# To Use or Not to Use?
# Substance Abuse and Post-9/11 Veterans:
# The Impact of Military Service on the Life Course

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**Abstract**

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Chair of the Supervisory Committee:

Professor Kyle Crowder

Sociology

The study of the military is often entangled with the study of war. While both subjects overlap substantially, the discipline of military sociology focuses on those serving in the military and the institution itself, rather than solely the conflicts militaries endure. Regardless of our personal attitudes toward the military, it is a relevant aspect of our society, and will likely continue to be so into the future. For something that can nearly be classified as a total institution, a concept that sociologists have been fascinated by for decades, it is surprising that researchers tend to avoid the discipline of military sociology entirely. More specifically, while some theorizing has been accomplished on the operation of the military as an institution, direct research on the lives of servicemembers has scarcely been touched upon. I conduct mixed-methods analyses (survey and interview data) to address these questions, focusing solely on the rates and reasons behind substance use for post-9/11 veterans currently residing in Washington State

From this study I am able to discern that for the current era (post-9/11) of veterans the socialization processes of the military appear to be roughly similar across a variety of sociodemographic characteristics. Most notably, gender differences in patterns of substance use are subtle, if not non-

existent; contrary to findings in previous literature. In addition, the mechanisms that drive specific behaviors do appear to vary across the life course, and I note some gender differences as well. Overall, the post-9/11 era of veterans appear to be less influenced by the military institution, and instead their actions are primarily driven by age and social factors.

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# Chapter One
# INTRODUCTION

On a rainy Tuesday afternoon, I shuffled my papers and prepared to wrap up another interview session. Across from me sat Laura Sanders, a 34-year-old Navy Veteran of the post-9/11era of service[1]. I spent the last two hours going over her experiences with and opinions of drugs and alcohol across her life, as well as other key aspects of her military service (and her life) that may have influenced her choices along the way. As with all of my interviews, I ended with an opportunity for the respondent to tell me anything that they felt compelled to share, that may not have been a question I directly asked during the interview protocol. After proposing this question to Laura, she leaned back in her chair and thought quietly for a long stance of time. Finally, she culminated our interview by noting the following,

> "*I guess I would just reiterate that like, even if you, you know, interview as many veterans as you will, you're gonna be missing some experience because that's gonna be the experience of the person who's maybe less willing to talk about it."*

Laura is correct in her assertion—no matter how many interviews I conduct I will never truly be able to capture the experience of every individual. Though the goal of much sociological research is to group people in order to assess patterns of behavior, it is easy to forget that the original story is made up of individuals. While patterns may exist, each experience is unique to the person, and even if their story is similar to another's it does not make it the same.

With this concept in mind, I intend to tell a story that tracks both group patterns *and* individual experiences of as diverse a population of veterans as possible. To reach this goal, I construct a mixed-methods analysis that uses both quantitative and qualitative data in order to attempt to understand both the rates of substance use before, during, and after military service, and also the *reasons* behind the choice to use or not. I argue that the military is an understudied institution that can be used as a case study to

[1] The post-9/11 era refers to individuals who entered the military following the terrorist attacks that took place on September 11th, 2001 in New York.

provide insight into how behavioral trajectories might be altered by participation within an organization. In addition, I pay close attention to the socialization processes that take place within the military, and how these mechanisms may differ across a variety of socio-demographic characteristics. This study aspires to provide direct research on an understudied institution that has been predominately theorized upon in the past, lending knowledge to the study of institutions and operational processes along the way.

## LITERARY CONTEXT AND SHORTCOMINGS

Sociologists have long been preoccupied with the understanding of total institutions. Surprisingly, often left out from this picture is the study of military service. While the military does not represent a perfect total institution, it does make a great case study of an establishment that is near total, particularly in its methods of socialization. Socialization refers to the process of being indoctrinated into the particular norms, values, and beliefs of society (or a specific group) in order to allow the individual to fully participate as a part of that society/group (Anderson & Hysock, 2009; Brady & Randall, 1999; Mayer, 2004; Whaley, 2001). The military takes this socialization process to a more exaggerated level than typical society. In order to socialize recruits to one common purpose within the military, individuals are indoctrinated into the institution through a variety of in-group techniques and ritual acts (like donning a uniform or shaving one's head), that aim to deindividualize the recruit and rebuild a new sense of self that is centered on the attitudes, norms, and beliefs of the military (Jackson, et al., 2012). Socialization is key to the success of the military. It is necessary in order for the military to be able to carry out critical missions and ensure the safety of all those involved (Kirke, 2009; Whaley, 2001)

The process of socialization in the military also involves an identity that is refocused on traditionally masculine ideals. The United States military is considered to be a gendered institution, meaning that gender is an integral part of the processes, values, and customs of the institution (Anderson & Hysock, 2009). Gendered processes are visible in nearly all aspects of the military, including power allotment and stereotyped expectations of individual recruits (Anderson & Hysock, 2009). The military's social role, historically, has been to change "boys to men" in a rite of passage that emphasizes

traditionally masculine traits and devalues traditionally feminine traits (Segal, 1999). Servicemen (and women), therefore learn to conceal (and possibly devalue) the feminine traits they possess. This polarization of gendered characteristics helps sustain an institution based on extremes, fostering what many would call a hypermasculine culture—one based on exaggerated stereotypes of masculinity, including aggression, dominance, and control, as well as the objectification and hypersexualization of women (Anderson & Hysock, 2009; Rosen, Knudson, & Fancher, 2003).

Since the military is rooted in a hypermasculine foundation, this outlook may be reinforced in many, if not all aspects of the establishment (Rosen, Knudson, & Fancher, 2003). Additionally, reinforcing gender stereotypes contributes to the prohibition of women from becoming fully socialized into the organization. Therefore, men and women may be socialized differently in the military, which could lead to different behavioral outcomes. Hence, the military also makes an excellent case study for examining how gender interacts with institutions.

Military service typically occurs during the years in the life course when individuals' identities are still forming and are most easily manipulated or influenced—around 18-25 years of age (Teachman & Tedrow, 2007). Successively, service is frequently viewed as a period of transition or a turning point to adulthood for adolescents (Kelty, Kleykamp, & Segal, 2010; Jackson et al., 2012). Conversely, this is also the point in time when experimentation with drugs and alcohol is most common. Substance abuse, specifically the abuse of substances such as alcohol and illicit or prescription drugs, has become a growing issue in contemporary US society. Not only does the abuse of substances harm the individual, but it also leads to monumental consequences for society. DUI's, violence, lost productivity, and unequal access and need for healthcare all pose serious issues for society today, costing the United States up to $600 billion each year (Mahalik, 2015).

Previous literature on substance use in the military has found that Vietnam veterans who were known to have used heroin during service decreased or stopped use altogether after returning back from deployment (Robins & Slobodyan, 2003). Similar findings were observed by a different study which found that half of their sample of enlisted Army Vietnam servicemen had tried heroin or opium while

deployed, however only 10% continued some use after returning home (Robins, Davis, & Goodwin, 1974). In an unrelated study, it is found that prescription drug use and heavy alcohol use increases among combat veterans (Bray et al, 2010). A final study reveals that illegal drug use decreases during deployment while prescription use increases during deployment, and further increases after exiting the service, however this study was limited to veterans returning to predominately minority neighborhoods (Golub & Bennett, 2014; Vazan, Golub, & Bennett, 2013). Alcohol use is a different story. According to Teachman, Anderson, and Tedrow, prior literature and current research have been consistent in revealing that relationship exists between military service and alcohol use, though consistent data comparing across the military life course in a current era is less explored (2015).

Most studies focus solely on comparisons across active duty servicemembers and civilians, with relatively few references to patterns among veterans. Second, of those studies that do touch on veterans, gender differences are often excluded. Additionally, previous research tends to be focused on a specific branch of service or era of service (i.e. just the Army or just Vietnam era servicemembers), leaving out data on more current eras and comparisons across several branches. Finally, of the studies that do exist on substance use in the military, the majority of analyses tend to focus on one substance, such as heroin, or lump them all together into one "illicit drug use" category. This is frustrating, because it can easily be argued that the motivations to try LSD or Ecstasy are likely different from regular use of heroin or methamphetamines, yet in most studies these drugs are all treated the same under one category.

There may be evidence to support that motivations to use or not vary by types of substance, yet data on specific substances and provocation for using them is inconclusive. For example, Teachman, Anderson, and Tedrow suggest that alcohol in the military may act as a rite of passage or even as a tool of socialization into the culture of the military (2015). On the other hand, substances like prescription drugs, marijuana or illicit drugs may be used as more of a coping mechanism to help manage the stress associated with the transition back to civilian life after exiting the service (Coll, 2011) or exposure to combat (Bray, 1999; Bray et al., 2010; Cook, 1976; Coll, 2011; Shen, 2012). What is unclear is whether or not illicit drugs, marijuana, and/or prescription drug misuse are used for the same reasons by military

servicemembers. It is not hard to believe that motivation to self-medicate with prescription drugs or even marijuana, may differ from the motivation to self-medicate with a hard drug like cocaine.

Finally, previous research provides support for the idea that there are differences in rates of use for specific substances by gender, yet little research has been conducted on *why* these trends exist. For example, research finds that women in the military use alcohol at lower rates than military men and civilian women (Teachman, Anderson, & Tedrow, 2015; Eisen et al., 2012; Lehavot et al., 2012; Wallace, Sheehan, & Young-Xu, 2009; Nolen-Hoeksema, 2004). However, women in the military use drugs at similar rates as men, contrary to findings that among civilians, women use drugs at lower rates than men (Bray, 1999; Brady & Randall, 1999). While I had trouble finding direct research on why these rates exist for military women, there are several hypothetical mechanisms at play that could encourage women to use alcohol or drugs, including (but not limited to) stresses due to the increased rates of sexual aggression and assault in the military (Morral et al., 2016; Segal, 1999), pressure to fit into a male-dominated military culture, or feelings of anxiety resulting from the small number of women enlisted alongside them. There are several mechanisms that could *discourage* women from using alcohol or drugs as well, such as having a lower risk of exposure to the culture of drinking or "macho" culture of the military, or abstaining as a way to avoid being put in a vulnerable scenario (Teachman, Anderson, & Tedrow, 2015).

## OUTLINE OF THE DISSERTATION

Clearly, three complex puzzles emerge from out of the previous literature, which outline my three distinct, yet linked, chapters.

The first puzzle arises from the lack of consistent and diverse data on rates of substance use in the military. It is difficult to discern what the rates of alcohol, illicit drug, marijuana, and prescription drug use are among servicemembers, before, during, and after their service in the military. Part of this is due to the vague nature of the illicit drug use question in the National Longitudinal Survey of Youth-1997 (one of the largest, most reliable sources of longitudinal data that includes questions on military service and substance use), making it difficult to decipher if it does or does not include prescription drug use as an

illicit drug. My research intends to improve upon this problem by using a self-created survey with distinct subsections for each substance in question, along with a more explicit definition of what is included in that substance's category. Therefore, my first chapter aims to provide an exploratory analyses of substance use, including hard drug, prescription misuse, marijuana, and alcohol, across the military life course (before, during, and after service). I take a quantitative approach to evaluate tests of significance in order to address differences in rates of use across the life course, while also tracking reasons for substance use in each time period, across a variety of socio-demographic characteristics.

The second puzzle relates to the inconclusive findings from previous data on alcohol and drugs, specifically across the military life course (before, during, and after service). As mentioned, I believe that the motivations to use or not use a variety of substances may differ across substance and across the life course, depending on the relative needs of the individual. The second chapter draws on the rates of substance use from the first, but aims to address how specific behavioral trajectories may be altered by operation in the military using qualitative as well as quantitative data. To pursue this I use a loose Rational Choice framework in order to address the costs and benefits associated with substance use or abstention and how these components may lead to varying rates of substance use across the life course.

Finally, the third puzzle adds takes gender into greater consideration. As discussed, previous research has found that military women (veterans and active duty) use alcohol at lower rates than both military men *and* civilians, yet there is no gender difference in rates of drug use among servicemembers. My final chapter takes a specific look at gender differences in rates and reasons behind substance use or lack thereof, combining both qualitative and quantitative data and employing more advanced statistical techniques to analyze patterns of use than in Chapter One. In both Chapter Two and Chapter Three I take care to provide as much context and individual experience as is realistic in order to elevate the patterns I do observe.

I believe that by answering these three dilemmas I will be able to shed light on substance abuse in our current military. Without understanding *why* veterans are choosing to use or not use drugs or alcohol, it is difficult to construct a solution that will decrease use among all veterans, both men and women. As

men and women may be socialized differently in the military, the steps needed to help them with substance abuse may also vary across gender. Overall, this research provides understanding into how socialization processes are conducted in total-institutions. It analyzes how these processes may influence behavioral trajectories, and how these actions may vary across a variety of socio-demographic characteristics, especially gender. Finally, while the military as an institution has been theorized upon for years, little direct research exists. This study attempts to alleviate this shortcoming by providing tangible research that explores both the lives of individuals and the patterns that emerge when they are collectively shaped by an institution.

# Chapter Two:
# A DESCRIPTIVE PICTURE OF SUBSTANCE USE ACROSS THE US MILITARY LIFE COURSE

## INTRODUCTION

The study of the military is often entangled with the study of war. While both subjects overlap substantially, the discipline of military sociology focuses on those serving in the military and the institution itself, rather than solely the conflicts militaries endure. Regardless of our personal attitudes toward the military, it is a relevant aspect of our society, and will likely continue to be so into the future. For something that can nearly be classified as a total institution, a concept that sociologists have been fascinated by for decades, it is surprising that relatively few studies explore the discipline of military sociology. More specifically, direct research on the lives of servicemembers has been lightly touched on, despite more extensive theorizing on the operation of the military as an institution.

It is common knowledge that servicemembers in the United States are faced with enormous challenges after returning back to civilian society. In particular, the public widely holds that substance abuse problems are the key issue plaguing our nation's veterans. Despite this civic viewpoint, not much research has been conducted on the specifics of the problem, especially for our current era of veterans (those enlisting after 9/11/2001). Research does find that alcohol is a problem for many veterans of the post-9/11 era (Teachman, Anderson, & Tedrow, 2015) and that hard drug use is much less prevalent (Merklinghaus, forthcoming), though more explicit detail is lesser known. In this sense, previous research can be improved upon in two key areas; 1) what trends are actually being observed and across what types of substances?, and 2) why are we observing these trends?

With this research I expand upon previous literature by conducting a simple yet descriptive analysis of patterns of substance use for post-9/11 era veterans in the United States. This analysis aims to shine light on the operation of organizations, specifically the military, and the socialization that takes place within them. Understanding the structure and authority of the institution of the military, and its

influence in shaping the lives of servicemembers, is critical to furthering our knowledge of other types of organizations, particularly those that are considered total. Above all, my research intends to highlight insights into how behavioral trajectories of individuals enlisting in the military might be changed by their participation in this type of organization.

Using survey data, I analyze patterns of substance use, including hard drug, prescription misuse, marijuana, and alcohol across the military life course (before, during, and after service) for post-9/11 veterans. Second, I evaluate tests of significance for the difference in substance use before, during, and after service, and across a variety of socio-demographic characteristics, including gender, race, length of service, and branch of service. I find that patterns of drug use vary greatly across the type of substance used, with alcohol being the only substance regularly used during service across the sample. After exiting the military rates of substance use fluctuate across substance as well, with alcohol use decreasing, but drug use increasing to levels similar to their rate prior to service. I find that explanations for substance use differ across each substance addressed, and that patterns of use fluctuate across a variety of socio-demographic characteristics.

My research contributes to the literature by providing an in-depth descriptive analysis that compares both rates and *reasons* motivating (or suppressing) substance use across a variety of substances and the military life course. Increasing our understanding of organizations and their processes of shaping individuals and their life course outcomes is crucial in helping to develop policies and programs that can better address the needs of our post-9/11 veteran populations.

