</td>
<td>-.003 (.011)</td>
<td>-.027</td>
<td>-.001 (.009)</td>
<td>.006</td>
</tr>
<tr>
<td>Widowed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Joined</td>
<td>-.003 (.001)*</td>
<td>-.135</td>
<td>-.003 (.002)</td>
<td>-.093</td>
<td>-.004 (.001)*</td>
<td>-.147</td>
</tr>
<tr>
<td>Young Crime</td>
<td>.006 (.002)**</td>
<td>.157</td>
<td>.006 (.003)*</td>
<td>.153</td>
<td>.007 (.002)**</td>
<td>.171</td>
</tr>
<tr>
<td>Combat Zone</td>
<td>.002 (.007)</td>
<td>.014</td>
<td>-.006 (.010)</td>
<td>-.045</td>
<td>.004 (.007)</td>
<td>.033</td>
</tr>
<tr>
<td>Iraq or Afghanistan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courses for Credit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem After</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joining</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>.083 (.031)**</td>
<td>.074 (.045)</td>
<td>.091 (.032)**</td>
<td>.079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. Sq.</td>
<td>.075</td>
<td>.082</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001

DISCUSSION

The purpose of this study was to get a clearer understanding of the military experience, how it varies by race, and how positive and negative experiences within the military influences a trajectory of crime. As was shown, there were a few significant differences with regards to race and some of the study variables (sex, age, individuals agreeing that life would be dull without any danger in it at ages 16 or 17, and the year the respondent joined the military). Moreover, race was not a significant predictor of committing crime after joining the military in any of the models presented. This finding adds to the growing literature of the ambiguousness of how the military experience varies by race.

The findings also show that hypothesis 1 was unsupported. The research on military, and more specifically on military and race, showed that individuals who join the
military may be doing so in order to gain social capital and improve their life course trajectory. Hypothesis 1 predicted that individuals who took advantage of using the military as a means for education and taking classes while in the military for school credit would decrease a crime trajectory. This variable was not significant and was thus not an important predictor of detailing how the military can serve as a transition to a positive life trajectory. Self-esteem after joining the military was also a predictor of committing crime after joining. This, too, was not significant when it was expected that those who had higher self-esteem after joining the military would be on a trajectory of less crime, however, this was unfound. Hypothesis 2 was also unsupported - negative experiences within the military like serving in a combat zone or specifically serving in Iraq or Afghanistan were not important predictors to a trajectory of crime even though previous research indicates otherwise.

As was shown, the most consistent predictor of committing crime after joining the military was having a history of delinquency, showing to be very consistent with life course theory. Life course theory is about earlier patterns predicting later patterns and behaviors and having a history of delinquency was significant in every model presented. When individuals were delinquent as adolescents, they committed more crime after joining the military. Thus, individuals who are on a trajectory of crime in adolescence are likely to remain on a crime trajectory after joining the military. What is interesting, however, is that when examining Table 4.1, the majority of military members were not delinquent when they were between the ages of 10-17, but of the ones who were, are significantly more likely to commit crime later in life. This finding corresponds to the literature on life course theory and crime where prior delinquency is a likely predictor of

In addition to committing crime as an adolescent being a likely predictor of committing crime after joining, age the respondent joined the military and marital status were also important predictors of a crime trajectory. Military members who are married commit fewer crimes compared to military members who never married. This finding goes along with elements of the life course shifting one’s trajectory. Marriage is a transition that directs individual’s trajectories (Elder Jr. 1985; Sampson and Laub 1992/1993) and research has shown that individuals who are married are less likely to engage in crime compared to individuals who are single (Cohen and Felson 1979).

This study also shows that the younger an individual is when they join the military, the proportion of crimes committed after joining the military increases. This finding corresponds to what Munson and Miller (1921) found as individuals who join the military at a young age might not be fully matured and be likely to act out and engage in criminal behavior. In addition, this finding also relates back to the age-crime curve of deviant behavior being highest amongst individuals in early adulthood (Hirschi and Gottfredson 1983; Piquero et al. 2003; Stolzenberg and D’Alessio 2008). However, literature shows that younger individuals who entered the military reported better life outcomes compared to older individuals who joined (Elder Jr. 1986; Elder Jr. et al. 1991; McDonald and Elder Jr. 2006; Sampson and Laub 1996). Though these studies did not specifically examine crime, they did find that the younger the individual was when they first entered the military, the better the life trajectory. The findings in this study show
otherwise and instead shows that the younger the individual is when they enter the military, the worse their life trajectory.

Limitations

The biggest limitation of this study is the small sample size. Because of this, the findings are ungeneralizable. Although the sample size is small, this study adds to the existing research of the uncertain relationship between military status, race, and crime. Another limitation of this study is that it only focused on Black and Non-Black military members. Although Blacks are one of the largest racial groups represented in the military (Department of Defense 2018), there are still other racial groups that are overlooked in this study.

A third limitation of this study is that there is not a lot of detail about what the experiences were like by race for those serving in the military. For example, there is no information on if individuals felt like they were treated well within the military or if they felt there was discrimination. These are the types of experiences that may matter very much to how satisfied individuals were with the military. Rather, what was available in the current data were some basic differences in deployment experiences and behavior after military service, not necessarily items that assessed how or what their military experience was like while they were serving.

A final limitation deals with the dependent variable. Because the dependent variable consisted of three items that are violent crimes, there is not much variation in crime as many of the military members did not engage in violent crime after joining the military. Piquero (2000) discussed the issue of examining violent offending because there are few individuals who are responsible for most of the violent offending. Therefore,
when using violent offending as a continuous variable, as is done in this study, data is likely to be skewed. One way to overcome this issue would be to use logistic regression where the odds of committing crime after joining the military may be better assessed due to the dichotomization of this variable where one would be that they committed crime after joining and zero would be that they did not commit crime after joining.

**Future Research**

Future research should first seek to have a sample size larger than the one in the current study. If this is possible, future researchers should examine the military experience by specific military status. In other words, future researchers could examine how the findings in this study compare for reservists or guards and to active duty members. As Kwan et al. (2017) found, reservists, not active duty members, were more likely to be linked to violence later in life after serving in Iraq or Afghanistan. This leaves room for researchers to examine the importance of how the military experience varies by race on violence, by military status. Having this discrepancy would further add to the literature on the military and on race.

Another area for future research would be on examining the military experience by race and the influence of combat on violent and nonviolent crimes. Much of the previous literature has focused on how the military influences later life violence, but it also takes PTSD into account. Future researchers could focus on the later life outcomes of violent and nonviolent offenses and how this might differ according to race. Furthermore, researchers can also take other races into account and how they are affected by the military and more specifically by combat. Bouffard (2005) found that individuals who are in the military and are of Hispanic descent are most likely to commit violent
offenses after joining the military compared to any other group. Future researchers can include Hispanics as a third racial group to determine how Hispanics are affected by military experiences like serving in combat areas and more specifically by serving in Iraq or Afghanistan. In addition, future researchers could also examine how positive experiences within the military, like education, impacts life outcomes for Hispanics.

CONCLUSION

Life course theory emphasizes the importance of patterns and behaviors predicting later life patterns and behaviors. This theory is appropriate for military research because many things happen early in life that may influence the decision to join the military, or that those who join the military may be on a very different life course trajectory than civilians. For instance, many of the studies have focused on individuals joining the military in order to better their lives (Mankowski et al. 2015; Melin 2016). Individuals who use the resources available to them within the military may have a different or more positive trajectory compared to someone who does not use these resources. This was one of the goals within this study and was unfortunately found to be unsupported. However, researchers could focus on how positive experiences within the military, like education, or counseling and specific career training, affects other life outcomes and trajectories, not just crime.
CHAPTER V
SUMMARY AND CONCLUSIONS

The objective of this dissertation was to examine the military experience of individuals who have served since September 11, 2001. This type of research is needed because a lot of the literature that examines the military focuses on individuals who have served in earlier conflicts (i.e., World War II and the Vietnam War). In addition, this kind of research is still relatively rare in criminology. This dissertation used a quasi-experimental methodological technique to examine life outcome differences between military members and civilians and to apply the generated dataset to examine crime differences between the two groups. This dissertation also examined how the military experience may vary by race with regards to criminal offending. Most importantly, this dissertation used life course theory to examine the influence of military on one’s crime trajectory.

Many researchers have used life course theory to examine the military because evidence has shown that the military serves as a transition event that may shift the trajectory of one’s life (Bouffard 2005; Elder Jr. 1985/1998; Laub, Sampson, and Sweeten 2008; Miller, Shutt, and Bernstein 2010). However, studies show that the military-crime relationship is inconsistent because it is difficult to conclude how the military specifically affects an individual. Some studies have found that the military may serve as a turning point where individuals who once engaged in crime desist after the
military (Laub and Sampson 2003; Sampson and Laub 1992/1993; Teachman and Tedrow 2014) and there is also research that shows the opposite. For instance, researchers have found that serving in the military may lead one to a trajectory of crime, particularly violent crime (BMJ 2013; Elder Jr. 1998; Köbach, Schaal, and Elbert 2015; Rohlfs 2010; Worthen 2011). Some of this inconsistency is exacerbated due to the lack of appropriate civilian comparisons. In addition, the military-crime relationship is made more unclear when researchers take race into account (Bouffard 2005; Craig and Connell 2015; Rand 1987). Therefore, the overarching goal of this dissertation was to determine how the military affects life outcomes. Specifically, this dissertation focused on three main research questions:

1. How does the military serve as a transition event that leads to a trajectory of crime?

2. How do childhood predictors of crime vary by military status?

3. How does the military experience vary by race and how does it affect a trajectory of crime?

To address these issues, I separated the dissertation into three empirical studies, each of them as individual article-length chapters. The data that were used for each chapter were all consistent throughout and were used to assess patterns and behaviors in childhood and adolescence and their patterns and behaviors in adulthood. With each chapter, the area of focus became narrower. Chapter Two discussed the process of creating a matched sample to allow for a comparison of military members to civilians, something that is missing from the current literature. Then, Chapter Three used this dataset to examine the predictors of committing crime and compared whether these vary
for military members and civilians. Lastly in Chapter Four, I focused on the military sample only and how race was associated with military experiences and how race and experiences within the military may influence a crime trajectory.

EMERGENT THEMES

One of the most consistent themes in all the analyses was the importance of having a history of delinquency in adolescence as a predictor of committing crime later in life. As was shown in Chapters Three and Four, delinquency in adolescence was a significant predictor of later crime in each of the models presented. Although the majority of the samples in Chapters Three and Four were not delinquent in adolescence, the ones who were delinquent were set on a trajectory of crime and were likely to be linked to crime later in life.

Delinquency in adolescence is an important theme because it is very consistent with life course theory. Life course theory is a theory about patterns and behaviors and predicting later patterns with earlier patterns (Elder Jr. 1985; Sampson and Laub 1992/1993). The findings in this dissertation showed that delinquency in adolescence predicts crime. In other words, if an individual is deviant in adolescence, they are likely to remain on that deviant trajectory into adulthood. This connects back to Moffitt’s (1993/2008) discussion of the adolescent-limited offender and the life-course persistent offender. The adolescent-limited offender commits delinquent acts during their teenage years and then this behavior begins to decline as they age. With life-course persistent offenders, their behavior does not decline as they age, but this behavior continues into adulthood. It appears that the sample within this dissertation represents more of the life-course persistent offenders. Although the majority of the sample were not delinquent as
adolescents, the behavior of the ones who were did not decline as they aged because these individuals were likely to continue on a crime trajectory into adulthood.

Another common theme throughout the dissertation is the importance of age. Age is also a very important element to life course theory as was discussed with the age-crime curve (Hirschi and Gottfredson 1983; Piquero, Farrington, and Blumstein 2003; Stolzenberg and D’Alessio 2008). Compared to other age groups, adolescents are most likely to engage in delinquent activity. As discussed with the adolescent-limited offender, as the individual reaches adulthood, delinquent behavior is likely to decline. Researchers examining the military using life course theory have often found that the younger an individual is when they enter, the better their life outcomes will be (Elder Jr. 1986; Elder Jr., Gimbel, and Ivie 1991; McDonald and Elder Jr. 2006; Sampson and Laub 1996). Additionally, there are studies that show that the older an individual is when they enter the military, the worse their life trajectory is (Elder Jr., Shanahan, and Clipp 1994). This relates back to Hogan’s (1978) discussion of the importance of the sequence of events and if a specific life event precedes another, then an individual will likely experience disruption in their life course trajectory. When examining the military sample only, as is done in Chapter Four, the age in which individuals joined the military is shown to be significant in almost all the models. The age-crime curve is an important element to life course theory and the findings suggest it is important for military members. As was shown in this study, younger individuals in the military are more likely to engage in crime after joining the military, indicating a negative trajectory.