## BACKGROUND

Research on substance use and the military is relatively limited. This becomes even more apparent when looking at the post-9/11 era of veterans. That being said, past literature has uncovered some useful findings that, taken together, provide subtle insights into patterns of use. In particular, previous studies have found that alcohol use tends to be a problem for servicemembers, both during and after service (Teachman, Anderson, & Tedrow). Past research on drug use and the military is more convoluted, with

some studies finding stark decreases in use (ranging in drugs from heroin to marijuana) after returning from deployment (Robins & Slobodyan, 2003; Golub & Bennet, 2004; Vazan, Golub, & Bennett, 2013), while others find no change in drug use during service compared to after (Merklinghaus, forthcoming).

Regardless, these studies leave several holes unaddressed, most notably a) a lack of comparison to life prior to military service, b) flaws in the definition of drug or hard drug use, and a lack of comparison to other types of substances, c) few comparisons across a variety of socio-demographic characteristics, and d) studies are limited to eras of service prior to the most current; the post-9/11 era. In this background section I highlight fundamental findings that exist in the literature, and explore each of the above shortcomings in depth.

## A. The Military Life Course and Selectivity

Of the literature focusing on drug use in the military that does exist, it tends to neglect comparisons within a single study to other stages of the life course (i.e. civilian to active duty to veteran). The majority of studies instead focus on veterans or only on active duty servicemembers. While concentrating on one stage of the military life course is useful, limiting analyses and questions only to their experiences during or after service may lead to inadequate tests of crucial theoretical arguments. By focusing entirely on the effects of service after exiting the military, studies may be overlooking important controls for selectivity into the military. For example, civilians with a higher propensity for risk-taking may join the military, and that riskiness is associated with increased rates of drug and/or alcohol use in the first place, or other characteristics like age or personality traits. In addition, looking only at the tail end of service may ignore the overall effects of service on the life-course.

For instance, research by Robins and Slobodyan finds that Vietnam veterans who had used heroin during service decreased or stopped use entirely after returning home from deployment (2003). Comparable findings are noted by a subsequent study that finds that half of their sample of enlisted Army Vietnam servicemen had experimented with heroin or opium while deployed, yet only 10% continued a

degree of use upon return home, and fewer than one percent showed symptoms of dependence. These findings can then be compared to a parallel sample of enlisted Army servicemen who tested positive on a urinalysis before leaving Vietnam. Of these veterans who admitted to drug use while deployed, only seven percent exhibited symptoms of dependence after returning to the United States, regardless that 75% of the veterans felt that they had a dependence on heroin/opium while deployed (Robins, Davis, and Goodwin, 1974). While the more recent study does examine some of the implications of selectivity, noting that those veterans who had used heroin after returning from Vietnam tend to have partaken in deviant or risky behaviors, such as having friends who were drug users, prior to deployment (2003), both studies fall short in terms of comparisons of substance use across various military life transitions (i.e. civilian, active duty, veteran).

Regardless of the challenges of available research, I uncovered three studies that track the transitions from civilian to active duty and to veteran (one of which is my Master's Thesis), though they have weaknesses of their own. The first two studies focus on respondents who, after exiting the military, return home to inner city New York neighborhoods (Golub & Bennett, 2014; Vazan, Golub & Bennett, 2013). According to these studies, marijuana use after service decreases compared to before military service, although the effect is not statistically significant, and marijuana use while in the military is found to be lower than after exiting the service (Golub & Bennett, 2014; Vazan, Golub, & Bennett, 2013). Furthermore, similar patterns are observed for cocaine use, but the results are again not statistically significant (Golub & Bennett, 2014; Vazan, Golub, & Bennett, 2013). Overall heroin use is not common at any point in the life course, while prescription drug use does increase after exiting the service (Golub & Bennett, 2014: Vazan, Golub, & Bennett, 2013).

The third study uses data from the National Longitudinal Survey of Youth-97 to track the transition from civilian to veteran (Merklinghaus, forthcoming). In this past study I found that enlisted members of the military are less likely to use drugs than are their civilian counterparts, but this pattern does not occur for veterans (Merklinghaus, forthcoming). Subsequently, I found that despite there being no decrease in drug use after exiting the service, there is no increase in drug use either, even after

controlling for combat status (Merklinghaus, forthcoming). Despite the strengths of this study, particularly the national-scope and longitudinal nature of the data, there are limitations worth highlighting. For example, the drug-use variable used has significant weaknesses, mainly attributable to its vague nature, which makes it difficult to discern exactly what types of drugs were being abused. This makes it incredibly challenging to discern general patterns of drug use across specific substances. This study also refrains from including comparisons of general drug abuse rates to rates of prescription drug abuse, marijuana use, and/or alcohol use, therefore leaving out a significant portion of the overall picture of substance use and the military.

Notwithstanding the more consistent data for trends of alcohol use in/after the military, finding that in general a relationship exists between the two, the research faces many of the same hardships as the literature on drug use and the military, in that reliable data comparing across the military life course is difficult to find (Teachman, Anderson, & Tedrow, 2015). Even when research does seek to compare veterans to nonveterans, the data are often outdated (Bray 1991).

**B. Defining "Drug Use"**

While historical patterns of drug use are discussed in the literature, the clarification over which specific drugs are being used when, and at what rate, are unknown. Overall, since 1980 there has been a decrease in drug use in the military, consistent with increasingly strong penalties and stringent testing (Bachman et al., 1999; Bray, Kroutil, & Marsden, 1995; Bray, Spira, Olmsted, & Hout, 2010). Generally, drug use while serving in the military has decreased from 37% in 1980 to six percent in 1998 (Ames, Cunradi, & Moore, 2002). In spite of decreases in illicit drug use, however, there is evidence of increased prescription drug misuse while serving on active duty and after exiting the service, and at higher rates than civilians (Bray et al. 2010; Miech et al., 2013; Golub & Bennett, 2014; Vazan, Golub & Bennett, 2013; Drug Facts: Substance Abuse in the Military, 2013). What makes patterns of drug use in the military hard to study is often the lack of clarity over which substances are being used. For example, the NLSY-97 question on hard drug use asks, "*Excluding marijuana and alcohol, since the date of last*

*interview, have you used any drugs like cocaine or crack or heroin, or any other substance not prescribed by a doctor, in order to get high or to achieve an altered state?*". While this question is useful in a generic sense, it doesn't provide a sufficient amount of detail in terms of understanding patterns of use across specific substances (i.e. cocaine, heroin, prescription drugs, etc.). In addition, these studies lack comparisons to other substances, like alcohol and marijuana.

**C. Sociodemographic Characteristics**

There are relatively little available studies that analyze a variety of sociodemographic characteristics when trying to understand patterns of substance use and the military. For example, few studies compare combat veterans with active-duty service members who have been exposed to combat, especially for service after the Vietnam era. It is revealed that prescription drug use and heavy alcohol use, among other factors, are found to have increased among combat veterans (Bray et al., 2010). However, little other information exists, including a direct comparison with veterans who have not seen combat. I aimed to improve upon this shortcoming with my Master's Thesis, finding that there is no decrease or increase in drug use after exiting the service, even after controlling for combat status (Merklinghaus, forthcoming). The major shortcoming to this conclusion again lies in the construction of the combat variable from the NLSY-97, which asks if an individual has, "*ever served in a combat/war zone*", and not if they have actually *experienced* combat.

When it comes to deployment in general, service members who have been deployed are at higher risk for alcohol dependence and/or binge drinking (Kline et al., 2010) and are more likely to have received treatment for some sort of substance abuse problem (Kline et al., 2010; Shen et al. 2012). Despite these findings, few studies consider combat exposure and its effect on substance use, let alone with direct comparisons across various types of substances and across life course transitions.

Some research has examined the likelihood of alcohol use according to type of military service, such as branch of service. Members of the Army and Marine Corps is found to have higher rates of alcohol use than service members in the Air Force or Navy (Eisen et al. 2012; Mattiko et al., 2011).

Research also discerns that individuals who are members of the National Guard or Reserves are more vulnerable to mental health risks (Kline et al., 2010), which often coincides with increased alcohol use (Bray et al. 2010). In addition, lower rank also increases risk of substance use (Shen et al. 2012). Regardless of these findings, there still lacks a direct comparison for patterns of drug *and* alcohol use in one single study.

Finally, some findings on gendered patterns of drinking are found (though at different magnitudes) across military populations. Overall, female servicemembers have been found to use alcohol at the same, if not lower rates, than their civilian counterparts and male servicemembers (Hoggat et al., 2015; Wallace, Sheehan, & Young-Xu 2009; Teachman, Anderson, & Tedrow, 2015), despite the finding that female veterans abuse drugs at similar rates to men and at higher rates than the general population (Bray, Kroutil, & Marsden, 1995; Hoggat et al., 2015; Merklinghaus, forthcoming). In addition, male enlistees and veterans are more likely to consume alcohol than their civilian counter parts (Teachman, Anderson, & Tedrow, 2015). Regardless of these general findings on hard drug use and alcohol use, there is still no single-study that compares gendered rates of substance use across a wide variety of substances, including both drugs *and* alcohol.

**D. Eras of Service**

Previous literature has been successful in showing that each era of serving in the US military produces vastly different outcomes for the individual. These differences in effects of service by era are partially responsible for the convoluted nature of existing data on substance use in the military. It is unnecessary to use the rates of substance use for those from the WWII era or Vietnam era, for example, in order to get a clear picture of the effects of military service on the life course today, as prior eras all took place in vastly different political climates, economic demands, and natures of service.

For example, it is found that men who served in the Vietnam War report greater rates of marijuana use compared to those of the same era who did not serve in Vietnam or were civilians at that time (MacLean & Elder, 2007). Although this study makes comparisons to the general civilian

population, it still falls short, as it only analyzes data for Vietnam era veterans, not those of more recent periods. Again, research on alcohol use in the military reveals many of the same inconsistencies as the literature on drug use and the military.

My research strives to provide a clear-cut description of servicemembers who enlisted on or after September 11, 2001, an era that is distinctly different from previous eras. These servicemembers were aware of the state of the nation after the terror events that occurred on 9/11 and were therefore mindful that enlisting in the military would mean a strong likelihood of deployment to a war zone. Unlike many Vietnam era veterans, all of the post-9/11 veterans enlisted voluntarily, without conscription. In addition, those who are members of the Reserves or National Guard joined under the impression that there was a strong possibility they could be called into active duty service. Also dissimilar from Vietnam era veterans, these post 9/11 veterans returned to a mostly benign political climate in the US that was more or less in support of the war, rather than adamantly against it. Unlike the WWII era veterans, the post-9/11 era servicemembers return to a society with immensely different economic prospects. This makes the post-9/11 era unique in the expectations of service for individuals enlisting and in the expectations for their transition into veteran status after leaving.

**Current Study**

In sum, although there is research available about the general degree of substance use in the military, the majority of studies face a variety of challenges. First, the bulk of these studies include little reference to the military life transitions (i.e. civilian, servicemember, veteran). Second, the majority of analyses look primarily at marijuana use or prescription drug misuse and tend to lump any reference of illicit drugs into one vague category. Generally, these studies lack direct comparison across different categories of substance, and there are few that include alcohol in the comparison with other drugs. Third, there are little reliable data regarding differences across sociodemographic characteristics, such as branch of service, combat exposure, and gender. Finally, the majority of research focuses on older eras of veterans, with few touching on the post- 9/11 era.

The limited nature of available data on the post-9/11 era of servicemembers is frustrating, as the military is an excellent case study to understand how organizations operate. Researching the military can help us comprehend the socialization process that individuals undergo in order to function as a part of the institution. It can also help us learn potential changes that individuals may endure after leaving the institution, and the lasting effects it may have on their lives.

In this analysis I intend to elaborate on previous research by first comparing data from a cross-section of veterans on their behaviors and experiences as a civilian, servicemember, and veteran, using data from a survey that I created[2]. By constructing this new survey, I am able to improve upon the vague nature of both the drug use and combat questions on previous surveys by creating distinct subsections for each substance in question, more explicit definitions of what is included in that substance's category, and by providing several in-depth questions on combat exposure. I aim to improve on previous literature by comparing rates of usage for various types of substances (alcohol, prescription drugs, marijuana, and a variety of illicit drugs) all in one place. I also take into account several sociodemographic comparisons in addition to combat exposure, including gender, length of service, and branch of service. Finally, I chose to focus recruitment on veterans who enlisted on or after September 11, 2001, with the goal of gathering in-depth exploratory knowledge on this understudied population of veterans.

## DATA & METHODS

I created an online[3] survey of American veterans of the post-9/11 era that are currently residing in Washington State. This survey is critical in order to explore detailed rates of substance use throughout the

[2] With the assistance of my research partner, Daniel Nolan.

[3] The survey is hosted by Google Forms. Respondents were able to access the survey via a link provided on the recruitment materials. The survey is organized into four distinct sections (each a separate page); demographic data, experiences prior to military service, experiences during military service, and experience after military service. Demographic information is only collected once on the survey, so it is assumed that all data is taken in the "present" time; after service (i.e. number of kids, highest education achieved, etc.). Respondents had to answer all questions in order to move on to the next page, though "Prefer Not to Answer" was an option on every question for those who were not interested in disclosing information on a particular indicator. The final page provides interested individuals with a link to a separate Google Form that collects first name and email in order to enter them into a drawing to win an iPad Mini. The raffle survey is not and cannot be linked in any way to the military survey. Respondents are also

military life course across a variety of socio-demographic characteristics. It is important to highlight that this sample is not random nor generalizable to the general population of veterans in Washington or the United States. My aim in conducting this research is not to apply these concepts to all veterans –it is simply to provide a picture of what substance use may look like for this sample. For this reason, I aimed to collect as diverse of a sample as possible, in order to try and gather a *variety* of experiences, rather than the most common. I chose to only administer my survey to Washington State veterans because Washington provides a unique climate with two specific qualities important to this study. First, veterans living in Washington may represent a wide picture of individuals living in the US, as many of them are likely stationed in Washington from other parts of the country, and then have invariably chosen to continue to reside in state after exiting the military. Second, Washington State has a history of more lenient drug policies, including legal recreational marijuana and the proposal of supervised injection sites which is widely supported by the public in Seattle (Greenstone, 2017). These more casual attitudes about drug use may help reduce social desirability bias in survey responses. Finally, Washington is home to seven military bases, including Joint Base Lewis-McCord in the south Sound (Army/Air Force), NAS Whidbey Island (Navy), and Fairchild (Air Force), making it a prime location to study military personnel (Bases in the State of Washington, 2018).

I use a targeted recruitment model. I sought out a wide variety of veterans' organizations, including Veterans Affairs offices, campus veteran organizations[4], and local veteran outreach newsletters. Simply reaching out to veteran outreach programs is not enough, however, as not all veterans are adequately represented at veteran outreach organizations. For this exploratory study, it is important to gather a wide representation of veterans, not just those who are savvy at using veteran outreach organizations. In addition, those using the organizations may be the least likely to have had or currently

provided with the study email for any questions as well as a way to reach out if interested in participating in an interview.

[4] Daniel and I chose not to reach out to American Legion or the Veterans of Foreign Wars, as both organizations are typically geared toward older eras of veterans, and have been found to be scarcely used by younger, post-9/11 veterans (Klimas, 2014).

have substance abuse problems. Therefore, I also recruited from locations that may include veterans with health issues or who may be struggling financially, such as VA clinics and hospitals, Department of State Health Services offices, and substance abuse clinics.

In addition to specific veteran organizations, I aimed to make my study available to the widest audience possible. For these reasons, I also recruited from local grocery stores, feed & seed/hardware stores that typically have community bulletin boards, businesses that are known for employing veterans (i.e. Walmart and Home Depot), and libraries.

Overall, the list of eligible business/organizations were determined based on the following criteria; clientele (veteran facilities, student veteran centers, substance use offices), publicity (libraries, DSHS, grocery stores, hardware stores), variety (different types of grocery stores), potential for homeless veterans (libraries, DSHS offices), and high number of veteran hires (Walmart and Home Depot[5]).

In order to recruit the most possible veterans, but also being mindful of limitations on time and money, I located a map (US Department of Veteran Affairs, 2015) that indicates the counties in Washington State with the densest populations of veterans (although not controlled for general population[6]). In each of the selected counties, I then created a spreadsheet of all target organizations and businesses that were in that county, organized by town/city. If a town in the selected county had at least two identified organizations or businesses, then it was added to a separate spreadsheet of locations to visit or contact[7].

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[5] After the first recruitment trip to Eastern Washington Daniel and I had to revise our list of businesses to accommodate changes in policies at Walmart and Home Depot, neither of which could reliably distribute our materials. We replaced the Walmarts with Fred Meyer grocery stores who did have community bulletin boards, and replaced the Home Depots with local feed and seed stores that had community boards for posting flyers. We found that many Safeway grocery stores no longer have community boards either, but most were happy to post our materials in their employee break room when requested, so we maintained Safeways in our list of outreach locations.

[6] In addition to these counties I added several that were less dense but were near to key veteran resources or were close to military bases in the state.

[7] For the sake of saving resources, there was one exception to this rule – if one of the two locations in the town were places that could not be reached via phone/email (i.e. a grocery store), then the town was deemed too small and not worth commuting to just for two in-person locations. In addition, due to the vast number of substance use disorder clinics in the state, we chose to include a randomly selected 20% of clinics in cities that had more than 10 clinics total, or 2 clinics in towns that had less than 10 total.

The final spreadsheet contains a list of 21 counties in Washington, with a total of 104 towns/cities to contact[8]. We contacted all locations by phone first then email, excluding the grocery stores/hardware stores, which we found were more successful if contacted in person[9].

When contacting the aforementioned locations, I asked if it would be possible to leave flyers, business cards, or email them a pre-formatted email/Facebook announcement that they could advertise for us. The flyers and business cards all contain links to our survey, as well as a contact email for those interested in participating in an in-depth interview. Therefore, the interview and survey samples are roughly from the same pool of respondents.

In addition, I also sought out individuals via digital resources, including Facebook groups and Craigslist. I located Facebook buy/sell, event, or veteran groups by county and town using the search group function on Facebook and adding all relevant groups. Once accepted by the group administrators I was able to post a copy of our recruitment information, survey link, and contact email for individuals to access[10]. A similar process was used for Craigslist as well[11].

I believe that creating and fielding our own survey, rather than using a currently existing database, is essential to this research. As I was able to pull interview respondents from roughly the same pool of survey respondents, I am able to identify any major social desirability bias in the interviews (by comparing substance use rates in the interviews to the rates in the survey). While I could have drawn on a pre-existing survey, I believe that significant flaws exist in the current most reliable database that warrants the creation of my own survey. Previous research on substance use in the military has relied heavily on the National Longitudinal Survey of Youth, 1997. While this database is exceptional in many

[8] Responsibility over specific counties were split across myself, Daniel, and a small team of sociology undergraduate research students.
[9] For locations that were designated in-person and those who did not answer their phone/email Daniel and I drove to directly.
[10] Individuals who were members of the groups were able to freely share our information with other friends and veterans who might be interested.
[11] I posted our information under the categories of "community/general", "community/volunteers" and "community/gigs/domestic work", since we compensated our recruits. All survey participants were compensated for their time by being entered into a raffle to win an iPad Mini.

ways (such as the longitudinal nature of the data, and the large sample size), it has several critical shortcomings that can easily be improved upon with the administration of my own survey. [12] The final survey includes 110 eligible respondents.

My survey corrects for the limitations in the versatility of important NLSY97 indicators. First, I include several questions on combat status rather than one. For example, one question indicates whether or not the individual was deployed, and a second asks whether or not combat was *experienced* while deployed. I also include several other questions pertaining to the nature of combat, such as if they were ever exposed to any hazardous materials or if they ever saw a dead body while in combat.

In order to remedy the shortcomings of the drug use question from the NLSY97, I include several questions on our survey that ask specifically what drugs the respondent has used at each point in time (before, during, and after service) as well as an option to indicate their reasons for using these drugs on the same timeline, and whether or not they had ever just "tried" one of these illicit drugs. I provide a detailed list of drugs for respondents to identify from, rather than just lumping them all into the category of "illicit" or "hard" (i.e. cocaine, LSD, MDMA, spice, etc.). Aside from the drug use questions, I provide the same set of questions in separate subsections for alcohol, marijuana, and prescription drug misuse.

[12]The first problem in the NLSY97 lies in the wording of the question to assess combat status among veterans. The question asks if the respondent has ever served in a combat/war zone. The flaw here is that it doesn't specifically ask if the individual has actually *experienced* combat. While deployment to a combat zone regardless of whether or not combat was experienced can have obvious effects on the wellbeing of the individual (such as stress of being in a new environment, isolation from family/friends, fear of experiencing combat, etc.), *actually* experiencing combat (such as having to fire your weapon, being injured in combat, or witnessing friends/fellow servicemembers experience combat, injury, or death) will have greater negative consequences on the individual. By not specifying whether or not the respondent experienced combat while deployed, the NLSY97 effectively underestimates the effect of combat on servicemembers. The second problem in the NLSY97 is with the question on hard drug use (there are separate questions for marijuana use and drug use). The question asks, "Excluding marijuana and alcohol, since the date of last interview, have you used any drugs like cocaine or crack or heroin, or any other substance not prescribed by a doctor, in order to get high or to achieve an altered state?" While this question is useful in a generic sense, it doesn't provide a sufficient amount of detail in terms of understanding motivations to use varying substances. I believe that the motivation of an individual to use a hard drug, such as heroin, may be very different from the motivation of a respondent to use an alternative drug, such as psychedelics (like LSD, MDMA, etc.), therefore lumping them together (and biasing the question by only mentioning heroin, crack, and cocaine) makes it difficult to determine whether or not motivations vary by type of drug. In addition, this NLSY97 question is also worded in a convoluted way that makes it difficult to determine whether or not it captures prescription drug misuse.

In order to create meaningful descriptive data, I chose to create several indices from the variables, as outlined below[13].

The first is an index from the alcohol use variables. The Alcohol Index is an adequate measure of alcohol use for the respondent, based on the following five questions:

1. *Have you ever consumed alcohol (more than just a "sip")?*
2. *About how much alcohol do you drink per week? One drink is considered to be one beer, one glass of wine, or one single-shot mixed drink.*
3. *About how much alcohol do you typically drink in one setting?*
4. *How often do you do you drink alcohol before or during school or work?*
5. *How often in the average month do you drink to get drunk?*

Respondents (N value of 109) were assigned a value based on their responses (weighted by degree of problematic behavior), which was added together for each question to create the index. The final index ranges on a continuous scale from 0 to 5, with five indicating the heaviest degree of alcohol use. The index was created for each stage as well; before service, during service, and after service. I use Cronbach's Alpha in order to measure internal consistency. The Alcohol Index prior to service has a Cronbach's Alpha value of 0.78; during service has a value of 0.76, and after has a value of 0.75.

I also create a Marijuana Index in order to measure participation and frequency of marijuana use for each respondent. This index is based on the following questions:

1. *Have you ever used marijuana?*
2. *How often do you use marijuana?*

These questions were asked for each stage of the military life course; before, during, and after service. The scale ranges from 0 to 6, with a score of 6 indicating the heaviest degree of marijuana use. For readability, and as there are only two questions to create this range from, we chose to multiply the index value by three so that the scale ranges from 0 to 6 rather from 0 to 2 with very small increments.

Using the majority of combat questions, I create a Combat Exposure index in order to combine all combat questions into one useful index. The Combat Exposure index is constructed using the following questions:

1. *Have you ever been deployed?*
2. *Have you ever been deployed to a combat zone?*

[13] All data analyses were conducted with the assistance and guidance of my research partner, Alice Lazzar-Atwood.

3. *How many times have you been deployed to a combat zone?*
4. *Did you experience combat?*
5. *Were you exposed to wounded, dead, or dying people?*
6. *Were you ever physically injured due to combat or exposure to combat?*
7. *Were you ever exposed to environmental hazards, chemical warfare agents, ionizing radiation, or other potentially toxic substances?*

This index has a scale of 0 to 7, with 0 indicating no exposure to combat and 7 indicating consistent and high levels of combat exposure. The Combat Index has a Cronbach's Alpha value of 0.74.

The final index I create is a Transitionability Index, which tracks the ease at which respondents transitioned back into civilian life after military service. The Transitionability Index is based on the following questions:

1. *After your service, how difficult was it for you to find a job?*
2. *Do you feel that the job skills you learned while in the service are applicable to civilian life?*
3. *It was very easy for me to transition into the civilian job market (on a scale from 0-7)*
4. *There are plenty of transitional programs offered to help me adapt to the civilian job market (on a scale from 0-7).*
5. *There should be more transitional programs to help me adapt to the civilian job market (on a scale from 0-7)*
6. *It was very easy for me to emotionally transition into civilian life (on a scale from 0-7)*
7. *There are plenty of transitional programs to help me adapt to civilian life (on a scale from 0-7)*
8. *I fully take advantage of transitional programs offered to help me adapt to civilian life (on a scale from 0-7)*
9. *There should be more transitional programs to help me transition to civilian life (on a scale from 0 to 7).*
10. *There are plenty of programs available to help me address any adverse effects of military service (on a scale from 0-7)*
11. *My military service helped me achieve things I couldn't have achieved without it (on a scale from 0-7)*
12. *My military service has made life more difficult for me than it was before service (on a scale from 0-7).*
13. *My military service has been a positive influence on my life (on a scale from 0-7).*

The final scale ranges from 0 to 14, with 14 indicating the easiest transition from the military to civilian life. Questions were corrected as necessary for directionality. The Transitionability Index has a Cronbach's Alpha value of 0.59

I also include a variety of descriptive variables in order to adequately assess the scope of our data. These include general demographic questions (such as gender, sexual orientation, marital status, whether

or not they have children, region lived at age 16[14], and age), military-related demographic questions (branch of service, age of enlistment, deployments, military job and rank, active duty vs. reserves/national guard), and difficult questions on homelessness, anxiety, Post-Traumatic Stress Disorder, Traumatic Brain Injury, and sexual assault. Due to the retrospective nature of the data, and because I did not ask each question at each point in time, some of the data is more truly cross-sectional in nature (i.e. number of children, marital status, etc.), valid at the time of survey which is in the "after service" stage of the life course. Only the time-varying questions (most of the mental health questions, all substance use questions) are able to track across each stage in the military life course.

In order to analyze patterns of substance use, I conduct tests of significance to identify if differences exist in rates of use before, during, and after service, as well as across gender, length of service, branch of service, and race. I employ T-tests, ANOVA, and Chi-square tests in order to address statistical significance in my sample.

Although my study has clear strengths, it isn't immune to weaknesses of its own. Clearly, conducting a cross-sectional study to gather longitudinal data is an obvious flaw[15], however I believe that the strengths of creating my own survey outweigh the costs of its limitations. Studies have already been

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[14] Respondents were asked to provide the city and state they lived in at age 16. From the state data, Daniel and I were able to create a "region" variable, based on the following regions: Northeast - ME, VT, NH, NY, MA, CT, RI, NJ, PA, DE, MD, South - FL, GA, AL, MS, LA, AR, TN, KY, SC, NC, VA, WV, TX, OK, Midwest - OH, MI, IN, IL, MO, IO, WI, MN, ND, SD, NE, KS, Rocky Mountains - MT, WY, CO, UT, ID, NV, West Coast - CA, OR, WA, AK, HI, Southwest - NM, AZ

[15] It is important to note some aspects of data-cleaning that were taken into consideration when constructing the final data set. First, any respondents that answered a question with "Prefer Not to Answer" or "N/A" was excluded from the analysis for that question. Because of this, the total number of respondents for each question varies from question to question. Second, only one individual in the survey indicates that they identify as a transman. Due to low sample size, I chose to exclude them from gender comparisons later in this paper. This decision is difficult, however one respondent is not enough to make large conclusions about transgender individuals in the military, and the experience of a transman will most likely vary greatly from that of an individual identifying as a man or woman. In addition, any respondents who did not meet the eligibility criteria were removed from the sample. This includes those who state they do not live in Washington currently, if they are still in the military, and if they enlisted prior to 9/11/2001. Finally, for several of the questions (especially on type of drug-use questions) respondents were allowed to select more than one answer. When analyzing these questions, each response was counted as a separate. For example, if a respondent provided three types of drug experimented with prior to service, they would count as one answer toward each type of drug, rather than one combined individual with all three options. Due to this caveat, several of the calculations include N values higher than the total number of respondents in the sample.

conducted using the NLSY97 in order to understand rates of drug and alcohol use in the military. By providing more detailed questions in this survey, I am able to answer questions that these previous studies have not. Mainly, with this survey sample I am able to gain exploratory insight into possible patterns of drug and alcohol use across the military life course for a variety of socio-demographic characteristics.

## RESULTS & DISCUSSION

The purpose of this article is to paint a descriptive picture of substance use in the military, using retrospective survey data. In order to achieve this goal, I have created several descriptive tables, simple tests of significance, and graphs[16]. Each table assesses a variety of important characteristics of the sample, including basic demographic information, stress variables, military descriptive variables, and substance use variables.

The survey captures the presented demographic information at one point in time—when the respondent elected to take the survey, which is after they have exited the military. Table 1 presents the basic demographics of the survey respondents.

[16] With the assistance of my research partner, Alice Lazzar-Atwood

Table 1: Descriptive Statistics for Basic Demographics

| Variable | Reported at Time of Survey (After Service) | | |
|---|---|---|---|
| | *Percent* | *Mean (median if mean is not calculable)* | *S.D.* |
| **Age at time of Survey** | -- | 31.45 | 4.98 |
| **Gender** (N=110) | | | |
| *Man* | 69.09 | -- | -- |
| *Woman* | 30.00 | -- | -- |
| *Transman* | .91 | -- | -- |
| **Race** (N=109) | | | |
| *White* | 75.45 | -- | -- |
| *Non-White* | 23.64 | -- | -- |
| **Sexual Orientation** (N=110) | | | |
| *Homosexual* | 1.82 | -- | -- |
| *Bisexual* | 4.55 | -- | -- |
| **Marital Status** (N=110) | | | |
| *Never Married* | 11.82 | -- | -- |
| *Never Married but Cohabiting* | 9.09 | -- | -- |
| *Married* | 56.36 | -- | -- |
| *Separated* | 4.55 | -- | -- |
| *Divorced* | 18.18 | -- | -- |
| **Employment** (N=109) | | | |
| *Employed* | 59.63 | -- | -- |
| *Unemployed* | 40.37 | -- | -- |
| **Status of Employment** (N=65*) | | | |
| *Full Time* | 75.38 | -- | -- |
| *Part time* | 24.61 | -- | -- |
| **Highest Degree Achieved** (N=110) | | AA/2-year degree | |
| *High School Graduate* | 3.64 | -- | -- |
| *GED* | 2.73 | -- | -- |
| *Some College* | 30 | -- | -- |
| *AA or 2-year Degree* | 26.36 | -- | -- |
| *4-year Degree* | 28.18 | -- | -- |
| *Graduate or Professional School* | 9.09 | -- | -- |
| **Currently Enrolled in College** (N=110) | 52.73 | -- | -- |
| **Children** (N=110) | 58.18 | 1 | -- |
| **Household Income (per year)** (N=107) | | 30,000 to 79,000 | -- |
| *$29,000 and Under* | 21.50 | -- | -- |
| *$30-79,000* | 49.53 | -- | -- |
| *$80,000 and Over* | 28.97 | -- | -- |
| **Region Lived when 16** (N=107) | | | |
| *West Coast* | 62.62 | -- | -- |
| *Southwest* | .93 | --- | -- |
| *Rocky Mountains* | 4.67 | -- | -- |
| *Midwest* | 12.15 | -- | -- |
| *South* | 11.21 | -- | -- |
| *Northeast* | 6.54 | -- | -- |

| | | | |
|---|---|---|---|
| *Germany* | .93 | -- | -- |

*Unemployed respondents are responsible for the low N here

At the time that the survey is administered, the mean age of respondent is 31.45 with a standard deviation of 4.98. About 69% of my sample identify as men, 30% as women, and .91% identifies as Transmen. The majority of the sample identifies as heterosexual, however 1.82% identify as homosexual and 4.55% identify as bisexual. While the bulk of the respondents are White, 23.64% identify as a race/ethnicity other than white, including Native American, Hispanic/Latinx, Asian, African-American, and mixed race. The survey asks the respondents to identify where they lived at age 16 to get an idea of cultural norms they may have been brought up amongst during a key point in their life course. The bulk of the sample were living on the west coast at age 16 (62.62%), followed by the Midwest (12.15%), South (11.21%), Northeast (6.54%), Rocky Mountains (4.67%), and Southwest (.93%). Finally, one respondent lived in Germany when they were 16 (.93%).