A third common theme was household deviance. In Chapter Three, having an adult household member sent to jail or prison since the respondent was 10 years old was
an important predictor of crime in the full sample model, the military sample, and the civilian sample. This finding is important to life course theory because it emphasizes the elements of control theory embedded within it. Weak parental attachments are linked to later crime (Hirschi 1969). In addition, parental deviance is also linked to later crime (Sampson and Laub 1993). Individuals who grew up in criminal households may have weaker attachments to their parents because of the parent’s own deviance. This, in turn, could affect an individual’s crime trajectory. Also important is that the predictors of crime in the military sample and the civilian sample were the same with the addition of danger assessment in adolescence being important for civilians. This shows that childhood predictors of crime do not really vary by military status.

Another theme that I aimed to emphasize throughout this dissertation was the importance of context. Previous researchers have argued that when examining the military, it is important to take context into account (Craig and Connell 2015). In Chapter Two, I did this by including several predictors like demographics, cognitive predictors, and childhood experiences and behaviors that would take place prior to serving in the military. Using many variables to match military members to civilians accounts for context because it aims to make these two groups as similar as possible and to have a clear understanding of what the samples look like. This applies to context because it matches military members and civilians on important factors in their childhood and adolescence that would take place prior to military service. The more matching variables that are included, the better the assessment of the treatment effect and to examine the differences between military members and civilians with regards to life outcomes.
Chapter Three used some of these matching variables as predictors of crime to examine the impact of military service. For example, Sampson and Laub (1993) argued that childhood misbehavior factors, like temper tantrums, are predictors of crime. I included these kinds of variables in my analyses to examine how contextual aspects from childhood are important predictors of crime. Lastly, Chapter Four examined how the military experience varies by race. Craig and Connell (2015) argue that when discussing the military and race, context is an aspect that is overlooked and should be considered. Chapter Four illustrated different measures of life course for military members and if these measures varied by race. In addition, this chapter examined how measures of life course like positive and negative experiences in the military affect later life outcomes, like crime, and whether race was an important predictor of committing crime after joining the military.

IMPLICATIONS

Theoretical

Researchers who have used life course theory have argued that longitudinal data is beneficial in studying life outcomes because they are able to examine how experiences from childhood or adolescence impacts behavior as adults (Farrington 2008; Hirschi and Gottfredson 1983; Piquero et al. 2003; Sampson and Laub 1992/1993). For example, researchers who have examined military enlistment have found that individuals who view the military as exciting are more likely to join (Bachman, Segal, Freedman-Doan, and O’Malley 2000; Duffy 1988). In addition, researchers have also found that individuals who have a history of delinquency (Teachman and Tedrow 2014) or aggression (Bachman et al. 2000; Beaver, Barnes, Schwartz, and Boutwell 2015; Elder Jr., Wang, Spence,
Adkins, and Brown 2010; Johnson and Kaplan 1991; Kwan, Jones, Hull, Wessely, Fear, and MacManus 2017) are likely to join the military as well. This relates to life course theory because it shows how exhibiting behavior during childhood or adolescence affects one’s choices in the future. In other words, for example, having a history of delinquency in adolescence directs one’s trajectory towards military enlistment and also directs one’s trajectory towards crime.

Although Chapter Two did not have a theoretical framework because it was largely a methodological piece, the predictors that were used to match military members and civilians prior to enlisting parallel that which would fall within life course theory. This chapter adds to the literature on life course theory because I created a dataset where examination of a range of measures in childhood and adolescence assesses the impact of life outcomes, like crime. Much of the research focuses on how the military serves as an important transition that affects one’s trajectory but what is missing is a comparable group of non-military individuals. I was able to compare military members to civilians on the basis of several key factors and was able to determine whether military experience has an impact over and above earlier patterns from childhood and adolescence.

Chapter Three used life course theory to examine the military-crime relationship. One of the goals of this chapter was to test whether childhood predictors set a trajectory of crime. Sampson and Laub (1993) argued that childhood misbehavior will affect later life crime and offending, regardless of military status. The main objective in this chapter was to examine how the military affects the relationship between childhood predictors and crime. Another goal of this chapter was to examine how the childhood predictors of crime vary based on military service and to see how the military may act as a transition
event that directs a crime trajectory. These goals aimed to address research questions one and two.

Findings from Chapter Three showed that some childhood predictors influenced crime and that military status was important. Military members commit fewer crime compared to civilians and military service is related to later crime in that it decreases a crime trajectory. This is important to life course theory because this group of military members were very similar to the civilian group. Findings show that the military does serve as a transition event that directs individuals away from a crime trajectory. As was discussed in Chapter Three, this finding could be linked to the literature on catharsis and the military serving as an outlet, or a transition event, where individuals who are aggressive go to exhibit this behavior in a manner that is most likely punishable but tolerable to a degree. The findings from Chapter Three advances life course theory because it shows that it is not necessarily just the childhood and adolescent factors that sets a trajectory of crime, but it is also military. The impact of military on crime was successfully assessed within the chapter by showing that the military is a transition event that decreases a crime trajectory.

Chapter Four provided an innovative way to examine the military experience and its influence on crime by using life course theory. While research that has used life course theory to examine the military-crime relationship have often used early life factors as predictors of crime, this study aimed to examine the impact of social aspects within the military and its impact on a trajectory of crime. This chapter presented a new way to examine the military experience by taking agency into account. When individuals join the military, they do so for a variety of reasons. As has been discussed, one of these reasons
could be social capital and incentives like education may positively shift the trajectory of one’s life. One of the goals of this study was to test how social elements embedded within the military structure may serve as a turning point in one’s trajectory. Therefore, this study tested life course theory in a new way by using a positive turning point within the structure to assess crime after joining the military. However, as was shown, taking school courses while in the military was not an important predictor of crime. Although this positive turning point does not affect one’s crime trajectory, it may be an important predictor for different life outcomes. For instance, perhaps positive turning points, like education, would positively affect one’s employment trajectory.

Another goal of Chapter Four was to examine an additional contextual aspect of the military: the influence of combat. This study is important to life course theory because it has been argued that life events are likely to affect one’s social history and this, in turn, could affect their trajectory (Sampson and Laub 1993). The experiences in Iraq or Afghanistan may be different than what takes place in different deployment locations and this could connect to life events shaping one’s social history. However, unlike previous research, combat and Iraq or Afghanistan were shown to not be important predictors of committing crime after joining the military. Perhaps the impact of combat and deployment locations like Iraq or Afghanistan would be better examined from a qualitative perspective. It could be that more in-depth qualitative work would better assess how combat affects one’s trajectory.

Methodological

Researchers have been interested in the military-crime relationship for years and have been interested in examining how the military may shift one’s life trajectory. When
examining this, researchers have often used prison inmates for a point of comparison (Bronson, Carson, Noonan, and Berzofsky 2015; Lunden 1952; Van Dyke and Orrick 2017). Bronson et al. (2015) and Lunden (1952) were interested in examining military members compared to civilians and Van Dyke and Orrick (2017) were interested in examining military members within prison. Van Dyke and Orrick (2017) used propensity scores to match military members who experienced combat and who did not to examine the treatment effect of combat on crimes committed. Bronson et al. (2015) and Lunden (1952) did not incorporate such methodological techniques. The methodological implication presented in this dissertation is aimed for the use of more advanced methodological techniques, like propensity score matching.

Using propensity scores in this dissertation was beneficial because it accounted for predictors that would occur prior to serving in the military. When studying how the military affects individuals, it is important to take these predictors into account. In addition, this technique coincides with the theoretical framework as well. Observing early predictors to determine later life outcomes is one of the main objectives to life course theory. Therefore, when examining the impact of military on life outcomes, propensity score matching would be ideal. This dissertation shows the importance of doing propensity score matching when examining the military. It is important because it can show whether it was the military per se that has an effect on crime and not just prior childhood and adolescent predictors of crime. In addition, propensity score matching is important because it compares military members and civilians to determine if the predictors of a crime trajectory are the same for both groups.
Although Bronson et al. (2015) and Lunden (1952) were interested in examining the differences between military members and civilians in prison on crimes committed, there is no real point of comparison between the groups. Van Dyke and Orrick (2017) used propensity score matching to examine military members in prison and the influence of combat on crime. Van Dyke and Orrick (2017) used the appropriate methodological technique for their study. To date, there is not a study that has used propensity scores to examine life outcome differences between military members and civilians. As was discussed in Chapter Two, there are studies that use propensity score matching to examine who joins the military, but in terms of applying this to life course theory and later life outcomes, this dissertation appears to be the first such study.

Military

As was shown in Chapter Three, military members commit fewer crimes than civilians and delinquency in adolescence is consistently a strong predictor of crime, as it was significant in the full, military, and civilian models. Although the military may serve as an outlet for aggressive behavior, as was shown with the catharsis discussion, this predictor of delinquency on crime for military members is important. This may be a strong predictor for military members because the military is an institution where aggression and toughness is tolerable and after joining, this behavior can continue for military members. However, civilians who were delinquent in adolescence are likely linked to later crime as well. The caveat is that in the full model when controlling for all predictors, it was shown that the military decreases a trajectory of crime.

These findings can be used as implications for the military because knowing life histories of individuals prior to entering service may help individuals transition out of
military life and back to civilian life. In addition, if individuals within the military know of individual’s life histories, they may be able to take these cases into account when assigning deployments. Perhaps individuals with an aggressive history would fare better being a reserve or a guard\(^1\) rather than in active duty. Here, taking context into account would be important to life outcomes. In other words, knowing one’s previous patterns and behaviors may help transition one into the military where those patterns and behaviors may positively shift after serving.

In addition to placement upon entering service with regards to previous behaviors, caseworkers and counselors within the military knowing of this pattern of earlier behavior would be beneficial as well. It would be beneficial because it might not be what the individual experienced within the military that set a crime trajectory, but that they were already on this path prior to entering service. Being aware of this contextual aspect would be important in how caseworkers and counselors treat military members who exhibit criminal or violent tendencies and to help reintegrate them back into civilian life. Keeping track of individuals who have served in the military and the life outcomes of those who had a history of delinquency would better help and better prepare the next round of veterans getting ready to reenter civilian life. If there is a pattern of those who entered the military with a history of deviant behavior continuing on a crime trajectory, then counselors may be able to specifically treat the next group of veterans for them to be steered away from a crime trajectory. This would be an evidence-based policy where

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\(^1\) As was discussed in Chapter Four, there is evidence that shows that reserves/guards fare worse in terms of life outcomes compared to active duty members (Kwan et al. 2017). However, this is surprising because there is also plenty of research that shows that being in active duty and deployed in combat locations negatively affects trajectories.
caseworkers and counselors could treat veterans with a history of deviance in such a way that their trajectory would shift to one that is crime-free.

LIMITATIONS

Although there are several contributions from this dissertation to the field of life course, crime, military, and race, there are also some limitations that need to be addressed. The first limitation is the small sample of military members. The military is a large institution within the United States and there are some datasets that probably would have yielded a larger sample size. However, due to the focus of the dissertation, the National Longitudinal Survey of Youth, Child and Young Adult (NLSY-CYA) sample (1986-2014) was selected because this dataset allowed for closer examination of the military experience and because of the original oversample of military in the NLSY. Furthermore, as of 2015, only about .4% of the United States population were active military members (Department of Defense Personnel, Workforce Reports & Publications 2015) and there are 11,521 individuals in the NLSY-CYA. While the small sample of military in this dissertation (N = 331) is not ideal for statistical purposes, it is a good representation of the military (2.87% in this dissertation) compared to the national estimate (.4%)². While the findings are not generalizable due to sample size, the dissertation helps to give an understanding to the military experience and how the military affects life outcomes.

Also dealing with the issue of the small sample size, another limitation is that only Black and Non-Black military members were examined in this study. Studies have

² It is important to note, however, that the military variable in this dissertation is “ever military.” So comparing my sample to the national estimate is reported with caution.
shown that race is often overlooked when studying the military and that individuals of Hispanic descent are likely to commit crime after serving (Bouffard 2005). Because of the small sample of military members, it was a practical decision to only examine Black and Non-Black military members.