Over half of the sample are employed (59.63%) while 40.37% are unemployed (though it is important to note that some of these individuals are not actively seeking work). Three-quarters of the working respondents are full time with the remaining 25% working part time. Over half of the respondents are currently enrolled in a college program. The sample is highly educated, with the median highest education achieved being an AA or other 2 year degree (26.36%). Graduate or professional degrees have been completed by 9.09% of the respondents, 30% have an AA or two-year degree, and 28.18% have a four-year degree. Merely 3.64% only obtained a high school diploma, and 2.73% have completed the GED. The average household income range is diverse, but the majority of respondents' report that their household earns above $30-79,000 annually (49.53%). The next most prevalent income range is $80,000 and greater (28.97%), with the lowest number of respondents reporting in the $29,000 and under range (21.50%).

The majority of survey respondents are married (56.35%), but 18.18% are divorced, 4.55% are separated, 11.82% are never married, and 9.09% are cohabiting and have never married. Over half of the respondents have children (58.18%), with the mean number of kids being one.

Table 2 is characterized by general stress-related variables. These questions are asked, retrospectively, across the three time frames (excluding arrests); before service, during service, and after service. I also include T tests of the difference between each life course stage (for relevant variables), in order to evaluate if the observed differences are statistically significant for this sample. As the sample size is low (110 respondents in the survey), it is likely that observed statistically significant differences are significant for the greater population.

Table 2: Descriptive Statistics for Stress Variables

| Variable | Prior to Service (Civilian) | T Test of difference between Prior and During | During Service | T Test of difference between During and After | After Service (Veteran) | T Test of difference between Prior and After |
|---|---|---|---|---|---|---|
| | *Percent* | | *Percent* | | *Percent* | |
| **Arrests** | (N=109) | | | | (N=110) | -1.9083 (ANOVA value) |
| *Never* | 82.73 | -- | -- | -- | 90.91 | |
| *Once* | 10.91 | -- | -- | -- | 5.45 | |
| *2-3 times* | 2.73 | -- | -- | -- | 2.73 | |
| *4-5 times* | 1.82 | -- | -- | -- | .91 | |
| *6+* | .91 | -- | -- | -- | -- | |
| **Military Discipline** | | | (N=109) | | | |
| *Never* | -- | -- | 66.36 | -- | -- | -- |
| *Once* | -- | -- | 23.64 | -- | -- | -- |
| *2-3 times* | -- | -- | 9.09 | -- | -- | -- |
| Was Sexually Harassed | N=106 21.82 | 0 | N=106 21.82 | -3.4671** | N=106 9.09 | -3.2705** |
| Was Sexually Assaulted | N=106 13.64 | -2.0298** | N=106 6.36 | -1.9139 | N=106 1.82 | -3.5375** |
| Was Diagnosed with Anxiety | N=108 5.45 | 5.4824** | N=108 32.73 | 1.1222 | N=108 39.09 | 6.4777** |
| Was Diagnosed with Depression | N=109 5.45 | 4.9087** | N=109 29.09 | 1.3776 | N=109 36.36 | 6.2423** |
| Was Diagnosed with PTSD | N=108 .91 | 3.8265** | N=108 12.73 | 4.1744** | N=108 32.73 | 6.8777** |
| Was Diagnosed with TBI Ever | -- | -- | -- | -- | N=109 19.09 | -- |
| Was Homeless (N=109) | 10.91 | -- | -- | -- | 15.45 | 1.043 |

*p<0.05, **p<0.01

Looking at the data in Table 2, it appears that number of arrests decreases from before service to after, as 82.73% report never having been arrested prior to service and 90.91% report no arrests after exiting, though this was not found to be a statistically significant difference at p<.05. Almost 11% of the sample was arrested once prior to service, while only 5.45% have been arrested once after. Comparing

any arrests to never arrested, 15.46% had been arrested prior to serving, while only 9.09% have been arrested after serving.

Military discipline rate is asked in place of arrests for the during service time period. While the majority of the sample has never experienced military discipline during their service (66.36%), 32.73% have. It is interesting to see that military discipline was much higher than arrest rates before or after service. As military discipline can encompass a wide variety and degree of discipline, it's hard to assess the precise meaning of this relatively high rate of discipline.

Sexual harassment prior to service is 21.82%, and remains at that level during service, with a sharp decrease after service (9.09%); the difference between during service and after being a statistically significant decrease at $p< 0.01$. This is interesting, as it is assumed that sexual harassment is high, at least for women, during service, yet the percentage is the same as prior to service. The decrease in sexual harassment between before service and after is also a statistically significant decrease at $p<0.01$. Sexual assault is also higher prior to service (13.64%), decreases during service (6.36%) (at a statistically significant level) and then drops substantially after service (1.82%), also at a highly significant level. Given the current media coverage on the high levels of sexual assault in the military, it is interesting to find that it appears lower than before service. It is possible that individuals before service were also in environments more-prone to sexual assault, including college campuses, which could lead to the increased rate before. The significant drop after service may represent removal from more previously threatening environments and a new, more stable, home life after exiting the military.

Diagnoses of anxiety and depression change considerably over the life course. Only 5.45% of individuals were diagnosed with anxiety prior to service, compared to a staggering 32.73% during service and 39.09% after service. These numbers may be an underestimate as well, as often anxiety goes undiagnosed. The increase from before service to during service is statistically significant, though the difference between during and after is not. The increase in anxiety from before service to after service is found to be significant at $p<0.01$. Depression follows a similar pattern to anxiety, though the increase after service is larger. Prior to service diagnosed depression rests at 5.45%, with an increase to 29.09%

during service (significant) and 36.36% after service (not significant). The change from before service to after service is a statistically significant increase as well. While less than one percent of individuals were diagnosed with Post-Traumatic Stress Disorder (PTSD) prior to service, almost 13% were diagnosed during (a significant increase) and almost 33% (also significant) were diagnosed after exiting the service. These increased rates of depression, anxiety, and PTSD may indicate the high degree of mental stress placed on individuals during service, and how this bleeds over into life after exiting the military. The survey only asks respondents if they were ever diagnosed with Traumatic Brain Injury once, rather than across the life course. Overall, 19.09% of respondents have been diagnosed with TBI at some point in their life.

The final variable represented in Table 2 is whether or not the respondent was ever homeless before or after service. Interestingly, rate of homeless seems to increase after service, with 10.91% indicating homelessness prior to service and 15.45% indicating homelessness after exiting the service, however this is not found to be a statistically significant increase, indicating that there is no change in rates of homelessness from before to after service.

Table 3 portrays the military-specific variables. These questions are asked retrospectively, but only at one point in time.

Table 3: Descriptive Statistics for Military Variables

| Variable | Percent | Mean | S.D. |
|---|---|---|---|
| **Age Enlisted (N=108)** | -- | 20.82 | 4.04 |
| **Age Exited Service (N=106)** | -- | 27.08 | 5.06 |
| **Branch of Service** (N=110) | | | -- |
| *Army* | 43.65 | -- | -- |
| *Navy* | 23.02 | -- | -- |
| *Marines* | 5.56 | -- | -- |
| *Air Force* | 10.32 | -- | -- |
| *Coast Guard* | 4.76 | -- | -- |
| *Reserves or National Guard* | 12.7 | | |
| **Mobilized from Reserves (N=109)** | 16.36 | -- | -- |
| **Enlisted (N=110)** | 87.27 | -- | -- |
| **Length of Service (N=107)** | | 6.38 | 3.01 |
| *Under 5 Years* | 36.45 | | |
| *More than 5 years* | 63.55 | | |
| **Deployed (N=108)** | 71.82 | -- | -- |
| **Deployed to Combat Zone (N=108)** | 66.36 | -- | -- |
| **Combat Exposure Index (N=105)** | -- | 3.50 | 2.10 |
| **Discharge Status (N=109)** | | | |
| *Honorable or Under Honorable Conditions* | 88.52 | -- | -- |
| *Medical Discharge* | 2.46 | -- | -- |
| *Other-than-Honorable Discharge* | .8197 | -- | -- |
| *Miscellaneous/Other* | 8.21 | -- | -- |
| **Transition Index (N=106)** | -- | 7.44 | 2.38 |

The mean age of enlistment for this sample is 20.82 years. The mean age exiting the service is 27.08 years old. The most common branch of service in the sample is the Army (43.65%), followed by the Navy (23.03%), Air Force (10.32%), Marines (5.56%), and Coast Guard (4.76%). In addition, 7.14% served in the Reserves and 5.56% served in the National Guard. The branch make up for these individuals is .91% Air Force Reserves, .91% Air National Guard, 8.18% Army National Guard, 10.91% Army Reserves, .91% Coast Guard Reserves, and 5.45% Navy Reserves. Of the Reserves and National Guard components, 16.36% were mobilized to active duty during their service. Just over 12% of the sample served in the military as an officer. Length of service averages just over 6 years (with 63.55% serving more than 5 years), and 71.82% of the sample has been deployed. Sixty-six percent of those surveyed were deployed to a combat zone, and the mean score on the Combat Exposure Index is 3.503. The

majority of the sample received an Honorable discharge status (88.52%), 2.47% received a medical discharge, .8197% have an Other-Than-Honorable status, and the remaining 8.21% have miscellaneous other statuses. No veterans in the sample received a Dishonorable Discharge status. In terms of the transition scale, which identifies ease of transition into the civilian world from military service, the mean score is 7.444 on a scale of 0-14, indicating that the transition process is neither hard nor easy for most veterans.

The final table, Table 4 is comprised of all the substance use variables. These questions were asked retrospectively across all three stages of the military life course. I also include T tests of the difference between each life course stage (for relevant variables), in order to evaluate if the observed differences are statistically significant for this sample. Again, since the sample size is low (110 respondents in the survey), it is likely that observed statistically significant differences are significant for the greater population.

Table 4: Descriptive Statistics for Substance Use Variables

| Variable | Prior to Service (Civilian) | | T Test between Prior & During | During Service | | T Test between During & After | After Service (Veteran) | | T Test between Prior and After |
|---|---|---|---|---|---|---|---|---|---|
| | % / N | Mean/ St. D | | % / N | Mean/St. D | | % / N | Mean/St. D | |
| **Alcohol Index** | -- / 109 | 1.81/1.14 | 5.8965** | -- / 110 | 2.51/1.09 | -14.499** | -- / 110 | 1.40/.078 | -3.5214** |
| **Marijuana Index** | -- / 107 | 1.93/2.16 | -8.9308** | --/ 108 | .150/.78 | 8.4324** | --/ 110 | 1.97/2.33 | 0.26678 |
| **Ever Tried Hard Drugs** | 12.73 / 107 | -- | -1.8272 | 6.36/ 109 | -- | 1 | 9.09/ 109 | -- | -0.94232 |
| **Type Hard Drugs Tried** | -- / 106 | | | --/ 110 | | | --/ 108 | | |
| *Cocaine* | 6.25 | -- | | .86 | -- | | 4.84 | -- | |
| *Crack* | 2.35 | -- | | -- | -- | | -- | -- | |
| *Ecstasy/MDMA/Molly* | 4.69 | -- | | 1.72 | -- | | 1.61 | -- | |
| *LSD/Acid* | 4.69 | -- | | -- | -- | | .81 | -- | |
| *Meth* | .78 | -- | | .86 | -- | | -- | -- | |
| *Mushrooms* | 8.59 | -- | | 2.58 | -- | | 6.45 | -- | |
| *Opium* | .78 | | | -- | -- | | -- | -- | |
| *Spice* | .78 | -- | | -- | -- | | .81 | -- | |
| *Salvia* | -- | -- | | .86 | -- | | -- | -- | |
| *Heroin* | -- | -- | | .86 | -- | | .81 | -- | |
| **Type Hard Drugs Regl.** | --/ 107 | -- | | --/ 110 | | | --/108 | | |
| *Cocaine* | 1.81 | -- | | -- | -- | | -- | -- | |
| *Mushrooms* | .91 | -- | | -- | -- | | .91 | -- | |
| *Ecstasy/MDMA/Molly* | .91 | -- | | .91 | -- | | -- | -- | |
| *Meth* | -- | -- | | .91 | -- | | -- | -- | |
| *Spice* | -- | -- | | -- | -- | | .91 | -- | |
| **Prescription Drugs Tried** | 15.45/ 108 | -- | -2.7476** | 5.45/ 110 | -- | 0.33197 | 6.36/ 109 | -- | -2.7528** |
| **Prescription Drugs Regl.** | 3.64 / 107 | -- | 1 | 1.82/ 110 | -- | 0.57558 | 2.73/ 109 | -- | -0.44554 |

*p<0.05, **p<0.01

The changing scores on the alcohol index provide interesting insight into attitudes toward alcohol and the military. Prior to service the average score is 1.81 out of 5 (with the highest meaning high rates of use), indicating relatively low levels of alcohol use. During service this increases to 2.51 (a statistically significant increase), and after drops down below use before service, with a score of 1.40 (also significant). Overall, I find that the decrease in alcohol use from before service and after service to be statistically significant at $p<0.01$. This supports the idea that alcohol use increases during service, and once removed from the environment (be it stress, the culture, etc.), decreases substantially, and to lower amounts than even before service.

The marijuana index is on a scale from 0-6, with the highest score indicating high rates of marijuana use. Prior to service marijuana use is about 1.93, which drops substantially (and significantly) during service to .150. This is most likely due to the military's zero-tolerance policies on drug use. After service, marijuana use increases significantly back to about the same rate prior to service, 1.97. In fact, I find that there is no statistically significant difference between rates of marijuana use before and after service. This may imply that veterans are either resuming a habit they enjoyed prior to service, or are perhaps they are using marijuana as a mechanism to handle stress after having left the service (as indicated by the high levels of depression, PTSD, and anxiety after service in Table 2).

Based on the descriptive statistics in the table, it appears that hard drug use is more prevalent before service (12.73%), dips during service (6.36%), and increases after service (9.09%), although not to the level it is prior to joining the military. Despite these observations, none of the differences were found to be statistically significant. These trends may be influenced by a variety of factors, including age, the military's zero-tolerance policy on drug use while serving, and stress, though it is likely that the extremely low number of individuals using hard drugs is contributing to the lack of significant differences. When taking *type* of hard drug use into account, it appears the majority of individuals experimented with cocaine prior to service (6.25%), followed by several psychedelic drugs; Ecstasy/Molly/MDMA (4.69%), LSD/Acid (4.69%), and Mushrooms (8.59%). Experimentation with more serious drugs like opium (.78%), crack-cocaine (2.35%) and meth (.78%) are very low. One

individual also experimented with spice, also known as synthetic marijuana, prior to service (.78%). As for hard drugs *regularly* used prior to service, cocaine (1.81%), mushrooms (.91%) and Ecstasy/Molly/MDMA (.91%) were the only drugs used, and at very low rates. It appears that drug use prior to service, is low and primarily experimental. The experimental drugs of choice seem to be psychedelic in nature.

Hard drug use during service is even more slight than before. Again, the primary drugs tried and regularly used are psychedelics, with 1.72% trying Ecstasy/MDMA/Molly and .91% regularly using it, 2.58% trying mushrooms, and .86% trying salvia. Cocaine was tried at .86% during service, along with Meth, and Heroin. Meth was the only drug other than Ecstasy/MDMA/Molly used regularly during service, at .91%. Despite current news coverage on the spice epidemic in the military, none of the respondents in this sample used spice during their service.

After exiting the military, the primary drugs tried are cocaine (4.84%) and psychedelic drugs (mushrooms at 6.45%, ecstasy/MDMA/molly at 1.61%, an LSD/Acid at .81%). One individual tried spice (.81%), and only one tried heroin (.81%). In terms of regular use, mushrooms are used regularly at .91% and spice is used regularly at .91%. Despite the image of drug use being rampant among veterans, my sample continues to have relatively low drug use after service, and the drugs being used seem to be for experimentation and are primarily party and/or social drugs. This implies that veterans who are heavily using drugs may be from different eras of service other than the post-9/11 era, which this study examines.

Recreational use and abuse of prescription narcotics is another area in which the media has painted a picture of rampant drug use amongst veterans. In this sample, 15.45% of respondents have tried prescription drugs prior to service, with 3.64% regularly abusing them. During service the numbers drop to 5.45% trying prescription narcotics recreationally (a statistically significant difference) and only 1.82% regularly abusing them (not significant). Finally, after service the numbers increase from during (not significant), but are lower than prior to service, with only 6.46% trying (a statistically significant difference compared to before service) and 2.73% regularly abusing prescription drugs (not significant). Again, these findings are surprising. While prescription abuse does exist, it is much lower than many may

have expected. It is important to once again point out that the very low numbers of prescription drug abuse, particularly for regular use, may be contributing to the lack of statistical significance in differences across the life course.

**Explaining Substance Use**

Not pictured in the tables, our survey also asked the respondents about their reasoning for trying or regularly using the various substances. Individuals were asked to check all that apply for these questions. The results can be visualized in the following charts.

Figure 1: Reasons for Alcohol Use Across the Life Course

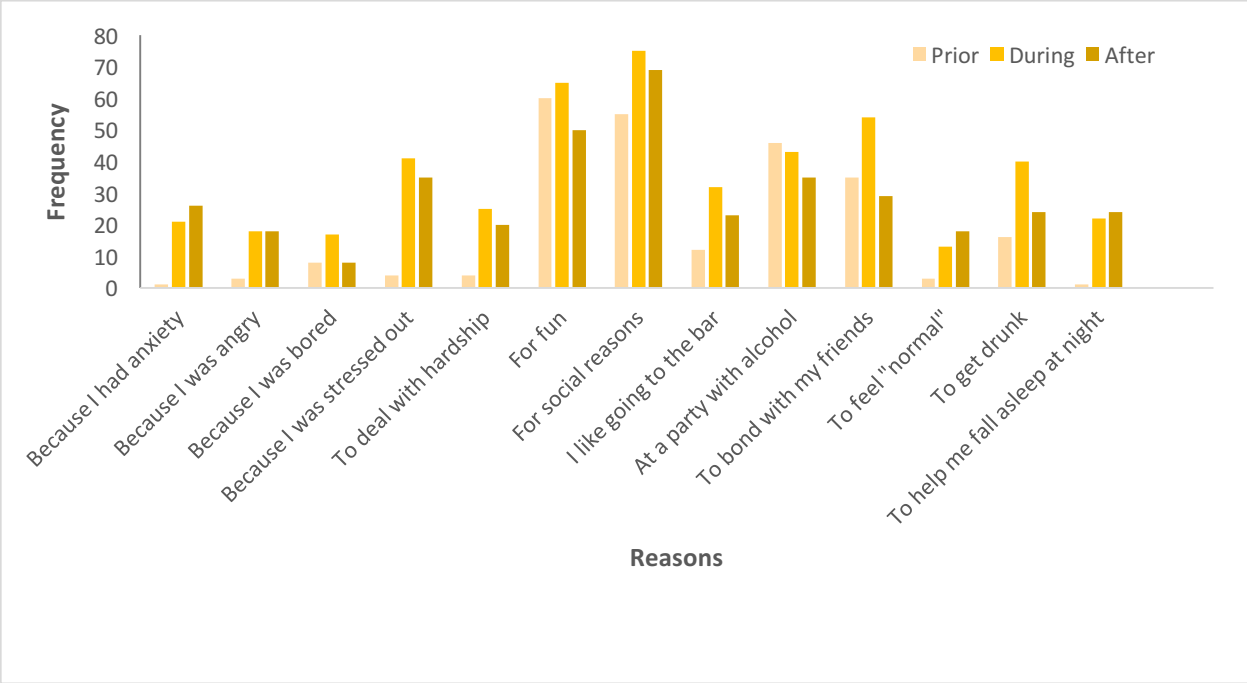


Figure 2: Reasons for Marijuana Use Across the Life Course

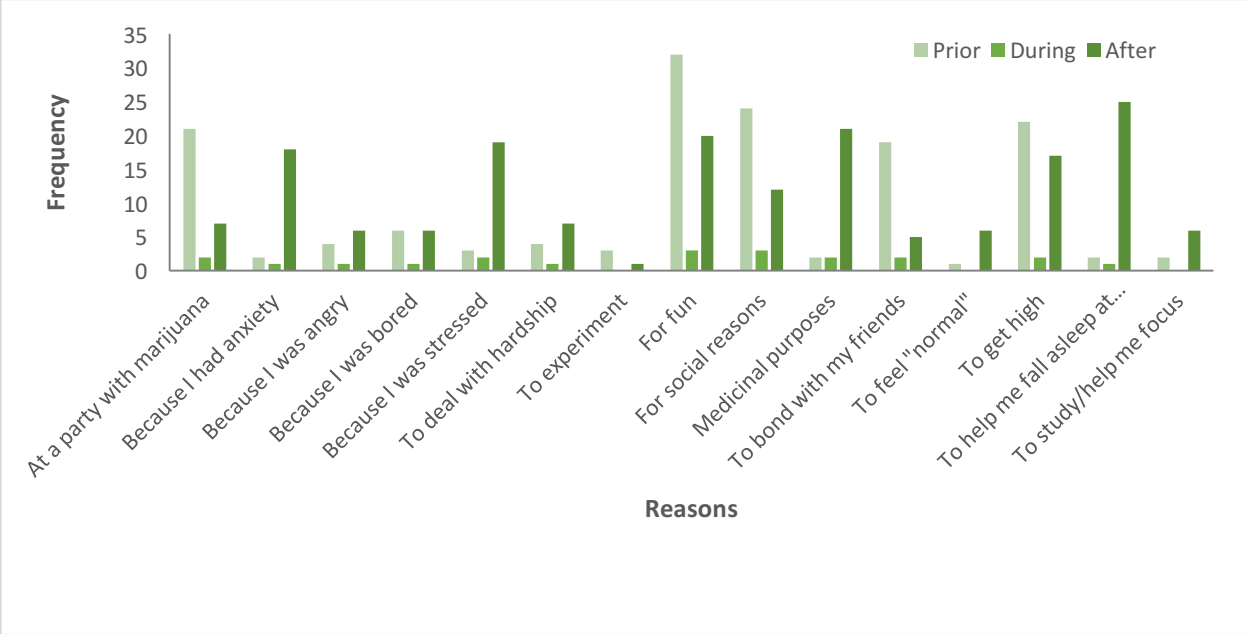



Figure 3: Reasons for Hard Drug Use Across the Life Course

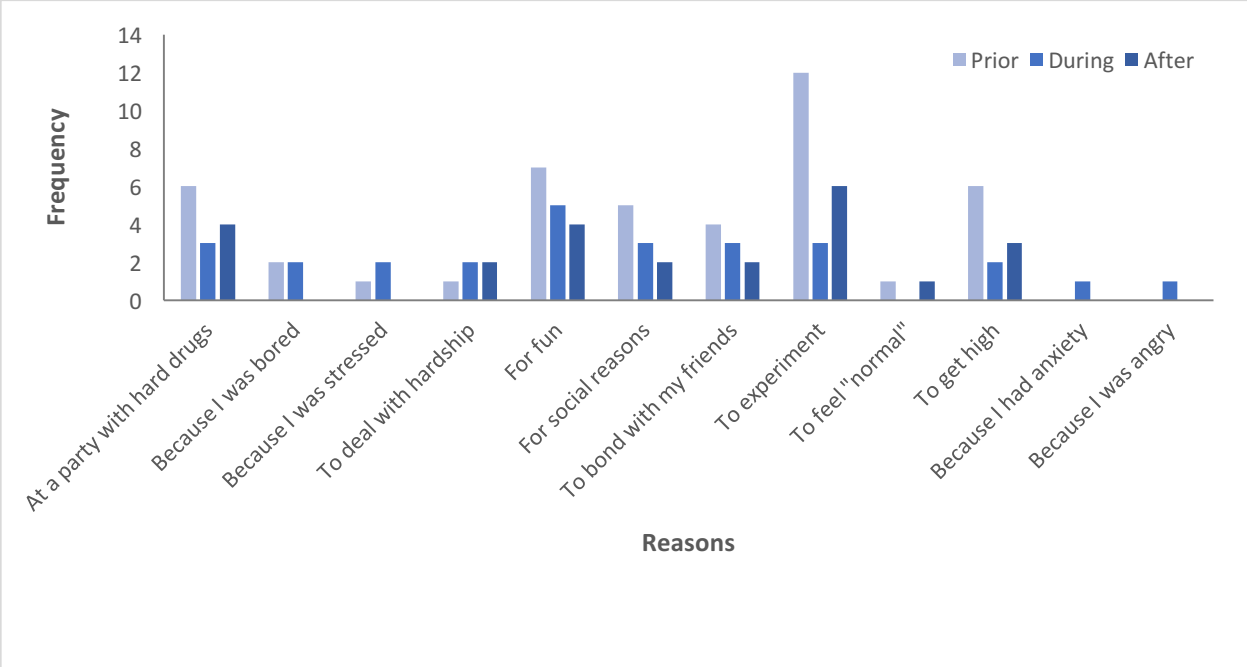
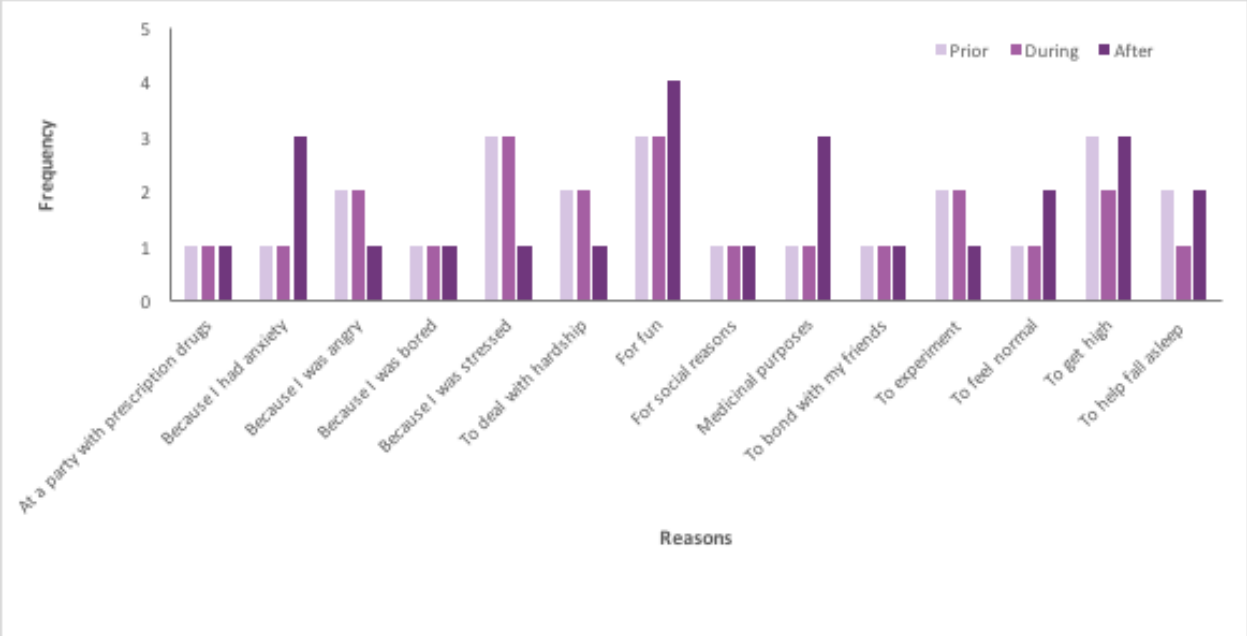


Figure 4: Reasons for Prescription Drug Misuse Across the Life Course




As seen in the charts, the primary reasons for using alcohol prior to service are primarily social; "for fun" (18.35%), "for social reasons, visiting with friends" (16.21%), accessibility in "being at a party where alcohol was served" (14.07%), and "to bond with friends" (10.40%). During service these reasons were maintained; "for fun" dropping to 11.64%, "for social reasons, visiting with friends" landing at 13.64%, and, "to bond with my friends" coming in at 9.82%. Last, alcohol use after service mimicked the reasons prior to service, with "for fun" representing 18.29%, "for social reasons, visiting with friends", at 16.16%, "being at a party where alcohol was served" at 14.02%, and "to bond with my friends" at 10.67%. Answers that were not popular across any stage are the stress-related reasons, like drinking due to anxiety, stress, boredom, or because life is difficult. While these reasons did increase during service, they dropped back down after, and were always under 4.5%, though "because I was stressed out" hit 7.45% during service.

Reasons for using marijuana prior to service were identical to the reasons for using alcohol – "for fun" (13.48%), "for social reasons, visiting people" (10.43%)-- although "to get high" also scored high, at 9.57%. During service marijuana use is very low (81.54% said they never used), however the reasons for

use are across the board. The most common reasons re still “for fun” (2.31%), and “for social reasons, visiting with people” (2.31%), followed by “to get high” (1.54%), “to bond with my friends” (1.54%), “at a party where marijuana was used” (1.54%), and “because I was stressed” (1.54%). After service some more unique trends appear. The most common reasons for using marijuana is “to help me fall asleep at night”, with 8.40%, followed by “for fun” at 8%, “medicinal purposes” at 7.20%, and “because I was stressed” at 6%. “Because I had anxiety” also ranks toward the top of reasons, with 5.40%. It seems that marijuana, rather than alcohol, is used as more of a coping mechanism after service.

As assumed, the primary reason behind hard drug use prior to service is, “to experiment” (7.64%), followed by, “for fun” (4.86%) and accessibility; being at a party where hard drugs were present (4.17%). During service the primary reasons for use are “for fun” (3.70%), followed by “social reasons, visiting with people”, “to bond with my friends”, “To experiment”, and “at a party where drugs were present”, all at 2.22%. Finally, after service, hard drug use is primarily used “to experiment” once again (4.72%). “For fun”, and “at a party where drugs were present” were also noteworthy, at 3.15% each. Overall, hard drug use is low throughout the military life course, and is primarily attributed to experimentation or social reasons.