The skewness of the dependent variable in Chapter Three and Chapter Four is another limitation of this dissertation. Because the dependent variable of crime consisted of items that were based on violence, the majority of the sample did not commit any proportion of crime. As Piquero (2000) discussed, when using violence as a continuous outcome variable, data is likely to be skewed towards zero and that a handful of individuals will be responsible for most of the crimes committed. Chapters Three and Four did have dependent variables that were skewed towards zero and I truncated these variables to overcome this. This process produced variables that were still skewed towards zero but the skewness statistic was improved.

Another limitation deals with the data itself, including the issue of missing data and regarding some of the measures. Although imputation was used to overcome the issue of missing data, imputation is still a technique of imputing data that is simply not there. Data is imputed based on the valid cases that are present and is essentially a technique where estimated guesses are imputed. For example, one of the variables that had a lot of missing data was father’s occupation when the respondent was 16 or 17 years old. The reason for why there is so much missing data for this particular variable could be due to the fact that the NLSY-CYA is based on the children of mothers from the original NLSY sample. Therefore, information about fathers might be unknown and mother’s occupation is not part of the questionnaire.
In addition, some of the measures in this study were not ideal. First, when using the childhood and adolescent predictors in Chapter Two, one of the measures pertained to family structure, specifically who the individual lived with when they were 16 or 17 years old (i.e., both parents, just mother, just father, other relative, or other). As was discussed in that chapter, there is no way to indicate whether if this just includes biological parents, if it includes adoptive parents, or step parents. This is important to military enlistment because Spence, Henderson, and Elder Jr. (2012) found that individuals are likely to enlist if they lived with adoptive or step parents. Not knowing what is included in this measure is problematic.

Another limitation that corresponds to this measure is that there is not a way to tell stability pattern. For instance, the life course of a child who lived with their two biological parents all their life would be different compared to a child who, within the past three years, went from living with both biological parents to living with their mother and her new husband. Most life course theorists argue for the use of longitudinal data and my study is cross-sectional. Longitudinal data allows for stability and change to be assessed and this is crucial to life course theory. Because my data is essentially like a snap-shot of individual’s lives at certain ages, I do not have the aspect of change for most of the events that are studied because there are not repeated measures. However, my study does have the aspect of time by including items that are measured at specific ages.

Lastly, another measure that needs to be addressed is the military status variable. Due to the small sample size, military was coded into a dichotomous variable. However, there is research that suggests that active duty members and reservists/guards have different experiences within the military and this could affect their life outcomes. Coding
military to be “ever military” or “never military” does not address one of the common themes of this dissertation – that of context. Similarly, another aspect that is missing in the dissertation is the impact of military branch on life outcomes. Military experiences may differ depending on the branch they are in. For instance, someone who is in the Air Force will have a different military experience compared to someone who is in the Army and life outcomes could be different for these groups. This, too, would further address the issue of context.

FUTURE RESEARCH

Since race is a major aspect of this dissertation and only Black and Non-Black military members were examined, future research could include additional individuals of different racial backgrounds. For example, future research can examine how the military serves as a transition event on life outcomes for specific minority groups. Because the research is largely inconsistent when discussing race and the military, examining how the military affects one’s life trajectory for Black military members and Hispanic military members, for example, can add to the literature on the military, race, and life course.

One of the main contributions of this dissertation was showing how propensity score matching could be used to examine the military and how the military affects later life outcomes. As was discussed, Van Dyke and Orrick (2017) used propensity score matching to examine how combat affects crime. Future researchers should aim to use propensity score matching to study other outcomes of the military as well. For instance, much of the research on the military already details posttraumatic stress disorder (PTSD) being a major life consequence of serving in the military (Adams, Nikitin, Wooten, Williams, and Larson 2016; Gansel 2013; Giardino 2009; Killgore et al. 2008; Kim,
Thomas, Wilk, Castro, and Hoge 2010; Köbach et al. 2015; MacManus et al. 2013). In addition, much of this research focuses on the relationship between PTSD and violence (Gansel 2013; Worthen 2011). Propensity score matching can be used in future research to examine the impact of PTSD on violence by matching a treated group (those who have PTSD) and a control group (those who do not have PTSD) on violence. Individuals can be matched on several observed covariates that would take place prior to developing PTSD. Such predictors would include serving in combat areas, or suffering from a life-altering physical injury.

The military is a large institution and researchers can examine it from a variety of different angles. As was discussed, Chapter Two presents a dataset where military members and civilians are alike and this allows for testing how the military affects later life outcomes. Researchers have been interested in studying how the military affects substance and alcohol use (MacManus et al. 2013), and they have been interested in how it affects other life aspects like marriage (Bouffard 2005; MacLean and Elder Jr. 2007). Using methods that were discussed within this dissertation can better assess the impact of military on these outcomes. In addition, sexual assault within the military and suicide are popular areas of interest being presented in the current literature on the military.

Sadler, Mengeling, Booth, O’Shea, and Tomer (2017) discussed how sexual assault within the United States military has been a growing problem since the late 1990s and early 2000s. Servicewomen are at a high risk of being victims of sexual assault in nondeployed locations and the authors found that military leadership mediates this relationship. This, once again, shows that context within the military is important. Though outside the scope of their study, one aspect to further this would be to examine
sexual assault risk for servicewomen in deployed and nondeployed locations and to
determine if leadership is different in these areas. Perhaps servicewomen who are
deployed are actually under better leadership which makes their military experience safer
in terms of being less likely to be victims of sexual assault. Propensity score matching
can be used here to examine the impact of being deployed (treated) and nondeployed
(control) on sexual assault risk. In addition, one predictor, or one of the main observed
covariates, would be leadership type. This method would help to assess sexual assault
risk within the military.

As has been shown in research and current events, suicide among military
members is a major problem today (Bryan, Cerel, and Bryan 2017; Hom, Stanley,
Gutierrez, and Joiner Jr. 2017; O’Keefe and Reger 2017; Rosellini et al. 2017). Many of
the problems deal with not only mental illness and PTSD but how veterans are treated
once they return home from serving. Many veterans struggle to receive their military
benefits and oftentimes this process can take years. Because of this, military members
have been an at-risk group for suicide. Researchers interested in studying this issue can
use propensity score matching to examine those who have suicidal tendencies (treatment
group) to those who do not (control group) to examine the predictors of being at-risk for
suicide. For example, researchers would control for cognitive and social predictors prior
to entering the military in order to determine an already at-risk group. In other words,
individuals who may exhibit suicidal tendencies prior to serving. This type of research
would contribute to the growing literature on the military by addressing this problem, but
more importantly, this type of research would influence policy recommendations with
how to address the problem of suicide among veterans.
There are many areas of focus that researchers can use when examining the military. As has been consistently of interest to researchers who study the military are how the military affects PTSD, substance and alcohol use, and additional life outcomes like crime. Sexual assault within the military and suicide are issues that are being focused on current military members because it is being shown to be major problems for military members serving in the post 9/11 era. These are issues unique to the current group of military members, while for military members who served in WWII and the Vietnam War, sexual assault was not a common turning point in military service and the current research on the military is focusing more on suicide, indicating that current wars are directing veterans towards this kind of trajectory. Regardless of the issue being examined within the military, I strongly recommend researchers to use propensity score matching to conduct their analyses.

In addition to quantitative methodology, qualitative methodology would also be useful to studying the military. Laub and Sampson (2003) were able to connect with the men from their original sample, the ones who were originally part of Glueck and Glueck’s (1950) study. Laub and Sampson (2003) interviewed some of these men and they discussed how there were specific events within their lives that positively shifted their trajectories. For example, many men stated that it was the military that redirected their paths in a positive way. This example serves as a study that shows that qualitative work is needed within the field, especially when examining context and how life events within the military (i.e., turning points like combat) affects the trajectory of one’s life.
CONCLUSION

This dissertation can serve as an example of how to examine the new era of military members. As researchers have suggested, those currently serving or those who have served in the post 9/11 era may have had a unique experience. As researchers have found, there are life outcome differences between this group of military members compared to military members who have served in previous wars like WWII and the Vietnam War (MacLean and Elder Jr. 2007). There has been much research in examining how the military affects individuals but what the research is lacking is a comparable group of civilians to assess the treatment effect of military.

The main objective of this dissertation was to use life course theory to examine how the military may serve as a transition event that affects one’s crime trajectory. Specifically, this dissertation began with three main research questions:

1. How does the military serve as a transition event that leads to a trajectory of crime?
2. How do childhood predictors of crime vary by military status?
3. How does the military experience vary by race and how does it affect a trajectory of crime?

These questions have been answered throughout this dissertation. This dissertation shows that the military does serve as a transition event that decreases a trajectory of crime. In addition, as has been shown with life course, early patterns and behaviors predict later life patterns and behaviors. This dissertation has shown that childhood predictors of crime do not really vary by military status as there was only one different predictor of crime between military members and civilians. Lastly, this
dissertation has shown that military experience does not vary by race and that positive and negative military experiences do not set a trajectory of crime after joining the military. However, life course predictors, like adolescent crime, sets a trajectory of crime.

Although there were limitations to the dissertation, there were several contributions. First, this dissertation used a quasi-experimental method to examine the treatment effect of military on life outcomes, an aspect that is lacking within the current literature. Second, propensity score matching allowed me to test life course theory on crime. Childhood predictors and military status were important predictors of crime with military members committing fewer crimes than civilians. As was discussed, the military may serve as an outlet for individuals to exhibit deviant or criminal behavior, similar to the literature on catharsis, where civilians do not have this outlet. In addition, life course theory was also supported because early patterns predicted later behaviors, as with the discussion of having a history of delinquency in adolescence being the strongest predictor of later life crime. Third, using life course theory, this dissertation echoed the current literature on the ambiguity of military experiences and the impact of race on a trajectory of crime.

This dissertation contributes to the field of life course, military, race, and crime. There are several areas of interest that surround the military and this dissertation moves this literature forward by allowing for detailed comparisons between civilians and military members and for contextual experiences in the military to be examined. Military members face many hardships upon returning home, and the suggestions in this dissertation and how to study these issues could improve military relations and influence policy decisions.
REFERENCES


APPENDICES
APPENDIX A

DESCRIPTION OF ALL VARIABLES INCLUDING ORIGINAL VARIABLES FROM THE NATIONAL LONGITUDINAL SURVEY OF YOUTH AND HOW VARIABLES WERE RECODED

1. Military (2000 – 2014)\(^1\)
   Constructed Variable: Was R in the military at the date of interview?
   0 = Not in the military
   1 = In the active forces
   2 = In the guards/reserves
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Non-Military (0)
   1 = Military (in the active forces, in the guards/reserved) (1 – 2) (reference category)
   -1, -2, -7 = Missing

2. Sex of Child
   1 = Male
   2 = Female
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Female (2)
   1 = Male (1) (reference category)
   -1, -2, -7 = Missing

   Variable manually created by adding Race of R – White and Race of R – Black or African American together
   i. Race of R – White
      Which of these groups best describes you? Are you….
      Response Choice: “White”

\(^1\) Indicates the years in which data were used.
ii. Race of R – Black or African American
   Which of these groups best describes you? Are you…
   Response Choice: “Black of African American”
   0 = Not selected
   1 = Selected
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing

   Recoded:
   0 = Black
   1 = White (reference category)
   -1, -2, -7 = Missing

   Date of Birth = Year
   2014 – Birth Year = Age in 2014
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Variable manually created by subtracting the last year of data (2014) from R’s year of birth
   Range = 18 – 44
   3 – 17 = Missing and dropped

   Official Marital Status
   0 = Never married
   1 = Married
   2 = Separated
   3 = Divorced
   6 = Widowed
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Never married (0)
   1 = Married (1)
   2 = Separated, divorced, widowed (2 - 6)
   -1, -2, -7 = Missing
   Variable was recoded again into dummy variables (Never married being the reference
What is the highest level of schooling that your father ever completed?
1 = Did not finish high school
2 = High school
3 = Some college
4 = Associate’s degree
5 = Bachelor’s degree
6 = Master’s degree
7 = Ph.D.
8 = J.D.
9 = M.D.
-1 = Refusal
-2 = Don’t know
-3 = Invalid skip
-7 = Missing
9990 = Missing
Recode:
0 = Did not finish high school (1)
1 = High school (2)
2 = Some college (3)
3 = Associate’s degree (4)
4 = Bachelor’s degree (5)
5 = Master’s degree, Ph.D., J.D., M.D. (6 – 9)
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (Some college being the reference category)