Last are the reasons behind prescription drug abuse. For those that abused prescription narcotics prior to service, the key reasons are, “for fun” (6.47%), “to get high” (5.04%), and “at a party where prescription drugs were being abused” (4.32%). During service it is hard to find a real trend in reasons behind use. “To get high”, “medicinal purposes beyond my prescription”, “for fun”, and “because I was stressed”, are all at 2.27%. These reasons are followed by, “because I was angry”, “because my life is hard and I’ve experienced hardships”, “to experiment”, and “to help me fall asleep at night”, each at 1.52%. After exiting the military, prescription drug abuse is primarily used “for fun” (3.03%), “to get high” (2.27%), “medicinal purposes beyond my prescription” (2.27%), and “because I had anxiety” (2.27%). Though rates of use are low, it appears that prescription drug abuse is primarily used for fun/experimentation before service, for fun and coping during service, and for fun and coping with psychological or physical ailments after service.

**Demographic Comparisons**

In addition to the basic demographics, I analyze several cross-tabulations in order to compare a variety of socio-demographic characteristics across the different types of substances. For each cross tab I administer a variety of tests (depending on the variables in question) to identify if the relationship between the two variables is statistically significant. I employ chi-squares, ANOVA analyses, and T tests. I examine differences in substance use across gender, race, length of military service, branch of service, and combat. Due to extremely low numbers of respondents *regularly* using hard and prescription drugs I have chosen to exclude these categories from the analyses.

*Gender*

Alcohol

Cross-Tab 1.1: Gender & Alcohol Index Before Service

| **Alcohol Index/ Gender*** | Man $\bar{X}$=1.84 | Woman $\bar{X}$=1.81 | Total |
|---|---|---|---|
| 0-.99 | 24.00% | 15.15% | 21.29% |
| 1-1.99 | 20.00% | 36.36% | 25.00% |
| 2-2.99 | 46.67% | 45.45% | 45.47% |
| 3-3.99 | 6.67% | 3.03% | 5.56% |
| 4-4.99 | 4.00% | 0.00% | 2.78% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=108) | 100.00% | 100.00% | 100.00% |

*T test value of 0.104

Cross-Tab 1.2: Gender & Alcohol Index During Service

| **Alcohol Index/ Gender*** | Man $\bar{X}$=2.60 | Woman $\bar{X}$=2.30 | Total |
|---|---|---|---|
| 0-.99 | 7.89% | 9.09% | 8.26% |
| 1-1.99 | 21.05% | 24.24% | 22.02% |
| 2-2.99 | 30.26% | 45.45% | 34.86% |
| 3-3.99 | 32.89% | 15.15% | 27.525 |
| 4-4.99 | 7.89% | 6.06% | 7.34% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 1.347

Cross-Tab 1.3: Gender & Alcohol Index After Service

| **Alcohol Index/ Gender*** | Man $\bar{X}$=1.43 | Woman $\bar{X}$=1.30 | Total |
|---|---|---|---|
| 0-.99 | 19.74% | 36.36% | 24.77% |
| 1-1.99 | 55.26% | 45.45% | 52.29% |
| 2-2.99 | 25.00% | 15.15% | 22.02% |
| 3-3.99 | 0.00% | 3.03% | 0.92% |
| 4-4.99 | 0.00% | 0.00% | 0.00% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 0.746

Cross-Tabs 1.1-1.3 shows rates of alcohol use (using the alcohol index) for men and women before, during, and after military service. In order to increase read-ability of the graphs, the alcohol index has been grouped into ranges of scores. In this sense, a score of "0" means any score between 0 and .999 on the scale. Based on the graph for alcohol use, it is apparent that the majority of both men and women scored in the 0-2.999 range. In general, it appears that men's and women's alcohol use prior to service are quite similar. More men (24%) scored in the 0-.99 range than women (15.15%), but over 10% of men scored from 3.0-4.99 range, which indicates heavier alcohol use. I conducted a T test to analyze statistical significance for the difference between men's alcohol use and women's alcohol use prior to service. The results of the T test indicate that there is no statistically significant difference between men and women's rates of alcohol use prior to service (value of 0.104). This can likely be explained by age, as previous literature highlighted that adolescent rates of substance use are similar across gender.

During service, similar gendered patterns are present for alcohol use, with men appearing to drink more heavily than women. While 21.22% of women score above a three on the alcohol index, 40.78% of men scored above this level. However, both men and women seem to drink at higher rates during service than they do prior to service. The results of the T test indicate, again, that there is no statistically significant difference between men and women's rates of alcohol use during service (value of 1.347).

After exiting the military, 81.81% of women drink at a level below 2.0, compared to 75% of men. Though men still appear to drink more than women, one women does score higher on the alcohol index than any of the men after service (3.03% compared to 0%, respectively). It is apparent that men drink

more heavily than women both before, during, and after service, but there is great variety across the individuals who are drinking. Looking at the mean score on the alcohol index for men and women, men continually score *slightly* above the women for each stage in the life course; before (1.84 to 1.81, respectively), during (2.60 to 2.30, respectively), and after (1.43 to 1.30, respectively). These means are more visually useful in showing that alcohol intake, across gender, appears to increase greatly during service, and after service it drops much lower than even before service. Once again the T test specifies that the subtle difference between men and women's alcohol use after service that is apparent in the cross-tabulation is not statistically significant (value of 0.746). This indicates that men and women are roughly similar in their alcohol behaviors across the military life course, though the lack of statistical significance may be due to low sample size. It is possible that a larger sample size would reinforce the subtle increase in men's drinking habits compared to women's during and after service.

Marijuana

Cross-Tab 1.4: Gender & Marijuana Index Before Service

| **Marijuana Index/Gender*** | Man $\bar{X}$=2.12 | Woman $\bar{X}$=1.55 | Total |
|---|---|---|---|
| 0-.99 | 50.00% | 62.50% | 53.77% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 27.03% | 15.63% | 23.58% |
| 4-4.99 | 10.81% | 21.88% | 14.15% |
| 5-5.99 | 10.81% | 0.00% | 7.55% |
| 6 | 1.35% | 0.00% | 0.94% |
| Total (N=106) | 100.00% | 100.00% | 100.00% |

*T test value of 1.303

Cross-Tab 1.5: Gender & Marijuana Index During Service

| **Marijuana Index/Gender*** | Man $\bar{X}$=0.22 | Woman $\bar{X}$=0 | Total |
|---|---|---|---|
| 0-.99 | 94.74% | 100.00% | 96.33% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 2.63% | 0.00% | 1.83% |
| 4-4.99 | 2.63% | 0.00% | 1.83% |
| 5-5.99 | 0.00% | 0.00% | 0.00% |
| 6 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 2.0279, significant at $p<.05$

Cross-Tab 1.6: Gender & Marijuana Index After Service

| **Marijuana Index/Gender*** | Man $\bar{X}$=1.97 | Woman $\bar{X}$=2.05 | Total |
|---|---|---|---|
| **0-.99** | 56.76% | 54.55% | 56.07% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 17.57% | 21.21% | 18.69% |
| 4-4.99 | 9.46% | 9.09% | 9.35% |
| 5-5.99 | 10.81% | 12.12% | 11.21% |
| 6 | 5.41% | 3.03% | 4.67% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*T test value of -0.161

Cross-Tabs 1.4-1.6 show rates of marijuana use (using the marijuana index) for men and women before, during, and after military service. Just like the alcohol index, the marijuana scores have been categorized into ranges in the same manner (with a score of "0" indicating an index score of below 1, a score of 2 indicating a score below 2 but no lower than 1, etc.).

Prior to joining the military, men's and women's marijuana use is very similar. About 23% of men score a four or above on the marijuana index compared to 22% of women. Despite this similarity, more men score higher on the index overall, with 12.16% scoring a five or above compared to 0 women scoring above a 4.99. The results of the T test indicate that there is no significant difference between men's and women's marijuana use prior to service (value of 1.303). It is possible that the subtle increase for men may become significant with a larger sample size.

During service it is interesting to observe that 100% of women in the sample abstain from marijuana use, compared to 94.74% of men. It's appears that a handful of men are more willing to risk the zero-tolerance policy than women, with 4 men using marijuana. The value of the T test indicates that this is a significant difference (value of 2.0279 at $p<.05$), indicating that men indeed use marijuana at higher rates than women during service.

Finally, marijuana patterns after service are similar for men and women. 56.76% of men compared to 54.54% of women score between a 0 and .99 on the marijuana index. While 94.35% of men fall in the 5.99 and below range, 96.97% of women fall below 5.99. To reiterate, men's and women's marijuana use seems relatively similar before and after service. During service some men were willing to

risk marijuana use, but not many, compared to zero women trying marijuana while enlisted. Looking at the mean score on the marijuana index for men and women, men tend to score much higher than the women for each stage in the life course except for after; before (2.12 to 1.55), during (.22 to 0), and after (1.97 to 2.05). After service men and women score nearly the same. The T test reveals that the difference between men's and women's marijuana use after service is not statistically significant (value of -0.161), reinforcing that men's and women's marijuana use is similar before and after service.

Hard Drug Experimentation

Cross Tab 1.7: Gender & Hard Drugs Tried Before Service

| **Hard Drugs Tried/Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, never tried | 68.89% | 90.32% | 74.38% |
| Yes, tried | 31.11% | 9.68% | 25.62% |
| Total (N=121) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 2.173

Cross Tab 1.8: Gender & Hard Drugs Tried During Service

| **Hard Drugs Tried/Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, never tried | 88.46% | 100.00% | 91.89% |
| Yes, tried | 11.54% | 0.00% | 8.11% |
| Total (N=111) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 3.344

Cross Tab 1.9: Gender & Hard Drugs Tried After Service

| **Hard Drugs Tried/Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, never tried | 81.61% | 80.00% | 81.15% |
| Yes, tried | 18.39% | 20.00% | 18.85% |
| Total (N=122) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 11.38, significant at $p<0.01$

Cross-Tabs 1.7-1.9 show rates of hard drugs *tried* for men and women, before, during, and after military service. For the men, 68.89% abstained from hard drugs prior to service, compared to 90.32% of women. Mushrooms (8.89%) and Cocaine (7.78%) are the most prevalent drugs tried, along with Ecstasy/MDMA/Molly (4.44%), LSD/Acid (5.56%), Crack-cocaine (3.33%) and Spice (1.11%). Only three women tried hard drugs prior to service, with 1 (3.23%) trying cocaine and two trying mushrooms (6.45%). In general, experimentation with hard drugs is more prevalent among the men in the sample than

the women prior to service. I employ the use of chi-squares in order to assess significance in the differences between rates of hard drug experimentation for men and women. The results of the chi-square analysis indicate that there is no statistically significant relationship between gender and hard drug experimentation (value of 2.173).

During service, all 33 women indicate that they abstain from trying hard drugs, compared to 88.46% of men. Of the nine men that did experiment with hard drugs, the majority tried mushrooms (3.85%), followed by Ecstasy/MDMA/Molly (2.56%). Cocaine, Meth, Salvia, and Spice were each tried by one male respondent (1.28%). For both men and women, drug experimentation is a low priority during service, though more men were willing to try than women. Despite these differences, the results of the chi-square analysis indicate that the relationship is not statistically significant (value of 3.344), signifying that indeed drug experimentation during service is low and does not vary across gender.

After service, many more women are willing to experiment with hard drugs than they were prior to or during service (five women compared to three before and zero during). Despite this increase from before service, men still outnumber women in drug experimentation (18.39% compared to 14.29%, respectively). The majority of men try mushrooms (8.05%), followed by Ecstasy/MDMA/Molly (3.35%), Cocaine (3.35%), LSD/Acid (2.3%), and Spice (1.12%). For the women, the majority experiment with cocaine (8.57%), followed by Mushrooms (5.71%). In general, men appear to experiment with hard drugs at higher rates than women, though women's experimentation increases after exiting the military. Interestingly, the results of the chi-square analysis indicate that there is indeed a relationship between gender and hard drug experimentation (value of 11.38 at $p<0.01$). Thus, it is apparent from these data that men are more likely to experiment with drugs after service than women.

Prescription Drug Use

Cross Tab 1.10: Gender & Prescription Drugs Tried Before Service

| **$R_x$ /Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, Never | 81.33% | 90.63% | 84.11% |
| Yes, Tried | 18.67% | 9.38% | 15.89% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 1.649

Cross Tab 1.11: Gender & Prescription Drugs Tried During Service

| **$R_x$ /Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, Never | 96.05% | 90.91% | 94.50% |
| Yes, Tried | 3.95% | 9.09% | 5.50% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 1.239

Cross Tab 1.12: Gender & Prescription Drugs Tried After Service

| **$R_x$ /Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, Never | 93.42% | 96.88% | 94.44% |
| Yes, Tried | 6.58% | 3.13% | 5.56% |
| Total (N=108) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 15.153, significant at $p<0.01$

Cross-Tabs 1.10-1.11 show prescription drugs recreationally *tried* for men and women, before, during, and after service. Prior to joining the military, 18.67% of men tried prescription drugs recreationally, compared to 9.38% of women. Despite this apparent difference, according to the chi-square analysis the difference is not statistically significant (value of 1.649), indicating no relationship between gender and prescription drug experimentation. This is likely due to the low sample size and low numbers of respondents actually experimenting with prescription narcotics.

During service rates of prescription drug misuse decreases for men during service, to only 3.95%, but remains at the same level for the women. Again, the chi-square analysis finds no statistically significant relationship (value of 1.239).

Finally, after exiting the service experimentation increases for men, but is still lower than prior to service (6.58%). Only one women experimented with prescription narcotics after exiting the military. It appears men are generally more experimental than women when it comes to prescription drug abuse, though both abuse at relatively low rates. This finding is reinforced by the results of the chi-square test, indicating that a relationship between gender and prescription drug experimentation does indeed exist (value of 15.153 at $p<0.01$).

*Race*

Alcohol

Cross-Tab 2.1: Race & Alcohol Index Before Service

| **Alcohol Index/ Race*** | White $\bar{X}$=1.90 | Nonwhite $\bar{X}$=1.59 | Total |
|---|---|---|---|
| 0-.99 | 19.28% | 28.00% | 21.30% |
| 1-1.99 | 25.30% | 24.00% | 25.00% |
| 2-2.99 | 44.58% | 48.00% | 45.37% |
| 3-3.99 | 7.23% | 0.00% | 5.56% |
| 4-4.99 | 3.61% | 0.00% | 2.78% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=108) | 100.00% | 100.00% | 100.00% |

*T test value of 1.272

Cross-Tab 2.2: Race & Alcohol Index During Service

| **Alcohol Index/ Race*** | White $\bar{X}$=2.53 | Nonwhite $\bar{X}$=2.55 | Total |
|---|---|---|---|
| 0-.99 | 7.23% | 7.69% | 7.34% |
| 1-1.99 | 20.48% | 26.92% | 22.02% |
| 2-2.99 | 36.14% | 34.62% | 35.78% |
| 3-3.99 | 30.12% | 19.23% | 27.52% |
| 4-4.99 | 6.02% | 11.54% | 7.34% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of -0.074

Cross-Tab 2.3: Race & Alcohol Index After Service

| **Alcohol Index/ Race*** | White $\bar{X}$=1.37 | Nonwhite $\bar{X}$=1.54 | Total |
|---|---|---|---|
| 0-.99 | 25.30% | 19.23% | 23.85% |
| 1-1.99 | 50.60% | 57.69% | 52.29% |
| 2-2.99 | 24.10% | 19.23% | 22.94% |
| 3-3.99 | 0.00% | 3.85% | 0.92% |
| 4-4.99 | 0.00% | 0.00% | 0.00% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of -0.915

Cross-Tabs 2.1-2.3 show alcohol use across the military life course for white and nonwhite respondents. Due to low numbers of black, Hispanic, Asian, Native American and mixed-race respondents in the sample I have selected to combine all non-white respondents into one group. Alcohol use for both white and nonwhite respondents is primarily in the 0-2.99 range, no nonwhite participants scored above this range. On the other hand, 7.23% of white respondents scored between 3 and 3.99 on the

alcohol scale, and 3.61% scored between 4 and 4.99. This indicates that while both white and nonwhite participants used alcohol prior to service, the white respondents appear to be slightly heavier drinkers. When examining the means of alcohol use prior to service, nonwhite respondents score an average of 1.59 on the alcohol index compared to white individuals who score a 1.90. Regardless of these findings, the results of the T test indicate that the relationship between alcohol use and race is not statistically significant prior to entering the military (value of 1.272).

During service, drinking behaviors are much higher on the alcohol scale. At this point in the life course, for both white and nonwhite respondents, less than 8% score in the 0-.99 range. The bulk for both white and nonwhite is centered in the 2-2.99 range. Once again, white respondents are more likely to be heavy drinkers, with 36.14% scoring above 3, compared to only 30.77% of nonwhite respondents. Again, comparing means tends to even out the results across white and nonwhite respondents. White respondents during service appear to have an average alcohol index of 2.53 compared to nonwhite respondents who score a 2.55. The results of the T test support these observations; I find that the relationship between race and alcohol consumption is not statistically significant (value of -0.074).

After exiting the service, alcohol use appears to drop, as the majority of white and nonwhite respondents score between 1-1.99 on the alcohol scale. For the most part, there aren't any notable differences between the white and nonwhite respondents, as slightly more white respondents score in the 2-2.99 range, but one nonwhite respondents scores in the 3-3.99 range. After service means are slightly higher for nonwhite respondents than nonwhite respondents, with 1.54 and 1.37, respectively. The results of the T test reinforce these findings, indicating that there is no statistically significant relationship between race and alcohol consumption (value of -0.915).

Overall it appears that white and nonwhite respondents are quite similar in alcohol consumption across the military life course, though low numbers of nonwhite respondents may skew the results.

Marijuana

Cross-Tab 2.4: Race & Marijuana Index Before Service

| **Marijuana Index/Race*** | White $\bar{X}$=2.10 | Nonwhite $\bar{X}$=1.42 | Total |
|---|---|---|---|
| 0-.99 | 50.00% | 66.67% | 53.77% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 26.83% | 12.50% | 23.58% |
| 4-4.99 | 13.41% | 16.67% | 14.15% |
| 5-5.99 | 8.54% | 4.17% | 7.55% |
| 6 | 1.22% | 0.00% | 0.94% |
| Total (N=106) | 100.00% | 100.00% | 100.00% |

*T test value of 1.398

Cross-Tab 2.5: Race & Marijuana Index During Service

| **Marijuana Index/Race*** | White $\bar{X}$=.20 | Nonwhite $\bar{X}$=0 | Total |
|---|---|---|---|
| 0-.99 | 95.18% | 100.00% | 96.33% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 2.41% | 0.00% | 1.83% |
| 4-4.99 | 2.41% | 0.00% | 1.83% |
| 5-5.99 | 0.00% | 0.00% | 0.00% |
| 6 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 2.0244, significant at $p<0.05$

Cross-Tab 2.6: Race & Marijuana Index After Service

| **Marijuana Index/Race*** | White $\bar{X}$=2.19 | Nonwhite $\bar{X}$=1.36 | Total |
|---|---|---|---|
| 0-.99 | 53.09% | 65.38% | 56.07% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 17.28% | 23.08% | 18.69% |
| 4-4.99 | 9.88% | 7.69% | 9.35% |
| 5-5.99 | 13.58% | 3.85% | 11.21% |
| 6 | 6.17% | 0.00% | 4.67% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*T test value of 1.804, significant at $p<0.10$

Cross-Tabs 2.4-2.6 show marijuana use before, during, and after service for white and nonwhite respondents. Prior to military service, the majority of white and nonwhite respondents scored in the 0-.99 range on the marijuana use index. Overall, it appears that white respondents are more likely to score high on the marijuana use scale. In each age range, white respondents have higher frequencies excluding the 4-

4.99 range. Looking at the means, the mean score on the marijuana index for nonwhite respondents is 1.42, compared to a score of 2.10 for white respondents. Regardless of these observations, the results of the T test indicate that there is no significant relationship between race and marijuana use prior to service (value of 1.398).

During service, marijuana use is practically non-existent, with only four individuals using marijuana at all. There are no nonwhite respondents that use marijuana during service. The low numbers make it hard to draw adequate conclusions, however it is arguable that low rates of marijuana present during service are due to the military's zero-tolerance policy on drug use. Examining the means on the marijuana index, the mean score for white respondents is .2 compared to a 0 for nonwhite respondents. The results of the T test find that during service the relationship between race and marijuana use is statistically significant at $p<0.05$ (value of 2.0244), indicating that white respondents are more likely to use than nonwhite. However, it is important to keep in mind the low sample size in this portion of the analyses.

After military service, white respondents more frequently score higher on the marijuana index, with 39.51% scoring above a 4, compared to only 11.54% of nonwhite. A variety of factors may influence this substantial racial difference, including education, employment, and income. Due to nonwhite respondents' lower rates of marijuana use prior to service as well, it's possible that the majority of these respondents are just less interested in or have less access to marijuana than the white respondents. Comparing the means on the marijuana scale, after service the mean for white respondents is 2.19 compared to a mean of 1.36 for nonwhite respondents. This is a large difference between the two, indicating that while both white and nonwhite respondents use marijuana after service, white respondents are more likely to use marijuana at heavier rates. The results of the T test support this finding, indicating that there is a significant relationship between race and marijuana use after service at $p<0.10$ (value of 1.804).

Hard Drug Experimentation

Cross Tab 2.7: Race & Hard Drugs Tried Prior to Service

| **Hard Drugs Tried/Race*** | White | Nonwhite | Total |
|---|---|---|---|
| No, never tried | 86.59% | 82.61% | 84.11% |
| Yes, tried | 13.41% | 17.39% | 14.02% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.021

Cross Tab 2.8: Race & Hard Drugs Tried During Service

| **Hard Drugs Tried/Race*** | White | Nonwhite | Total |
|---|---|---|---|
| No, never tried | 92.77% | 96.15% | 76.15% |
| Yes, tried | 7.23% | 3.85% | 23.85% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.246

Cross Tab 2.9: Race & Hard Drugs Tried After Service

| **Hard Drugs Tried/Race*** | White | Nonwhite | Total |
|---|---|---|---|
| No, never tried | 90.24% | 96.00% | 91.59% |
| Yes, tried | 9.76% | 4.00% | 8.41% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.246

Cross-Tabs 2.7-2.9 shows hard drugs tried before, during, and after service for white and nonwhite respondents. Prior to service, hard drug experimentation is low, but slightly more prevalent amongst the nonwhite respondents (17.39%) than the white respondents (13.41%). That being said, only four nonwhite respondents experimented with hard drugs prior to service compared to 11 white respondents. The results of the chi-square analysis indicate that this relationship is not statistically significant (value of 0.021). It is hard to make accurate predictions based on such small numbers of experimenters, but it's likely that rates of hard drug experimentation have to do with the region each individual grew up in, home environment, and/or types of friends.

During service, hard drug is low as well, but actually more prevalent than marijuana use. Only 7.2% of white respondents experiment with hard drugs during service compared to 3.85% of nonwhite respondents. These low numbers are likely due to the military's zero-tolerance policy on drug use. The

results of the chi-square test reveal that again, no statistically significant relationship exists between race and hard drug experimentation (value of 0.246).

After service drug experimentation is slightly higher for white respondents, but doesn't change from the rate during service for nonwhite respondents (though the N size changes slightly so the percentage changes). In both service and after only one nonwhite respondent experimented with drugs compared to 8 (9.76%) of white respondents. This relationship is not statistically significant according to the results of the chi-square test (value of 0.246). Since this is purely experimentation ("trying" hard drugs) vs. regular use, it seems less likely that these respondents are using hard drugs as a coping mechanism. More likely I would suspect it has to do with the social setting veterans are a part of after service.

Prescription Drug Experimentation

Cross-Tab 2.10: Race & Prescription Drugs Tried Prior to Service

| **$R_x$ Tried/Race*** | White | Nonwhite | Total |
|---|---|---|---|
| No | 82.93% | 88.00% | 84.11% |
| Yes | 17.07% | 12.00% | 15.89% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.087

Cross-Tab 2.11: Race & Prescription Drugs Tried During Service

| **$R_x$ Tried/Race*** | White | Nonwhite | Total |
|---|---|---|---|
| No | 93.98% | 96.15% | 94.50% |
| Yes | 6.02% | 3.85% | 5.50% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*Chi-square value of $1.126e^{-30}$

Cross-Tab 2.12: Race & Prescription Drugs Tried During Service

| **$R_x$ Tried/Race*** | White | Nonwhite | Total |
|---|---|---|---|
| No | 93.90% | 92.31% | 75.93% |
| Yes | 6.10% | 7.69% | 6.48% |
| Total (N=108) | 100.00% | 100.00% | 100.00% |

*Chi-square value of $2.27e^{-30}$

Cross-Tabs 2.10-2.12 show prescription drugs *tried* recreationally before, during, and after service for white and nonwhite respondents. Prior to service, 17.07% of white respondents have experimented with prescription drugs, compared to only 12% of nonwhite respondents. This relationship is not statistically significant according to the results of the chi-square test (value of 0.087).

During service the rate of prescription experimentation drops. Likely due to the military's zero-tolerance policy on drug use, only 6.02% of white respondents and 4% of nonwhite respondents' experiment with prescription drugs at this stage. This difference is not found to be statistically significant after running a chi-square analysis (value of $1.126e^{-30}$).

After service the rates of prescription drug experimentation are roughly the same as during service – with 6.09% of white respondents using and 7.69% of nonwhite respondents using. This subtle difference is again, not statistically significant (value of $2.27e^{-30}$) after conducting the chi-square test. Once again, rates are essentially too low in this sample to draw real conclusions, but it is also possible that trying prescription drugs recreationally is just not common among post-9/11 veterans.

*Branch of Service*

Due to low sample size I chose to condense the number of categories for the branch of service variable in order to produce more useful results. The branches I highlight are Army, Marines, and Navy, with an Other category to combine all other branches represented (including Air Force, Coast Guard, Reserves, and National Guard). The results of the analyses are presented below.

Alcohol

Cross-Tab 3.1: Branch of Service and Alcohol Use Prior to Service

| **Alcohol Index/ Branch*** | Army $\bar{X}$=1.76 | Marines $\bar{X}$=2.16 | Navy $\bar{X}$=1.76 | Other $\bar{X}$=1.92 | Total |
|---|---|---|---|---|---|
| 0-.99 | 20.75% | 28.57% | 31.03% | 10.00% | 22.02% |
| 1-1.99 | 28.30% | 14.29% | 6.90% | 45.00% | 24.77% |
| 2-2.99 | 47.17% | 14.29% | 51.72% | 40.00% | 44.95% |
| 3-3.99 | 3.77% | 28.57% | 6.90% | 0.00% | 5.50% |
| 4-4.99 | 0.00% | 14.29% | 3.45% | 5.00% | 2.75% |
| Total (N=109) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*ANOVA test value of 0.337

Cross-Tab 3.2: Branch of Service and Alcohol Use During Service

| **Alcohol Index/ Branch*** | Army $\bar{X}$=2.31 | Marines $\bar{X}$=3.47 | Navy $\bar{X}$=2.80 | Other $\bar{X}$=2.28 | Total |
|---|---|---|---|---|---|
| 0-.99 | 12.96% | 0.00% | 3.45% | 5.00% | 8.18% |
| 1-1.99 | 22.22% | 0.00% | 17.24% | 35.00% | 21.82% |
| 2-2.99 | 37.04% | 28.57% | 37.93% | 30.00% | 35.45% |
| 3-3.99 | 24.07% | 42.86% | 27.59% | 30.00% | 27.27% |
| 4-4.99 | 3.70% | 28.57% | 13.79% | 0.00% | 7.27% |
| Total (N=110) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*ANOVA test value of 1.163, significant at p<0.10

Cross-Tab 3.3: Branch of Service and Alcohol Use After Service

| **Alcohol Index/ Branch*** | Army $\bar{X}$=1.33 | Marines $\bar{X}$=2.03 | Navy $\bar{X}$=1.47 | Other $\bar{X}$=1.29 | Total |
|---|---|---|---|---|---|
| 0-.99 | 29.63% | 0.00% | 17.24% | 30.00% | 24.55% |
| 1-1.99 | 48.15% | 57.14% | 51.72% | 60.00% | 51.82% |
| 2-2.99 | 20.37% | 42.86% | 31.03% | 10.00% | 22.73% |
| 3-3.99 | 1.85% | 0.00% | 0.00% | 0.00% | 0.91% |
| 4-4.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Total (N=110) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*ANOVA test value of 1.935

Cross-Tabs 3.1-3 show alcohol use across the military life course; before, during, and after service for each branch of service. Prior to military service it appears that the majority of individuals score in the 0-2.99 range. Interestingly, the Marines have the highest scores, with just over 40% scoring above a 3.0, compared to only ~4% of Army servicemembers, ~10% of Navy, and 5% of the Other category (comparing means the Marines score an average of 2.164, followed by 1.919 for Other, 1.761 for Navy, and 1.755 for Army). This may be an example of how risk-taking behavior is often tied to increased rates of substance use. Those who are heavier drinkers prior to service may be consider themselves more of risk takers, which could lead them to join a branch of service that is more likely to experience direct combat and is known for more strict and disciplined behavior –the Marines. However, after conducting an ANOVA test of significance I find that there is no statistically significant relationship between branch of service and alcohol consumption prior to service (value of 0.337). In this case, the high level of alcohol consumption amongst those entering the Marines may be skewed by low sample size.

During service, rates of alcohol increases across all four delineated branches of service. Once again, the Marines tend to lie on the high end of the spectrum of alcohol use, with over 70% scoring above 3.0, compared to only ~28% of Army, 41.38% of Navy, and 30% of Other. In fact, the Marines were the only branch to have a mean Alcohol Index score above a 3 (3.474), with the next highest mean belonging to the Navy with a score of 2.79. While greater exposure to combat and stress can explain the Marines' heightened alcohol average, it doesn't explain why the Army doesn't have an equally high rate. It is possible that the culture of drinking in the Marines is stronger than the Army, which may lead to the higher scores of alcohol intake. The results of the ANOVA test indicate that there is a statistically significant differences between rates of alcohol use during service and branch of service overall at $p<0.05$ (value of 3.626). Additionally, the Marines are found to drink at statistically higher rates than the Army (value of 1.163 at $p<0.05$), and those in the Other categories drink at statistically lower rates than the Marines (value of -1.192 at $p<0.10$).

After service, alcohol intake changes significantly. No respondents score above a 4.0 on the Alcohol Index, and only 1.85% score above a 3.0 (all in the Army). The majority of all respondents score in the 1-1.99 range, with 48.15% Army, 57.14% Marines, 51.72% Navy, and 60% Other. Again, the Marines still score the highest (mean of 2.029, all other branches are below a 2.0 on the scale). This is possibly due to increased exposure to combat and stress for those serving in the Marines. The results of the ANOVA test indicate that there are no statistically significant differences in rates of alcohol consumption after service and branch of service (value of 1.935).