7. Dad’s Job When R Was 16 Years Old or 17 Years Old (2000 – 2014)
Occupation of father at longest job (previous year)
Census code for occupation - Employer
10 - 430 = Executive, administrative, and managerial occupations
500 - 950 = Management related occupations
1000 - 1240 = Mathematical and computer scientists
1300 - 1560 = Engineers, architects, surveyors, engineering and related technicians
1600 - 1760 = Physical scientists
1800 - 1860 = Social scientists and related workers
2000 - 2060 = Counselors, social and religious workers
2100 - 2150 = Lawyers, judges and legal support workers
2200 - 2350 = Teachers
2600 - 2760 = Entertainers and performers, sports and related workers
2800 - 2960 = Media and communications workers
3000 - 3260 = Health diagnosing and treating practitioners
3300 - 3650 = Health care technical and support occupations
3700 - 3950 = Protective service occupations
4000 - 4160 = Food preparation and serving related occupations
4200 - 4250 = Cleaning and building service occupations
4300 - 4430 = Entertainment attendants and related workers
4500 - 4650 = Personal care and service workers
4700 - 4960 = Sales and related workers
5000 - 5930 = Office and administrative support workers
6000 - 6130 = Farming, fishing and forestry occupations
6200 - 6940 = Construction trade and extraction workers
7000 - 7620 = Installation, maintenance and repair workers
7700 - 7750 = Production and operating workers
7800 - 7850 = Food preparation occupations
7900 - 8960 = Setters, operators and tenders
9000 - 9750 = Transportation and material moving workers
9800 - 9830 = Military specific occupations
9840 = Military
9950 = Not in labor force
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recode:
1 = Executive, administrative, and managerial occupations (10 – 430)
2 = Management related occupations (500 – 950)
3 = Mathematical and computer scientists (1000 – 1240)
4 = Engineers, architects, surveyors, engineering and related technicians (1300 – 1560)
5 = Physical scientists (1600 – 1760)
6 = Counselors, social and religious workers (2000 – 2060)
7 = Lawyers, judges, and legal support workers (2100 – 2150)
8 = Teachers (2200 – 2350)
9 = Entertainers and performers, sports and related workers (2600 – 2760)
10 = Media and communications workers (2800 – 2960)
11 = Health diagnosing and treating practitioners (3000 – 3260)
12 = Health care technical and support occupations (3300 – 3650)
13 = Protective service occupations (3700 – 3950)
14 = Food preparation and serving related occupations (4000 – 4160)
15 = Cleaning and building service occupations (4200 – 4250)
16 = Entertainment attendants and related workers (4300 – 4430)
17 = Personal care and service workers (4500 – 4650)
18 = Sales and related workers (4700 – 4960)
19 = Office and administrative support workers (5000 – 5930)
20 = Farming, fishing and forestry occupations (6000 – 6130)
21 = Construction trade and extraction workers (6200 – 6940)
22 = Installation, maintenance and repair workers (7000 – 7620)
23 = Production and operating workers (7700 – 7750)
24 = Food preparation occupations (7800 – 7850)
25 = Setters, operators and tenders (7900 – 8960)
26 = Transportation and material moving workers (9000 – 9830)
27 = Military specific occupations (9800 – 9830, 9840)
28 = Social scientists and related workers (1800 – 1860)
29 = Life, physical and social science technicians (1900 – 1960)
30 = Not in the labor force (9950)
-1, -2, -7 = Missing
Recoded again:
0 = Not in the labor force (30)
1 = Scientists, engineers, lawyers, architects, health (3 – 5, 7, 11 – 12, 28 – 29)
2 = Counselors, teachers (6, 8)
3 = Protective, military (13, 27)
4 = Entertainment, media (9 – 10, 16)
5 = Food preparation, cleaning, service workers (14 – 15, 17, 24)
6 = Sales, office and administrative workers (1 – 2, 18 – 19)
7 = Farming, fishing, forestry, setters, tenders (20, 25)
8 = Construction, transportation, movers, repair (21 – 23, 26)
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (Food preparation, cleaning, service workers being the reference category)
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2000, then a variable was created to assess their father’s occupation in 1999.

8. Living Location When R Was 16 Years Old or 17 Years Old (2000 – 2014)
Is R’s in urban or rural residence?
0 = Rural
1 = Urban
2 = Unknown
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Unknown (2)
1 = Rural (0)
2 = Urban (1)
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (Rural being the reference category)
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 16 years old in 2008, then a variable was created to assess their self-esteem in 2008.

9. Number of Household Members When R Was 16 Years Old or 17 Years Old (2000 – 2014)
Number of people living in HH (household) of R - Constructed
0
1
10 to 999: 10+
-1 = Refusal
-2 = Don’t know
-3 = Invalid skip
-7 = Missing
Recoded:
0 – 2 = 2
3 = 3
4 = 4
5 = 5
6 = 6
7 – 10 to 999 = 7
-1, -2, -3, -7 = Missing
Recoded again:
0 – 2 = 0
3 – 4 = 1
5 – 6 = 2
7 – 10 to 999 = 3
Missing
Variable was recoded again into dummy variables (3 – 4 being the reference category)
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2000, then a variable was created to assess the number of people living in their household in 2000.

10. Living Residence When R Was 16 Years Old or 17 Years Old (2000 – 2014)
Type of residence R lives in – Constructed
1 = Open bay or troop barracks, aboard ship
2 = Bachelor enlisted or officer quarters
3 = Dormitory, fraternity or sorority
4 = Hospital
5 = Jail
6 = Other temporary individual quarters (specify)
11 = Own dwelling unit
12 = On-base military family housing
13 = Off-base military family housing
15 = Convent, monastery, other religious institute
16 = Other individual quarters (specify)
19 = Respondent in parent’s household (both parents present)
20 = Respondent in mother’s household
21 = Respondent in father’s household
22 = Respondent in other relative’s household
23 = Joint custody arrangement
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Respondent in parent’s household (both parents present) (19)
1 = Respondent in mother’s household (20)
2 = Respondent in father’s household (21)
3 = Respondent in other relative’s household (22)
4 = Other (1 – 6, 11 – 16, 23)
-1, -2, -7 = Missing

Variable was recoded again into dummy variables (Respondent in mother’s household being the reference category)
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 16 years old in 2006, then a variable was created to assess where the respondent was living in 2006.

11. Region R Was Living In When R Was 16 Years Old or 17 Years Old (2000 – 2014)
Region in which R is living – Constructed
1 = Northeast
2 = North Central
3 = South
4 = West
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
1 = Northeast
2 = North Central
3 = South
4 = West
-1, -2, -7 = Missing

Variable was recoded again into dummy variables (South being the reference category)
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2004, then a variable was created to assess which region the respondent was living in 2004.

12. Type of High School Program (2000 – 2014)
Do you feel that your high school program (is/was) largely vocational, commercial, college preparatory, a general program, or some kind of specialized program?
1 = Vocational  
2 = Commercial  
3 = College preparatory  
4 = General program  
5 = Other specialized program, i.e., fine arts (specify)  
-1 = Refusal  
-2 = Don’t know  
-7 = Missing  
Recode:  
1 = Vocational  
2 = Commercial  
3 = College preparatory  
4 = General program  
5 = Other specialized program, i.e., fine arts (specify)  
-1, -2, -7 = Missing  
Variable was recoded again into dummy variables (General program being the reference category)

13. Average Grade In Classes In Last Year of High School (2000 – 2014)  
What was the average grade you got in your classes in your last year of high school?  
1 = A  
2 = A-  
3 = B+  
4 = B  
5 = B-  
6 = C+  
7 = C  
8 = C-  
9 = D+  
10 = D  
11 = D-  
12 = E or F  
-1 = Refusal  
-2 = Don’t know  
-7 = Missing  
Recode:  
0 = E or F (12)  
1 = D+/D- (D+, D, D-) (9 – 11)  
2 = C+/C- (C+, C, C-) (6 – 8)  
3 = B+/B- (B+, B, B-) (3 – 5)  
4 = A/A- (A, A-) (1 – 2)  
-1, -2, -7 = Missing  
Variable was recoded again into dummy variables (B+/B- being the reference category)

Highest academic degree received by respondent as of the [(2012) (2014)] interview
0 = No degree
1 = GED
2 = High school diploma
3 = Associate’s degree
4 = Bachelor of arts
5 = Bachelor of science
6 = Master’s degree
7 = Ph.D.
8 = Professional degree (eg, MD, LLD, DDS)
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No degree (0)
1 = GED or High school diploma (1 – 2)
3 = Associate’s degree (3)
4 = Bachelor of Arts or Bachelor of Science (4 – 5)
5 = Master’s degree, Ph.D., Professional degree ((eg, MD, LLD, DDS) (6 – 8)
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (GED or High school diploma being the reference category)

15. Child Is Impulsive Or Acts Without Thinking at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child is impulsive or acts without thinking
[Child first name] …is impulsive, or acts without thinking.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 13 years old in 2000, then a variable was created to assess their mother’s response to whether the respondent was impulsive at age 13 in 2000.

16. Child Has Trouble Getting Along With Other Children at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Has Trouble Getting Along With Other Children
[Child first name] …has trouble getting along with other children.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2002, then a variable was created to assess their mother’s response to whether the respondent had trouble getting along with other children at age 14 in 2002.

17. Child Is Not Liked By Other Children at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Is Not Liked By Other Children
[Child first name] …is not liked by other children.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 1998, then a variable was created to assess their mother’s response to whether the respondent was not liked by other children at age 14 in 1998.

18. Child Hangs Around With Kids Who Get Into Trouble at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Hangs Around With Kids Who Get Into Trouble
[Child first name] …hangs around with kids who get into trouble.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 13 years old in 2004, then a variable was created to assess their mother’s response to whether the respondent hung around with kids who got into trouble at age 13 in 2004.

19. Child Breaks Own Or Another's Things Deliberately at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Breaks Own Or Another's Things Deliberately
[Child first name] …breaks things on purpose or deliberately destroys [his/her] own or another’s things.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 13 years old in 1994, then a variable was created to assess their mother’s response to whether the respondent broke things deliberately at age 13 in 1994.

20. Child Argues Too Much at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Argues Too Much
[Child first name] …argues too much.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 1990, then a variable was created to assess their mother’s response to whether the respondent argued too much at age 14 in 1990.

21. Child Bullies Or Is Cruel/Mean To Others at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Bullies Or Is Cruel/Mean To Others
Child first name] ...bullies or is cruel or mean to others.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 1986, then a variable was created to assess their mother’s response to whether the respondent bullied or was cruel/mean to others at age 14 in 1986.

22. Child Has Strong Temper and Loses it Easily at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Has Strong Temper and Loses it Easily
[Child first name] ...has a very strong temper and loses it easily.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 13 years old in 2008, then a variable was created to assess their mother’s response to whether the respondent had a strong temper at age 13 in 2008.

23. Life With No Danger In It Would Be Too Dull For Child at 13 Years Old or 14 Years Old (1994 – 2014)
Child self-admin: Life with no danger in it would be too dull for me
1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 1998, then a variable was created to assess whether they agreed or disagreed with this statement at age 14 in 1998.

24. Damage School Property On Purpose at 13 Years Old or 14 Years Old (1988 – 2014)
Child self-admin: How often in last year damaged school property on purpose
0 = Never
1 = Once
2 = Twice
3 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never
1 = Once
2 = Twice
3 = More than twice
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (Never being the reference category)
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2008, then a variable was created to assess how often they damaged school property on purpose at age 14 in 2008.

25. Life With No Danger In It Would Be Too Dull For Me at 16 Years Old or 17 Years Old (1994 – 2014)
Agreement with statement – Life with no danger in it would be too dull for me
1 = Strongly disagree
2 = Disagree
3 = Agree
4 = Strongly agree
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Disagree (disagree, strongly disagree) (1 – 2)
1 = Agree (agree, strongly agree) (3 – 4) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2012, then a variable was created to assess whether they agreed or disagreed
with this statement at age 17 in 2012.

26. Self-Esteem at 16 Years Old or 17 Years Old (On the whole, I am satisfied with myself) (2000 – 2014)
   1 = Strongly disagree
   2 = Disagree
   3 = Agree
   4 = Strongly agree
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Disagree (disagree, strongly disagree) (1 – 2)
   1 = Agree (agree, strongly agree) (3 – 4) (reference category)
   -1, -2, -7 = Missing

   To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 16 years old in 2010, then a variable was created to assess whether they agreed or disagreed with this statement at age 16 in 2010.

27. Physical Aggression at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (Hit or Fight 14-17)
   This variable was created by adding the following two variables together. If the respondent had answered that they had been in a fight in the past year or if they have hit or threatened to hit someone in the past year, then they were marked as ‘yes.’ For those who answered ‘yes’ for hit or fight when they were 14, 15, 16, or 17 they were marked as ‘yes.’ For those who answered ‘no’ for hit or fight when they were 14, 15, 16, or 17 they were marked as ‘no.’ To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2000, then a variable was created to assess whether or not they had been in a fight at school or work in the past year.

   i. In last year R ever gotten into a physical fight at school or work (1994 – 2014)
   In the last year (last 12 months), have you ever gotten into a physical fight at school or work?
   0 = No
   1 = Yes
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = No
   1 = Yes
   -1, -2, -7 = Missing

   ii. In last year R ever hit or seriously threatened to hit someone (1994 – 2014)
In the last year (last 12 months), have you ever hit or seriously threatened to hit someone?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing

Final Physical Aggression at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old Variable:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing

R has used which school services in high school – job fairs with employers or military
(Did/Have you [use/used] any of the following school services in high school?)
…Job fair where employers or the military describe available jobs.
1 = I have used
2 = I have not used
3 = School does not offer
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
1 = I have used
2 = I have not used
3 = School does not offer
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (‘I have not used’ being the reference category)

29. Adult Household Member Sent to Jail/Prison Since R Was 10 (2006 – 2014)
Has an adult member of R’s household been sent to jail or prison since R was 10 years old?
Since you were ten years old, has an adult member of your household (other than yourself), that is someone who was living in the same household as you at the time, been sent to jail or prison?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing
APPENDIX B

Descriptive Statistics of All Variables Before Imputation

<table>
<thead>
<tr>
<th>Static Factors</th>
<th>All (N = 8201)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Military</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>96.0% (n = 7870)</td>
</tr>
<tr>
<td>Yes</td>
<td>4.0% (n = 331)</td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>49.0% (n = 4020)</td>
</tr>
<tr>
<td>Male</td>
<td>51.0% (n = 4181)</td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 0)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>19.3% (n = 1582)</td>
</tr>
<tr>
<td>White</td>
<td>39.2% (n = 3213)</td>
</tr>
<tr>
<td>Missing</td>
<td>41.5% (n = 3406)</td>
</tr>
<tr>
<td><strong>Age (18 – 44) (mean)</strong></td>
<td></td>
</tr>
<tr>
<td>Valid</td>
<td>28.46 (SD = 5.416)</td>
</tr>
<tr>
<td>Missing</td>
<td>95.3% (n = 7818)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>69.2% (n = 5679)</td>
</tr>
<tr>
<td>Married</td>
<td>20.2% (n = 1660)</td>
</tr>
<tr>
<td>Separated, Divorced, Widowed</td>
<td>10.5% (n = 861)</td>
</tr>
<tr>
<td>Missing</td>
<td>0.0% (n = 1)</td>
</tr>
<tr>
<td><strong>Dad's Level of Education</strong></td>
<td></td>
</tr>
<tr>
<td>Did Not Finish High School</td>
<td>5.6% (n = 463)</td>
</tr>
<tr>
<td>High School</td>
<td>16.1% (n = 1318)</td>
</tr>
<tr>
<td>Some College</td>
<td>5.0% (n = 413)</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>1.4% (n = 114)</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>3.3% (n = 271)</td>
</tr>
<tr>
<td>Master's Degree, Ph.D., J.D., M.D.</td>
<td>1.5% (n = 127)</td>
</tr>
<tr>
<td>Missing</td>
<td>67.0% (n = 5495)</td>
</tr>
<tr>
<td><strong>Dad's Job When R Was 16-17</strong></td>
<td></td>
</tr>
<tr>
<td>Not in Labor Force</td>
<td>0.0% (n = 4)</td>
</tr>
<tr>
<td>Scientists, Engineers, Lawyers, Architects, Health</td>
<td>1.8% (n = 151)</td>
</tr>
<tr>
<td>Counselors, Teachers</td>
<td>1.0% (n = 81)</td>
</tr>
<tr>
<td>Protective, Military</td>
<td>0.9% (n = 70)</td>
</tr>
<tr>
<td>Entertainment, Media</td>
<td>0.1% (n = 11)</td>
</tr>
<tr>
<td>Occupation</td>
<td>Percentage (n =)</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Food Prep, Cleaning, Service Workers</td>
<td>1.4% (n = 115)</td>
</tr>
<tr>
<td>Sales, Office and Administrative Workers</td>
<td>1.8% (n = 147)</td>
</tr>
<tr>
<td>Farming, Fishing, Forestry, Setters, Tenders</td>
<td>0.9% (n = 72)</td>
</tr>
<tr>
<td>Construction, Transportation, Movers, Repair</td>
<td>7.5% (n = 611)</td>
</tr>
<tr>
<td>Missing</td>
<td>84.6% (n = 6939)</td>
</tr>
</tbody>
</table>

**Living Location When R Was 16-17**

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>1.6% (n = 128)</td>
</tr>
<tr>
<td>Rural</td>
<td>43.4% (n = 3561)</td>
</tr>
<tr>
<td>Urban</td>
<td>15.2% (n = 1243)</td>
</tr>
<tr>
<td>Missing</td>
<td>39.9% (n = 3269)</td>
</tr>
</tbody>
</table>

**Number of Household Members When R Was 16-17**

<table>
<thead>
<tr>
<th>Number of Members</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>6.5% (n = 537)</td>
</tr>
<tr>
<td>3-4</td>
<td>35.3% (n = 2901)</td>
</tr>
<tr>
<td>5-6</td>
<td>15.4% (n = 1257)</td>
</tr>
<tr>
<td>7 or more</td>
<td>3.4% (n = 277)</td>
</tr>
<tr>
<td>Missing</td>
<td>39.4% (n = 3229)</td>
</tr>
</tbody>
</table>

**Living Residence When R Was 16-17**

<table>
<thead>
<tr>
<th>Residence</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent's Household (Both Parents)</td>
<td>30.8% (n = 2523)</td>
</tr>
<tr>
<td>Mother's Household</td>
<td>24.1% (n = 1974)</td>
</tr>
<tr>
<td>Father's Household</td>
<td>2.6% (n = 216)</td>
</tr>
<tr>
<td>Other Relative's Household</td>
<td>1.7% (n = 140)</td>
</tr>
<tr>
<td>Other</td>
<td>1.5% (n = 125)</td>
</tr>
<tr>
<td>Missing</td>
<td>39.3% (n = 3223)</td>
</tr>
</tbody>
</table>

**Region R Was Living In When R Was 16-17**

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>8.9% (n = 728)</td>
</tr>
<tr>
<td>North Central</td>
<td>15.6% (n = 1283)</td>
</tr>
<tr>
<td>South</td>
<td>23.6% (n = 1939)</td>
</tr>
<tr>
<td>West</td>
<td>12.0% (n = 987)</td>
</tr>
<tr>
<td>Missing</td>
<td>39.8% (n = 3264)</td>
</tr>
</tbody>
</table>

**Type of High School Program**

<table>
<thead>
<tr>
<th>Program</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational</td>
<td>4.9% (n = 404)</td>
</tr>
<tr>
<td>Commercial</td>
<td>1.1% (n = 88)</td>
</tr>
<tr>
<td>College Preparatory</td>
<td>26.4% (n = 2166)</td>
</tr>
<tr>
<td>General Program</td>
<td>41.2% (n = 3380)</td>
</tr>
<tr>
<td>Other Specialized Program</td>
<td>5.4% (n = 446)</td>
</tr>
<tr>
<td>Missing</td>
<td>20.9% (n = 1717)</td>
</tr>
</tbody>
</table>

**Average Grade In Classes In Last Year of High School**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/A</td>
<td>13.9% (n = 1143)</td>
</tr>
<tr>
<td>B+/B</td>
<td>36.6% (n = 3004)</td>
</tr>
<tr>
<td>C+/C</td>
<td>24.5% (n = 2013)</td>
</tr>
<tr>
<td>D+/D</td>
<td>3.3% (n = 267)</td>
</tr>
<tr>
<td>E or F</td>
<td>0.9% (n = 70)</td>
</tr>
<tr>
<td>Missing</td>
<td>20.8% (n = 1704)</td>
</tr>
</tbody>
</table>

**Highest Degree**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Percentage (n =)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Degree</td>
<td>12.0% (n = 983)</td>
</tr>
<tr>
<td>GED or High School Diploma</td>
<td>53.2% (n = 4366)</td>
</tr>
<tr>
<td>Associate's Degree</td>
<td>7.4% (n = 609)</td>
</tr>
<tr>
<td>Bachelor of Arts or Bachelor of Science</td>
<td>12.6% (n = 1033)</td>
</tr>
<tr>
<td>Master's Degree, Ph.D. Professional Degree</td>
<td>3.3% (n = 273)</td>
</tr>
<tr>
<td>Problem Statement</td>
<td>Not True</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Child Is Impulsive Or Acts Without Thinking</td>
<td>44.0% (n = 3611)</td>
</tr>
<tr>
<td>Child Has Trouble Getting Along With Other Children</td>
<td>68.2% (n = 5596)</td>
</tr>
<tr>
<td>Child Is Not Liked By Other Children</td>
<td>71.5% (n = 5861)</td>
</tr>
<tr>
<td>Child Hangs Around With Kids Who Get Into Trouble</td>
<td>66.7% (n = 5467)</td>
</tr>
<tr>
<td>Child Breaks Own Or Another's Things Deliberately</td>
<td>75.8% (n = 6218)</td>
</tr>
<tr>
<td>Child Argues Too Much</td>
<td>30.7% (n = 2514)</td>
</tr>
<tr>
<td>Child Bullies Or Is Cruel/Mean To Others</td>
<td>65.0% (n = 5330)</td>
</tr>
<tr>
<td>Child Has Strong Temper and Loses it Easily</td>
<td>51.8% (n = 4249)</td>
</tr>
</tbody>
</table>

**Life With No Danger In It Would Be Too Dull For Me**

<table>
<thead>
<tr>
<th>Age</th>
<th>Disagree</th>
<th>Agree</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-14</td>
<td>28.6% (n = 2344)</td>
<td>35.1% (n = 2876)</td>
<td>36.3% (n = 2981)</td>
</tr>
</tbody>
</table>

**Damage School Property On Purpose At 13-14**

<table>
<thead>
<tr>
<th>Action</th>
<th>Never</th>
<th>Once</th>
<th>Twice</th>
<th>More Than Twice</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>65.2% (n = 5351)</td>
<td>6.3% (n = 519)</td>
<td>1.7% (n = 143)</td>
<td>2.1% (n = 170)</td>
<td>24.6% (n = 2018)</td>
</tr>
</tbody>
</table>

**Life With No Danger In It Would Be Too Dull For Me**

<table>
<thead>
<tr>
<th>Age</th>
<th>Disagree</th>
<th>Agree</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-17</td>
<td>16.2% (n = 1330)</td>
<td>23.1% (n = 1895)</td>
<td>60.7% (n = 4976)</td>
</tr>
<tr>
<td>Physical Aggression (Hit or Fight 14-17)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>----------------------------------------</td>
<td></td>
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<tr>
<td>Disagree 2.8% (n = 229)</td>
<td></td>
<td></td>
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<tr>
<td>Agree 36.6% (n = 3001)</td>
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<td></td>
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<tr>
<td>Missing 60.6% (n = 4971)</td>
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</table>

| Used Job Fair With Employers Or Military While in High School |
| R Did Use 20.0% (n = 1643) |
| R Did Not Use 29.1% (n = 2386) |
| School Did Not Offer 3.2% (n = 264) |
| Missing 47.7% (n = 3908)         |

| Adult Household Member Sent to Jail/Prison Since R Was 10 |
| No 80.9% (n = 6634) |
| Yes 16.6% (n = 1359) |
| Missing 2.5% (n = 208) |
### APPENDIX C

**Combined Results From Twenty Logistic Regression Analyses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficients</th>
<th>Std. Error</th>
<th>Significance Level</th>
<th>95% Confidence Intervals</th>
<th>Fraction Missing Information</th>
<th>Relative Increase Variance</th>
<th>Relative Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.462</td>
<td>.147</td>
<td>.000</td>
<td>3.237 - 5.751</td>
<td>.044</td>
<td>.046</td>
<td>.998</td>
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<tr>
<td>White</td>
<td>-.250</td>
<td>.173</td>
<td>.150</td>
<td>.553 - 1.097</td>
<td>.442</td>
<td>.759</td>
<td>.978</td>
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<tr>
<td>Physical Aggression (Hit or Fight 14-17)</td>
<td>.228</td>
<td>.182</td>
<td>.213</td>
<td>.875 - 1.803</td>
<td>.489</td>
<td>.911</td>
<td>.976</td>
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<tr>
<td>Adult Household Member Sent to Jail/Prison Since R Was 10</td>
<td>-.215</td>
<td>.177</td>
<td>.225</td>
<td>.570 - 1.142</td>
<td>.059</td>
<td>.062</td>
<td>.997</td>
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<tr>
<td>Age (18 – 44)</td>
<td>-.026</td>
<td>.016</td>
<td>.098</td>
<td>.944 - 1.005</td>
<td>.156</td>
<td>.182</td>
<td>.992</td>
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<td>Life With No Danger In It Would Be Too Dull For Me [Child] (13-14)</td>
<td>.091</td>
<td>.159</td>
<td>.567</td>
<td>.800 - 1.501</td>
<td>.377</td>
<td>.582</td>
<td>.982</td>
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<td>Variable</td>
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<td>Std. Error</td>
<td>Significance Level</td>
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<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
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<tr>
<td>Life With No Danger In It Would Be Too Dull For Me (16-17)</td>
<td>.143</td>
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<td>.378</td>
<td>.838</td>
<td>1.587</td>
<td>.380</td>
<td>.590</td>
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<td>Married</td>
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<td>4.172</td>
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<td>.041</td>
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<td>Separated, Divorced, Widowed</td>
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<td>8.157</td>
<td>.050</td>
<td>.052</td>
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<td>Dad Job= Not in Labor Force</td>
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<td>.842</td>
<td>.531</td>
<td>.315</td>
<td>9.175</td>
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<td>1.395</td>
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<td>Dad Job= Scientists, Engineers, Lawyers, Architects, Health</td>
<td>.369</td>
<td>.484</td>
<td>.449</td>
<td>.549</td>
<td>3.811</td>
<td>.598</td>
<td>1.405</td>
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<td>Dad Job= Counselors, Teachers</td>
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<td>.675</td>
<td>.463</td>
<td>3.243</td>
<td>.664</td>
<td>1.853</td>
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<tr>
<td>Dad Job= Protective, Military</td>
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<td>.696</td>
<td>.493</td>
<td>2.856</td>
<td>.683</td>
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<td>Dad Job = Entertainment, Media</td>
<td>.048</td>
<td>.315</td>
<td>.879</td>
<td>.561</td>
<td>1.962</td>
<td>.473</td>
<td>.856</td>
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<td>Dad Job = Sales, Office and Administrative Workers</td>
<td>-.138</td>
<td>.289</td>
<td>.634</td>
<td>.490</td>
<td>1.548</td>
<td>.469</td>
<td>.844</td>
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<td>Variable</td>
<td>Estimated Coefficients</td>
<td>Std. Error</td>
<td>Significance Level</td>
<td>95% Confidence Intervals</td>
<td>Fraction Missing Information</td>
<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
</tr>
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</tr>
<tr>
<td>Dad Job = Farming, Fishing, Forestry, Setters, Tenders</td>
<td>-0.038</td>
<td>0.287</td>
<td>0.895</td>
<td>0.545 1.702</td>
<td>0.452</td>
<td>0.787</td>
<td>0.978</td>
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<tr>
<td>Dad Job = Construction, Transportation, Movers, Repair</td>
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<td>0.304</td>
<td>0.992</td>
<td>0.543 1.832</td>
<td>0.565</td>
<td>1.228</td>
<td>0.973</td>
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<td>Self-Esteem at 16-17 (On the whole, I am satisfied with myself)</td>
<td>0.025</td>
<td>0.310</td>
<td>0.936</td>
<td>0.553 1.900</td>
<td>0.502</td>
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<td>0.976</td>
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<tr>
<td>Living Location = Unknown</td>
<td>-0.024</td>
<td>0.394</td>
<td>0.951</td>
<td>0.448 2.123</td>
<td>0.324</td>
<td>0.464</td>
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<td>Living Location = Urban</td>
<td>-0.195</td>
<td>0.180</td>
<td>0.283</td>
<td>0.575 1.178</td>
<td>0.453</td>
<td>0.791</td>
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<tr>
<td>Living Residence = Parent's Household (Both Parents)</td>
<td>-0.161</td>
<td>0.181</td>
<td>0.375</td>
<td>0.594 1.219</td>
<td>0.432</td>
<td>0.729</td>
<td>0.979</td>
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<tr>
<td>Living Residence = Father's Household</td>
<td>0.042</td>
<td>0.262</td>
<td>0.873</td>
<td>0.619 1.756</td>
<td>0.471</td>
<td>0.851</td>
<td>0.977</td>
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<td>Estimated Coefficients</td>
<td>Std. Error</td>
<td>Significance Level</td>
<td>95% Confidence Intervals</td>
<td>Fraction Missing Information</td>
<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
</tr>
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</tr>
<tr>
<td>Living Residence = Other Relative's Household</td>
<td>-0.286</td>
<td>0.554</td>
<td>0.607</td>
<td>0.251</td>
<td>2.251</td>
<td>0.422</td>
<td>0.701</td>
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<td>Living Residence = Other</td>
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<td>0.473</td>
<td>0.196</td>
<td>2.131</td>
<td>0.028</td>
<td>0.028</td>
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<tr>
<td>Region = Northeast</td>
<td>0.099</td>
<td>0.249</td>
<td>0.692</td>
<td>0.675</td>
<td>1.806</td>
<td>0.382</td>
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<td>Region = North Central</td>
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<td>0.190</td>
<td>0.540</td>
<td>0.611</td>
<td>1.296</td>
<td>0.383</td>
<td>0.596</td>
</tr>
<tr>
<td>Region = West</td>
<td>0.146</td>
<td>0.207</td>
<td>0.483</td>
<td>0.767</td>
<td>1.745</td>
<td>0.431</td>
<td>0.725</td>
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<tr>
<td>School Type = Vocational</td>
<td>-0.209</td>
<td>0.298</td>
<td>0.483</td>
<td>0.453</td>
<td>1.454</td>
<td>0.099</td>
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<td>School Type = Commercial</td>
<td>0.105</td>
<td>0.397</td>
<td>0.792</td>
<td>0.505</td>
<td>2.442</td>
<td>0.463</td>
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<td>School Type = College Preparatory</td>
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<td>0.143</td>
<td>0.843</td>
<td>0.776</td>
<td>1.363</td>
<td>0.152</td>
<td>0.177</td>
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<td>School Type = Other</td>
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<td>0.309</td>
<td>0.363</td>
<td>1.381</td>
<td>0.377</td>
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<td>R Used Job Fair</td>
<td>0.638</td>
<td>0.169</td>
<td>0.000</td>
<td>1.351</td>
<td>2.652</td>
<td>0.507</td>
<td>0.980</td>
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<tr>
<td>School Did Not Offer Job Fair</td>
<td>-0.776</td>
<td>0.525</td>
<td>0.143</td>
<td>0.162</td>
<td>1.305</td>
<td>0.471</td>
<td>0.850</td>
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<tr>
<td>Variable</td>
<td>Estimated Coefficients</td>
<td>Std. Error</td>
<td>Significance Level</td>
<td>95% Confidence Intervals</td>
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<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
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<td>Highest Degree = No Degree</td>
<td>-2.093</td>
<td>.574</td>
<td>.000</td>
<td>.040 .384</td>
<td>.380</td>
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<td>.981</td>
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<td>Highest Degree = Associate’s Degree</td>
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<td>.190</td>
<td>.008</td>
<td>1.139 2.400</td>
<td>.196</td>
<td>.239</td>
<td>.990</td>
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<tr>
<td>Highest Degree = Bachelor of Arts or Bachelor of Science</td>
<td>.167</td>
<td>.196</td>
<td>.394</td>
<td>.805 1.735</td>
<td>.196</td>
<td>.238</td>
<td>.990</td>
</tr>
<tr>
<td>Highest Degree = Master's Degree, Ph.D. Professional Degree (M.D., LLD, DDS)</td>
<td>-.086</td>
<td>.384</td>
<td>.823</td>
<td>.432 1.949</td>
<td>.140</td>
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<td>Dad’s Education = Did Not Finish High School</td>
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<td>.606 1.768</td>
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<td>.698 1.509</td>
<td>.361</td>
<td>.545</td>
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<td>Dad’s Education = Associate’s Degree</td>
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<td>.525 1.524</td>
<td>.418</td>
<td>.690</td>
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<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
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<td>Dad's Education = Bachelor's Degree</td>
<td>-0.032</td>
<td>0.376</td>
<td>0.931</td>
<td>0.456</td>
<td>2.055</td>
<td>0.585</td>
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<td>Dad's Education = Master's Degree, Ph.D., J.D., M.D.</td>
<td>-0.173</td>
<td>0.476</td>
<td>0.716</td>
<td>0.329</td>
<td>2.146</td>
<td>0.289</td>
<td>0.394</td>
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<tr>
<td>Average Grade In Classes In Last Year of High School = A/A-</td>
<td>-0.154</td>
<td>0.225</td>
<td>0.494</td>
<td>0.551</td>
<td>1.335</td>
<td>0.292</td>
<td>0.401</td>
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<tr>
<td>Average Grade In Classes In Last Year of High School = C+/C-</td>
<td>-0.061</td>
<td>0.162</td>
<td>0.707</td>
<td>0.684</td>
<td>1.294</td>
<td>0.304</td>
<td>0.423</td>
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<tr>
<td>Average Grade In Classes In Last Year of High School = D+/D-</td>
<td>-0.635</td>
<td>0.399</td>
<td>0.113</td>
<td>0.241</td>
<td>1.164</td>
<td>0.300</td>
<td>0.416</td>
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<td>Average Grade In Classes In Last Year of High School = E or F</td>
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<td>1.025</td>
<td>0.383</td>
<td>0.055</td>
<td>3.052</td>
<td>0.079</td>
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<td>Child Is Impulsive Or Acts Without Thinking</td>
<td>0.164</td>
<td>0.149</td>
<td>0.273</td>
<td>0.879</td>
<td>1.580</td>
<td>0.172</td>
<td>0.205</td>
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<td>Std. Error</td>
<td>Significance Level</td>
<td>95% Confidence Intervals</td>
<td>Fraction Missing Information</td>
<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
</tr>
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<tr>
<td>Child Has Trouble Getting Along With Other Children</td>
<td>-.097</td>
<td>.216</td>
<td>.653</td>
<td>.592</td>
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<td>.347</td>
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<td>Child Is Not Liked By Other Children</td>
<td>-.024</td>
<td>.209</td>
<td>.910</td>
<td>.647</td>
<td>1.474</td>
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<td>.374</td>
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<td>Child Hangs Around With Kids Who Get Into Trouble</td>
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<td>.246</td>
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<td>Child Breaks Own Or Another's Things Deliberately</td>
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<td>.253</td>
<td>.582</td>
<td>.527</td>
<td>1.434</td>
<td>.385</td>
<td>.603</td>
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<td>Child Argues Too Much</td>
<td>-.024</td>
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<td>.879</td>
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<td>1.337</td>
<td>.179</td>
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<td>Child Bullies Or Is Cruel/Mean To Others</td>
<td>.221</td>
<td>.166</td>
<td>.182</td>
<td>.901</td>
<td>1.727</td>
<td>.152</td>
<td>.176</td>
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<tr>
<td>Child Has Strong Temper and Loses it Easily</td>
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<td>.159</td>
<td>.712</td>
<td>.690</td>
<td>1.289</td>
<td>.220</td>
<td>.275</td>
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<td>Relative Increase Variance</td>
<td>Relative Efficiency</td>
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<td>Number of Household Members When R Was 16-17 = 0 – 2</td>
<td>.024</td>
<td>.248</td>
<td>.922</td>
<td>.627</td>
<td>1.675</td>
<td>.410</td>
<td>.668</td>
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<td>Number of Household Members When R Was 16-17 = 5 – 6</td>
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<td>.178</td>
<td>.382</td>
<td>.602</td>
<td>1.216</td>
<td>.384</td>
<td>.600</td>
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<td>Number of Household Members When R Was 16-17 = 7 – 13</td>
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<td>.541</td>
<td>.168</td>
<td>.162</td>
<td>1.377</td>
<td>.353</td>
<td>.526</td>
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<tr>
<td>Damage School Property On Purpose At 13-14 = Once</td>
<td>.225</td>
<td>.179</td>
<td>.209</td>
<td>.881</td>
<td>1.780</td>
<td>.249</td>
<td>.323</td>
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<tr>
<td>Damage School Property On Purpose At 13-14 = Twice</td>
<td>-.541</td>
<td>.535</td>
<td>.313</td>
<td>.204</td>
<td>1.666</td>
<td>.211</td>
<td>.262</td>
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<tr>
<td>Damage School Property On Purpose At 13-14 = More Than Twice</td>
<td>-.655</td>
<td>.530</td>
<td>.216</td>
<td>.184</td>
<td>1.468</td>
<td>.017</td>
<td>.017</td>
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<td>Intercept</td>
<td>-4.063</td>
<td>.625</td>
<td>.000</td>
<td>.005</td>
<td>.059</td>
<td>.277</td>
<td>.372</td>
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APPENDIX D

DESCRIPTION OF ALL VARIABLES USED IN CHAPTER THREE:

ORIGINAL VARIABLES FROM THE NATIONAL LONGITUDINAL SURVEY OF YOUTH AND HOW VARIABLES WERE RECODED

   Constructed Variable: Was R in the military at the date of interview?
   0 = Not in the military
   1 = In the active forces
   2 = In the guards/reserves
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Non-Military (0)
   1 = Military (in the active forces, in the guards/reserved) (1 – 2) (reference category)
   -1, -2, -7 = Missing

2. Sex of Child
   1 = Male
   2 = Female
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Female (2)
   1 = Male (1) (reference category)
   -1, -2, -7 = Missing

3. Race of Child (Mother’s Racial/Ethnic Cohort from Screener)
   Child race/ethnicity is based on the report of the mother.
   1 = Hispanic
   2 = Black

---

1 Description of variables includes missing data. Variables were recoded prior to imputation as was discussed in Chapter Two. Therefore, values were imputed for variables that had missing data.
2 Indicates the years in which data were used.
3 = Non-Black, Non-Hispanic
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Black (2)
1 = Non-Black (1, 3) (reference category)
-1, -2, -7 = Missing

Date of Birth = Year
2014 – Birth Year = Age in 2014
-1 = Refusal
-2 = Don’t know
-7 = Missing
Variable manually created by subtracting the last year of data (2014) from R’s year of birth
Range = 18 – 44
3 – 17 = Missing and dropped

Official Marital Status
0 = Never married
1 = Married
2 = Separated
3 = Divorced
6 = Widowed
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never married (0)
1 = Married (1)
2 = Separated, divorced, widowed (2 - 6)
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (Never married being the reference category)

6. Lifedull. Life With No Danger In It Would Be Too Dull For Me at 16 Years Old or 17 Years Old (1994 – 2014)
Agreement with statement – Life with no danger in it would be too dull for me
1 = Strongly disagree
2 = Disagree
3 = Agree
4 = Strongly agree
-1 = Refusal
Recoded:
0 = Disagree (disagree, strongly disagree) (1 – 2)
1 = Agree (agree, strongly agree) (3 – 4) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2012, then a variable was created to assess whether they agreed or disagreed with this statement at age 17 in 2012.

7. Along. Child Has Trouble Getting Along With Other Children at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Has Trouble Getting Along With Other Children
[Child first name] …has trouble getting along with other children.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2002, then a variable was created to assess their mother’s response to whether the respondent had trouble getting along with other children at age 14 in 2002.

8. Temper. Child Has Strong Temper and Loses it Easily at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Has Strong Temper and Loses it Easily
[Child first name] …has a very strong temper and loses it easily.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 13
years old in 2008, then a variable was created to assess their mother’s response to whether the respondent had a strong temper at age 13 in 2008.

Has an adult member of R’s household been sent to jail or prison since R was 10 years old?
Since you were ten years old, has an adult member of your household (other than yourself), that is someone who was living in the same household as you at the time, been sent to jail or prison?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing

10. Young Crime at 10 Years Old, 11 Years Old, 12 Years Old, 13 Years Old, 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (Young Crime 10-17)
This variable was created by adding the following six variables together. Each of the six variables are dichotomous and were added together in order to obtain a continuous variable to determine how many times the individual engaged in these behaviors as adolescents.

  i. Child Bullies Or Is Cruel/Mean To Others at 10 Years Old, 11 Years Old, 12 Years Old, and 13 Years Old (1986 – 2014)
Behavior Problems Index: Child Bullies Or Is Cruel/Mean To Others
[Child first name] …bullies or is cruel or mean to others.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 10 years old in 1986, then a variable was created to assess their mother’s response to whether the respondent bullied or was cruel/mean to others at age 10 in 1986.
ii. Child Breaks Own Or Another's Things Deliberately at 10 Years Old, 11 Years Old, 12 Years Old, and 13 Years Old (1986 – 2014)

Behavior Problems Index: Child Breaks Own Or Another's Things Deliberately
[Child first name] … breaks things on purpose or deliberately destroys [his/her] own or another’s things.

1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 11 years old in 1994, then a variable was created to assess their mother’s response to whether the respondent broke things deliberately at age 11 in 1994.

iii. Damage School Property On Purpose at 10 Years Old, 11 Years Old, 12 Years Old, and 13 Years Old (1988 – 2014)

Child self-admin: How often in last year damaged school property on purpose

0 = Never
1 = Once
2 = Twice
3 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Never (0)
1 = Once or more than once (1, 2, 3)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 12 years old in 2008, then a variable was created to assess how often they damaged school property on purpose in the past year at age 12 in 2008.

iv. In last year R ever gotten into a physical fight at school or work at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (1994 – 2014)

In the last year (last 12 months), have you ever gotten into a physical fight at school or work?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2012, then a variable was created to assess whether the respondent had gotten into a physical fight at school or work in the past year at age 14 in 2012.

v. In last year R ever hit or seriously threatened to hit someone at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (1994 – 2014)
In the last year (last 12 months), have you ever hit or seriously threatened to hit someone?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 15 years old in 2010, then a variable was created to assess whether the respondent had hit or seriously threatened to hit someone in the past year at age 15 in 2010.

vi. Have you ever in last year hurt someone enough to need doc? at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (1994 – 1998)
In the last year (last 12 months), have you ever hurt someone badly enough to need bandages or a doctor?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-3 = Invalid Skip
-7 = Missing
Recoded:
0 = No
1 = Yes
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 16 years old in 1998, then a variable was created to assess whether the respondent had hurt someone badly enough to see a doctor in the past year at age 16 in 1998.

How many times in last year R hurt someone badly enough to need bandages or doctor? at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (2002 – 2014)
In the last year, about how many times have you hurt someone badly enough to need bandages or a doctor?
1 = Never
2 = Once
3 = Twice
4 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never (1)
1 = Once or more than once (2, 3, 4)
-1, -2, -7 = Missing

To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2008, then a variable was created to assess whether the respondent had hurt someone badly enough to see a doctor in the past year at age 17 in 2008.

The final hurt variable was created by adding these two dichotomous variables together. In addition, the final young crime variable was created by adding these six variables together. Young crime is a continuous variable that indicates the number of times the respondent engaged in these behaviors (maximum crimes being 12).

11. Crime
This variable was created by adding the following variables together. Each variable has been coded to be dichotomous and because the year 2000 is missing for the hurt variable, there is a total of 23 possible crimes for 2000 or earlier. Had the respondent been 18 years old in the year 2000 or earlier, the number of crimes they have committed since 18 were added together. Additionally, had the respondent joined the military in the year 2000 or earlier, the number of crimes they had committed were added together as well. This was done for each possible wave. The number of crimes committed was divided by the number of possible crimes and a proportion was generated. The percentages for civilians and military members were then generated into one where a proportion is given if the respondent is a civilian or military member. Originally, this variable ranged from 0-.67 but was recoded to be between 0-.20 and more. This was done due to the rarity of
proportions being greater than .20 (only 31 total cases, or 4.84% of the sample had a proportion of crime committed greater than .20) and is based on .04 increments. This variable was coded to be on .04 increments because .04 was the next valid response of crimes committed after 0.

i. In last year R ever gotten into a physical fight at school or work (2000 – 2014)
In the last year (last 12 months), have you ever gotten into a physical fight at school or work?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing

ii. In last year R ever hit or seriously threatened to hit someone (2000 – 2014)
In the last year (last 12 months), have you ever hit or seriously threatened to hit someone?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing

iii. How many times in last year R hurt someone badly enough to need bandages or doctor? (2002 – 2014)
In the last year, about how many times have you hurt someone badly enough to need bandages or a doctor?
1 = Never
2 = Once
3 = Twice
4 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never (1)
1 = Once or more than once (2, 3, 4)
-1, -2, -7 = Missing
APPENDIX E

DESCRIPTION OF ALL VARIABLES USED IN CHAPTER FOUR:

ORIGINAL VARIABLES FROM THE NATIONAL LONGITUDINAL SURVEY OF YOUTH AND HOW VARIABLES WERE RECODED

   Constructed Variable: Was R in the military at the date of interview?
   0 = Not in the military
   1 = In the active forces
   2 = In the guards/reserves
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Non-Military (0)
   1 = Military (in the active forces, in the guards/reserved) (1 – 2) (reference category)
   -1, -2, -7 = Missing

2. Sex of Child
   1 = Male
   2 = Female
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing
   Recoded:
   0 = Female (2)
   1 = Male (1) (reference category)
   -1, -2, -7 = Missing

3. Race of Child (Mother’s Racial/Ethnic Cohort from Screener)
   Child race/ethnicity is based on the report of the mother.
   1 = Hispanic

¹ Description of variables includes missing data. Variables were recoded prior to imputation as was discussed in Chapter Two. Therefore, values were imputed for variables that had missing data. However, military specific variables were not used during imputation. Therefore, there are some cases with missing data.
² Indicates the years in which data were used.
2 = Black
3 = Non-Black, Non-Hispanic
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Black (2)
1 = Non-Black (1, 3) (reference category)
-1, -2, -7 = Missing

Date of Birth = Year
2014 – Birth Year = Age in 2014
-1 = Refusal
-2 = Don’t know
-7 = Missing
Variable manually created by subtracting the last year of data (2014) from R’s year of birth
Range = 18 – 44
3 – 17 = Missing and dropped

Official Marital Status
0 = Never married
1 = Married
2 = Separated
3 = Divorced
6 = Widowed
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never married (0)
1 = Married (1)
2 = Separated, divorced, widowed (2 - 6)
-1, -2, -7 = Missing
Variable was recoded again into dummy variables (Never married being the reference category)

6. Child Has Trouble Getting Along With Other Children at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Has Trouble Getting Along With Other Children
[Child first name] …has trouble getting along with other children.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2002, then a variable was created to assess their mother’s response to whether the respondent had trouble getting along with other children at age 14 in 2002.

7. Child Has Strong Temper and Loses it Easily at 13 Years Old or 14 Years Old (1986 – 2014)
Behavior Problems Index: Child Has Strong Temper and Loses it Easily
[Child first name] …has a very strong temper and loses it easily.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 13 years old in 2008, then a variable was created to assess their mother’s response to whether the respondent had a strong temper at age 13 in 2008.

8. Life With No Danger In It Would Be Too Dull For Me at 16 Years Old or 17 Years Old (1994 – 2014)
Agreement with statement – Life with no danger in it would be too dull for me
1 = Strongly disagree
2 = Disagree
3 = Agree
4 = Strongly agree
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Disagree (disagree, strongly disagree) (1 – 2)
1 = Agree (agree, strongly agree) (3 – 4) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s
age which was generated from their birth year. For instance, if the respondent was 17 years old in 2012, then a variable was created to assess whether they agreed or disagreed with this statement at age 17 in 2012.

Has an adult member of R’s household been sent to jail or prison since R was 10 years old?
Since you were ten years old, has an adult member of your household (other than yourself), that is someone who was living in the same household as you at the time, been sent to jail or prison?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing

10. Total Number of Years in Military
Variable manually created by inspecting the data and tracking when R indicated that their enlistment was ending or the year in which they separated from the military and subtracting that year from the year in which R indicated that they first entered service or the year in which R first entered into active duty.\(^3\)
Range = 0 (months) – 25 years

i. Date R entered service (2000 – 2014)
What month and year did you first enter the [branch of military service]?

ii. Year R entered active duty (2000 – 2014)
What month and year did you first enter into active duty in the [branch of military service]?

iii. Year of the end of R’s enlistment (2000 – 2014)
In what month and year will your current enlistment end?

In what month and year did you separate from the [branch of military service]?

Variable was manually created by inspecting the data and tracking if R had multiple

\(^{3}\) Entering into active duty and end of R’s enlistment were used as additional variables for this due to some respondents answering these questions and not when they first entered service and when they separated from the military.
answers for entering the military, entering active duty, year in which enlistment was ending, and year in which R separated from the military. Those who had multiple answers were marked as those who re-enlisted.
0 = No
1 = Yes (reference category)

12. Year R Joined Military
Variable manually created by inspecting the data and tracking when R indicated that they first entered service or the year in which R first entered into active duty.\(^4\)
Range = 1995 – 2014

   i. Date R entered service (2000 – 2014)
      What month and year did you first enter the [branch of military service]?

   ii. Year R entered active duty (2000 – 2014)
      What month and year did you first enter into active duty in the [branch of military service]?

13. Age R Joined Military
Variable manually created by subtracting the year R joined military and R’s birth year
Birth Year – Year R Joined Military
Range = 18 – 30

Grade of R (enlisted person)
What [Is/Was] your grade?
1 = E1
2 = E2
3 = E3
4 = E4
5 = E5
6 = E6
7 = E7
8 = E8\(^5\)
9 = E9
10 = E10
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
1 = E1
2 = E2

\(^4\) Entering into active duty was used as an additional variable for this due to some respondents answering this question and not when they first entered service.
\(^5\) No responses were greater than or equal to E8.
Does R’s current civilian job use skills from military job?
Does your current civilian job use any skills from your [job in the Armed Forces]?
0 = No
1 = Yes
3 = If volunteered: No civilian job
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
3, -1, -2, -7 = Missing

While in military, R take any courses for high school/college credit?
During your service in the [branch of military service], [did/have] you [take/taken] any
courses for which you received high school or college credit?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing

17. Number of Years of Regular School R Had Completed or Received Credit For At the Time R Entered the Military (2000 – 2014)
At the time R entered military, # years of school R completed
At the time you entered the [branch of military service] how many years of regular school
had you completed and got credit for?
0 = None
1 = 1st grade

---

6 There were no responses for 1st grade through 9th grade or for 6th year of college, 7th
year of college, 8th year of college, or ungraded.
2 = 2\textsuperscript{nd} grade
3 = 3\textsuperscript{rd} grade
4 = 4\textsuperscript{th} grade
5 = 5\textsuperscript{th} grade
6 = 6\textsuperscript{th} grade
7 = 7\textsuperscript{th} grade
8 = 8\textsuperscript{th} grade
9 = 9\textsuperscript{th} grade
10 = 10\textsuperscript{th} grade
11 = 11\textsuperscript{th} grade
12 = 12\textsuperscript{th} grade
13 = 1\textsuperscript{st} year of college
14 = 2\textsuperscript{nd} year of college
15 = 3\textsuperscript{rd} year of college
16 = 4\textsuperscript{th} year of college
17 = 5\textsuperscript{th} year of college
18 = 6\textsuperscript{th} year of college
19 = 7\textsuperscript{th} year of college
20 = 8\textsuperscript{th} year of college
95 = Ungraded
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = 12\textsuperscript{th} grade
1 = 1\textsuperscript{st} year of college
2 = 2\textsuperscript{nd} year of college
3 = 3\textsuperscript{rd} year of college
4 = 4\textsuperscript{th} year of college
5 = 5\textsuperscript{th} year of college
0, 10, 11, -1, -2, -7 = Missing

Has R ever worked or been deployed in other country during combat?
Have you ever [worked for pay/worked for pay or been deployed] in a foreign country during a period of combat?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing
19. Iraq or Afghanistan. Country R Worked Or Was Deployed In: Iraq or Afghanistan

i. Country R worked/was deployed in – Iraq (2008 – 2014)
   In which of the following countries were you?
   Response choice: “Iraq”
   0 = Not selected
   1 = Selected
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing

   ii. Country R worked/was deployed in – Afghanistan (2008 – 2014)
   In which of the following countries were you?
   Response choice: “Afghanistan”
   0 = Not selected
   1 = Selected
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing

Variable manually created by adding Country R worked/was deployed in – Iraq and Country R worked/was deployed in – Afghanistan together
Recoded:
0 = No – have not worked or been deployed in Iraq or Afghanistan
1 = Yes – have worked or been deployed in Iraq or Afghanistan (reference category)
-1, -2, -7 = Missing

   How satisfied was R with the military?
   Now taking all these things together, how satisfied [are/were] you with the [branch of military service]?
   1 = Very satisfied
   2 = Somewhat satisfied
   3 = Somewhat dissatisfied
   4 = Very dissatisfied
   -1 = Refusal
   -2 = Don’t know
   -7 = Missing

   Recoded:
   0 = Not satisfied (somewhat dissatisfied, very dissatisfied) (3 – 4)
   1 = Satisfied (very satisfied, somewhat satisfied) (1 – 2) (reference category)
   -1, -2, -7 = Missing

21. Self-Esteem After Joining Military (On the whole, I am satisfied with myself)
   Variable manually created to assess whether respondents agreed or disagreed with this statement after joining the military. The year R joined military was used for generating this variable as well. The study years are 2000 – 2014 and self-esteem was determined for
the year(s) after individuals joined the military.
1 = Strongly disagree
2 = Disagree
3 = Agree
4 = Strongly agree
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Disagree (disagree, strongly disagree) (1 – 2)
1 = Agree (agree, strongly agree) (3 – 4) (reference category)
-1, -2, -7 = Missing

22. Married After Joining. Marital Status After Joining Military
Marital Status (2000 – 2014)
Official Marital Status
0 = Never married
1 = Married
2 = Separated
3 = Divorced
6 = Widowed
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never married, separated, divorced, widowed (0, 2 – 6)
1 = Married (1) (reference category)
-1, -2, -7 = Missing
Variable manually created to assess respondent’s marital status after joining the military. The year R joined military was used for generating this variable as well. The study years are 2000 – 2014 and marital status was determined for the year(s) after individuals joined the military.

23. Emotional Behavior Problems After Joining Military
During the last 12 months has R received help for emotional, behavioral, or family problem? (2000 – 2014)
During the last 12 months, have you received any help for an emotional, behavioral, or family problem?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
Variable manually created to assess whether respondents had emotional, behavioral, or family problems after joining the military. The year R joined military was used for generating this variable as well. The study years are 2000 – 2014 and emotional, behavioral, or family problem was determined for the year(s) after individuals joined the military.

24. Violent Behavior, Temper After Joining Military
Problems for which R received help during the last 12 months – violent behavior, temper
What was the problem or problems? (2000 – 2014)
Response Choice: “Violent behavior, temper”
0 = Not selected
1 = Selected
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes (reference category)
-1, -2, -7 = Missing
Variable manually created to assess whether respondents had exhibited violent behavior or a temper after joining the military. The year R joined military was used for generating this variable as well. The study years are 2000 – 2014 and violent behavior, temper was determined for the year(s) after individuals joined the military.

25. Young Crime at 10 Years Old, 11 Years Old, 12 Years Old, 13 Years Old, 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (Young Crime 10-17)
This variable was created by adding the following six variables together. Each of the six variables are dichotomous and were added together in order to obtain a continuous variable to determine how many times the individual engaged in these behaviors as adolescents.

i. Child Bullies Or Is Cruel/Mean To Others at 10 Years Old, 11 Years Old, 12 Years Old, and 13 Years Old (1986 – 2014)
Behavior Problems Index: Child Bullies Or Is Cruel/Mean To Others
[Child first name] …bullies or is cruel or mean to others.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the
respondent’s age which was generated from their birth year. For instance, if the respondent was 10 years old in 1986, then a variable was created to assess their mother’s response to whether the respondent bullied or was cruel/mean to others at age 10 in 1986.

ii. Child Breaks Own Or Another's Things Deliberately at 10 Years Old, 11 Years Old, 12 Years Old, and 13 Years Old (1986 – 2014)
Behavior Problems Index: Child Breaks Own Or Another's Things Deliberately
[Child first name] …breaks things on purpose or deliberately destroys [his/her] own or another’s things.
1 = Often true
2 = Sometimes true
3 = Not true
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Not true (3)
1 = True (often true, sometimes true) (1 – 2) (reference category)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 11 years old in 1994, then a variable was created to assess their mother’s response to whether the respondent broke things deliberately at age 11 in 1994.

iii. Damage School Property On Purpose at 10 Years Old, 11 Years Old, 12 Years Old, and 13 Years Old (1988 – 2014)
Child self-admin: How often in last year damaged school property on purpose
0 = Never
1 = Once
2 = Twice
3 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never (0)
1 = Once or more than once (1, 2, 3)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 12 years old in 2008, then a variable was created to assess how often they damaged school property on purpose in the past year at age 12 in 2008.

iv. In last year R ever gotten into a physical fight at school or work at 14 Years
Old, 15 Years Old, 16 Years Old, and 17 Years Old (1994 – 2014)
In the last year (last 12 months), have you ever gotten into a physical fight at school or work?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 14 years old in 2012, then a variable was created to assess whether the respondent had gotten into a physical fight at school or work in the past year at age 14 in 2012.

v. In last year R ever hit or seriously threatened to hit someone at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (1994 – 2014)
In the last year (last 12 months), have you ever hit or seriously threatened to hit someone?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 15 years old in 2010, then a variable was created to assess whether the respondent had hit or seriously threatened to hit someone in the past year at age 15 in 2010.

vi. Have you ever in last year hurt someone enough to need doc? at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (1994 – 1998)
In the last year (last 12 months), have you ever hurt someone badly enough to need bandages or a doctor?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-3 = Invalid Skip
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 16 years old in 1998, then a variable was created to assess whether the respondent had hurt someone badly enough to see a doctor in the past year at age 16 in 1998.

How many times in last year R hurt someone badly enough to need bandages or doctor? at 14 Years Old, 15 Years Old, 16 Years Old, and 17 Years Old (2002 – 2014)
In the last year, about how many times have you hurt someone badly enough to need bandages or a doctor?
1 = Never
2 = Once
3 = Twice
4 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing

Recoded:
0 = Never (1)
1 = Once or more than once (2, 3, 4)
-1, -2, -7 = Missing
To determine the right ages, a wave age variable was created based on the respondent’s age which was generated from their birth year. For instance, if the respondent was 17 years old in 2008, then a variable was created to assess whether the respondent had hurt someone badly enough to see a doctor in the past year at age 17 in 2008.

The final hurt variable was created by adding these two dichotomous variables together. In addition, the final young crime variable was created by adding these six variables together. Young crime is a continuous variable that indicates the number of times the respondent engaged in these behaviors (maximum crimes being 12).

26. Crime
This variable was created by adding the following variables together. Each variable has been coded to be dichotomous and because the year 2000 is missing for the hurt variable, there is a total of 23 possible crimes for 2000 or earlier. Had the respondent joined the military in the year 2000 or earlier, the number of crimes they have committed since joining the military were added together. This was done for each possible wave. The number of crimes committed was divided by the number of possible crimes and a proportion was generated. Originally, this variable ranged from 0-.67 but was recoded to
be between 0-.20 and more. This was done due to the rarity of proportions being greater than .20 (only 18 total cases, or 5.44% of the sample had a proportion of crime committed greater than .20) and is based on .04 increments. This variable was coded to be on .04 increments because .04 is the next valid response of crimes committed after 0.

i. In last year R ever gotten into a physical fight at school or work (2000 – 2014)
In the last year (last 12 months), have you ever gotten into a physical fight at school or work?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing

ii. In last year R ever hit or seriously threatened to hit someone (2000 – 2014)
In the last year (last 12 months), have you ever hit or seriously threatened to hit someone?
0 = No
1 = Yes
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = No
1 = Yes
-1, -2, -7 = Missing

iii. How many times in last year R hurt someone badly enough to need bandages or doctor? (2002 – 2014)
In the last year, about how many times have you hurt someone badly enough to need bandages or a doctor?
1 = Never
2 = Once
3 = Twice
4 = More than twice
-1 = Refusal
-2 = Don’t know
-7 = Missing
Recoded:
0 = Never (1)
1 = Once or more than once (2, 3, 4)
-1, -2, -7 = Missing