Marijuana

Cross-Tab 3.6: Branch of Service & Marijuana Use Before Service

| **Marijuana Index/ Branch*** | Army $\bar{X}$=2.10 | Marines $\bar{X}$=2.68 | Navy $\bar{X}$=1.66 | Other $\bar{X}$=1.63 | Total |
|---|---|---|---|---|---|
| 0-.99 | 52.94% | 28.57% | 62.07% | 55.00% | 54.21% |
| 1-1.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 17.65% | 57.14% | 13.79% | 40.00% | 23.36% |
| 4-4.99 | 15.69% | 14.29% | 17.24% | 5.00% | 14.02% |
| 5-5.99 | 13.73% | 0.00% | 3.45% | 0.00% | 7.48% |
| 6 | 0.00% | 0.00% | 3.45% | 0.00% | 0.93% |
| Total (N=107) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*ANOVA test value of 0.661

Cross-Tab 3.6: Branch of Service & Marijuana Use During Service

| **Marijuana Index/ Branch*** | Army $\bar{X}$=0.24 | Marines $\bar{X}$=0 | Navy $\bar{X}$=0.13 | Other $\bar{X}$=0 | Total |
|---|---|---|---|---|---|
| 0-.99 | 94.44% | 100.00% | 96.55% | 100.00% | 99.07% |
| 1-1.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 1.85% | 0.00% | 3.45% | 0.00% | 1.87% |
| 4-4.99 | 3.70% | 0.00% | 0.00% | 0.00% | 1.87% |
| 5-5.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 6 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Total (N=110) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*ANOVA test value of 0.551

Cross-Tab 3.6: Branch of Service & Marijuana Use After Service

| **Marijuana Index/ Branch** | Army $\bar{X}$=1.80 | Marines $\bar{X}$=2.89 | Navy $\bar{X}$=2.60 | Other $\bar{X}$=1.20 | Total |
|---|---|---|---|---|---|
| 0-.99 | 63.46% | 28.57% | 41.38% | 70.00% | 56.48% |
| 1-1.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 5.77% | 57.14% | 31.03% | 20.00% | 18.52% |
| 4-4.99 | 13.46% | 0.00% | 6.90% | 5.00% | 9.26% |
| 5-5.99 | 9.62% | 14.29% | 17.24% | 5.00% | 11.11% |
| 6 | 7.69% | 0.00% | 3.45% | 0.00% | 4.63% |
| Total (N=108) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*ANOVA test value of 01.934

Cross-Tabs 3.4-6 show marijuana use before, during, and after service for each branch of service. Prior to joining the military, the majority of respondents in each branch score in the 0-.99 range except for the Marines, who have the largest percentage (57.14%) scoring in the 3-3.99 range of the Marijuana

Index. Interestingly, the Navy and the Army are the only two branches that have individuals who score above a 5 on the marijuana index prior to service, though their mean scores (1.656 and 2.104) are still much lower than the future Marines (2.680). Borrowing the same risk-taking argument as before, it is possible that individuals who are more likely to use marijuana are more likely to join branches of service that could be considered "riskier". This theory holds up for the high means of marijuana use amongst future Army and Marines individuals, but does not necessarily explain the high rates of marijuana use in the Navy. Regardless of these observations, the results of the ANOVA analysis indicate that no statistically significant relationship exists between branch of service and rates of marijuana use prior to service (value of 0.661).

During service, marijuana use is practically non-existent, with hardly any respondents reporting use. Despite these low numbers, two branches did have members who used; the Army, with one respondent scoring in the 3-3.99 range on the marijuana index and two scoring in the 4-4.99 range and the Navy, with one person scoring in the 3-3.99 range. It is possible that these branches have less stringent testing, or perhaps easier-to-predict testing, so that it is possible to get away with marijuana use, compared to other branches where it may be stricter or nearly impossible. Regardless, marijuana use is rare during service, with the highest mean belonging to the Army with an average score of 0.236. The results of the ANOVA analyses indicate, however, that no statistically significant relationship exists between rates of marijuana use and branch of service (value of 0.551). This could also be affected by the low rates of marijuana use during service.

After service marijuana use is similar to before service. Interestingly, the branch with the most respondents scoring a 5.0 on the Marijuana Index or greater is the Navy (20.69% of Navy veterans scored above this level), compared to 17.31% of Army veterans, 14.29% of Marine veterans, and 5% of veterans in the Other category. Despite these observations, the results of the ANOVA analysis indicate that no significant relationship exists between branch and marijuana use after service (value of 1.934).

Hard Drug Experimentation

Cross-Tab 3.7: Branch of Service & Hard Drugs Tried Before Service

| **Hard Drugs Tried/Branch*** | Army | Marines | Navy | Other | Total |
|---|---|---|---|---|---|
| No, Never | 78.85% | 85.71% | 92.59% | 95.00% | 85.85% |
| Yes, Tried | 21.15% | 14.29% | 7.41% | 5.00% | 14.15% |
| Total (N=106) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*Chi-square value of 4.489

Cross-Tab 3.8: Branch of Service & Hard Drugs Tried During Service

| **Hard Drugs Tried/Branch*** | Army | Marines | Navy | Other | Total |
|---|---|---|---|---|---|
| No, Never | 92.59% | 100.00% | 89.66% | 100.00% | 93.64% |
| Yes, Tried | 7.41% | 0.00% | 10.34% | 0.00% | 6.36% |
| Total (N=110) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*Chi-square value of 2.705

Cross-Tab 3.9: Branch of Service & Hard Drugs Tried After Service

| **Hard Drugs Tried/Branch*** | Army | Marines | Navy | Other | Total |
|---|---|---|---|---|---|
| No, Never | 90.57% | 100.00% | 85.71% | 100.00% | 91.67% |
| Yes, Tried | 9.43% | 0.00% | 14.29% | 0.00% | 8.33% |
| Total (N=108) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*Chi-square value of 3.837

Cross-Tabs 3.7-3.9 show hard drugs tried before, during, and after service across branch of service. Prior to joining the military, individuals who later enlist in the Army have the highest percent of hard drug experimentation (21.15%), followed by the Marines (14.29%), the Navy (7.41%,), and finally the Other category (5%). The results of the chi-square test, however, indicate that no relationship exists between branch of service and hard drug experimentation prior to service (value of 4.489).

During service both members of the Marines and in the Other category refrain entirely from hard drug experimentation. Those in the Navy appear to experiment the most (10.34%) compared to 7.41% of Army soldiers. Again, the rates of hard drug experimentation are so low during military service (possibly due to the policies against drug use) that it is hard to observe patterns of experimentation across branches of service. Nevertheless, the results of the chi-square test indicate that no statistically significant relationship exists (value of 2.705).

After exiting the military, again only the Army and Navy veterans experiment with hard drugs. Army veterans had a rate of 9.44% compared to 14.29% of the Navy. Despite these observations, the results of the chi-square test find no significant relationship between hard drugs tried and branch of service after exiting the military (value of 3.837).

Prescription Drug Use

Cross-Tab 3.10: Branch of Service & Hard Drugs Tried Prior to Service

| **$R_x$ Tried/Branch*** | Army | Marines | Navy | Other | Total |
|---|---|---|---|---|---|
| No, Never | 82.69% | 57.14% | 86.21% | 95.00% | 84.26% |
| Yes, Tried | 17.31% | 42.86% | 13.79% | 5.00% | 15.74% |
| Total (N=108) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*Chi-square value of 5.800

Cross-Tab 3.11: Branch of Service & Hard Drugs Tried During Service

| **$R_x$ Tried/Branch*** | Army | Marines | Navy | Other | Total |
|---|---|---|---|---|---|
| No, Never | 94.44% | 100.00% | 89.66% | 100.00% | 94.55% |
| Yes, Tried | 5.56% | 0.00% | 10.34% | 0.00% | 5.45% |
| Total (N=110) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*Chi-square value of 2.904

Cross-Tab 3.12: Branch of Service & Hard Drugs Tried After Service

| **$R_x$ Tried/Branch*** | Army | Marines | Navy | Other | Total |
|---|---|---|---|---|---|
| No, Never | 92.45% | 100.00% | 89.66% | 100.00% | 92.73% |
| Yes, Tried | 7.55% | 0.00% | 10.34% | 0.00% | 6.36% |
| Total (N=109) | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

*Chi-square value of 2.707

Cross-Tabs 3.10-3.12 show prescription drugs tried before, during, and after service across branch of service. Experimentation with prescription narcotics appears to be prevalent across all branches, similar to experimentation with hard drugs prior to service. This is likely that the individuals experimenting with prescriptions are the same ones who tried illicit drugs as well. The highest proportion of prescription drug experimentation is amongst the Marines, with 42.86%, but the low sample size may be inflating this number to seem larger than it is. The results of the chi-square analysis indicate that no relationship exists between prescription drugs tried and branch of service (value of 5.800).

During service, experimentation with prescription drugs is the same as experimentation with hard drugs during service– only members of the Army and Navy tried any. It is again likely that those trying prescription drugs recreationally are the same who have tried hard drugs during service. Once again, no statistically significant relationship exists (chi-square values of 2.904).

After service prescription drug experimentation roughly mirrors hard drug experimentation. Army (7.5%) and Navy (10.34%) are the only branches with veterans trying prescription drugs in the sample. The results of the chi-square analysis reveal that there is again no relationship between prescription drug experimentation and branch of service (value of 2.707). Again the low sample size may be contributing to these results.

*Length of Service*

Alcohol

Cross-Tab 4.1: Length of Service and Alcohol Use Prior to Service

| **Alcohol Index/ Length of Service*** | 5 Years or Greater (5+) $\bar{X}$=1.85 | Under 5 Years (<5) $\bar{X}$=1.73 | Total |
|---|---|---|---|
| 0-.99 | 22.06% | 23.68% | 22.64% |
| 1-1.99 | 19.12% | 34.21% | 24.53% |
| 2-2.99 | 51.47% | 31.58% | 44.34% |
| 3-3.99 | 5.88% | 5.26% | 5.66% |
| 4-4.99 | 1.47% | 5.26% | 2.83% |
| Total (N=106) | 100.00% | 100.00% | 100.00% |

*T test value of 0.476

Cross-Tab 4.2: Length of Service and Alcohol Use During Service

| **Alcohol Index/ Length of Service*** | 5 Years or Greater (5+) $\bar{X}$=2.49 | Under 5 Years (<5) $\bar{X}$=2.65 | Total |
|---|---|---|---|
| 0-.99 | 8.82% | 5.13% | 7.48% |
| 1-1.99 | 22.06% | 17.95% | 20.56% |
| 2-2.99 | 33.82% | 41.03% | 36.45% |
| 3-3.99 | 27.94% | 28.21% | 28.04% |
| 4-4.99 | 7.35% | 7.69% | 7.48% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*T test value of -0.760

Cross-Tab 4.3: Length of Service and Alcohol Use After Service

| **Alcohol Index/ Length of Service*** | 5 Years or Greater (5+) $\bar{X}$=1.34 | Under 5 Years (<5) $\bar{X}$=1.53 | Total |
|---|---|---|---|
| 0-.99 | 27.94% | 17.95% | 24.30% |
| 1-1.99 | 48.53% | 56.41% | 51.40% |
| 2-2.99 | 23.53% | 23.08% | 23.36% |
| 3-3.99 | 0.00% | 2.56% | 0.93% |
| 4-4.99 | 0.00% | 0.00% | 0.00% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*T test value of -1.241

Cross-Tabs 4.1-3 show alcohol use across the military life course for two categories of length of service; under five years of service (<5) and five years of service or greater (5+). Based on the observations in the cross-tabulations it appears than prior to service, individuals who would later serve for either less than five or five/greater years consume alcohol at similar rates, with 5+ scoring an average of 1.849 on the Alcohol Index compared to an average of 1.734 for <5. About 22% of 5+ individuals score in the 0-.99 range compared to about 24% of <5. It appears that those serving 5+ years do tend score more in the 2-2.99 range than <5 individuals (51.47% and 31.58%, respectively). Despite these observations, the results of the T test indicate that there is no statistically significant relationship between length of service and alcohol consumption prior to service (value of 0.476).

Looking at the alcohol index during service, it appears that alcohol consumption is much more prevalent, with only 8.82% of 5+ servicemembers scoring in the 0-.99 range and 5.13% of the <5 servicemembers, much lower than prior to service. Both the 5+ and <5 groups have ~35% of their members scoring above a 3.0 on the Alcohol Index. Again the means are similar, with 5+ scoring an average of 2.489 compared to 2.650 for those serving less than five years. These findings are supported by the results of the T test, which indicate that there is no significant difference in rates of alcohol use during service by length of service (value of -0.760).

Finally, after service the majority tend to score in the 1-1.99 range across each length of service. In fact, once again the rates of alcohol consumption after service are very similar for 5+ veterans and <5 veterans (mean scores of 1.335 and 1.201, respectively). This may indicate that regardless of longer exposure to a possible "culture" of alcohol in the service for those serving over five years, these veterans

do not consume alcohol at any higher rates than those serving less than five years. This observation is supported by the T test results, which indicate that no significant difference exists between alcohol use after service and length of service (value of -1.241)

Marijuana

Cross-Tab 4.4: Length of Service and Marijuana Use Before Service

| **Marijuana Index/ Length of Service*** | 5 Years or Greater (5+) $\bar{X}$=1.66 | Under 5 Years (<5) $\bar{X}$=2.34 | Total |
|---|---|---|---|
| 0-.99 | 61.19% | 43.24% | 54.81% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 17.91% | 32.43% | 23.08% |
| 4-4.99 | 14.93% | 13.51% | 14.42% |
| 5-5.99 | 5.97% | 8.11% | 6.73% |
| 6 | 0.00% | 2.70% | 0.96% |
| Total | 100.00% | 100.00% | 100.00% |

*T test value of -1.540

Cross-Tab 4.5: Length of Service and Marijuana Use Before Service

| **Marijuana Index/ Length of Service*** | 5 Years or Greater (5+) $\bar{X}$=0.07 | Under 5 Years (<5) $\bar{X}$=0.30 | Total |
|---|---|---|---|
| 0-.99 | 98.53% | 92.31% | 96.26% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 0.00% | 5.13% | 1.87% |
| 4-4.99 | 1.47% | 2.56% | 1.87% |
| 5-5.99 | 0.00% | 0.00% | 0.00% |
| 6 | 0.00% | 0.00% | 0.00% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*T test value of -1.241

Cross-Tab 4.6: Length of Service and Marijuana Use Before Service

| **Marijuana Index/ Length of Service*** | 5 Years or Greater (5+) $\bar{X}$=1.84 | Under 5 Years (<5) $\bar{X}$=2.16 | Total |
|---|---|---|---|
| 0-.99 | 58.21% | 55.26% | 57.14% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 19.40% | 13.16% | 17.14% |
| 4-4.99 | 8.96% | 10.53% | 9.52% |
| 5-5.99 | 10.45% | 13.16% | 11.43% |
| 6 | 2.99% | 7.89% | 4.76% |
| Total (N=105) | 100.00% | 100.00% | 100.00% |

*T test value of -0.649

Cross-Tabs 4.4-6 show marijuana use across the military life course and length of service. Those who served more than five years appear to have used marijuana more before entering the military, with 24.31% scoring above a 4.0 compared to 20.89% of those who later served under five years in the military, though the means reveal the opposite – under five years scored an average of 2.343 compared to 1.663 for over five years. Regardless of these observations, the results of the T test are not statistically significant, indicating that marijuana use prior to service does not vary by length of military service (value of -1.540).

During service, marijuana is practically non-existent across both categories of service length. It appears that more individuals serving <5 years score above a 3.0 on the Marijuana Index (7.69%) compared to 1.47% of 5+ servicemembers. Perhaps those serving less time are less committed (or less fully-socialized) to military ideals, and thus are more willing to risk marijuana use. Regardless, the results of the T test indicate that no significant relationship exists (value of -1.241).

Finally, marijuana use after service increases substantially from during service, and appears to be much heavier than before service. Interestingly, veterans who served less than five years in the military are more likely to score above a 4.0 on the Marijuana Index (31.58% compared to 22.40% of 5+ veterans). A likely explanation for this difference is age—those who served in the military longer are likely older than those who served for a shorter time period, and may have more commitments (i.e. children or spouses) that prevent them from marijuana use. Nonetheless, the relationship between length of service and marijuana use after service is not statistically significant according to the T test results (value of -0.649).

Hard Drug Experimentation

Cross-Tab 4.7 Length of Service and Hard Drug Experimentation Before Service

| **Hard Drugs Tried/ Length of Service*** | 5 Years or Greater (5+) | Under 5 Years (<5) | Total |
|---|---|---|---|
| No, Never | 83.58% | 91.67% | 86.41% |
| Yes, Tried | 16.42% | 8.33% | 13.59% |
| Total (N=103) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.705

Cross-Tab 4.8 Length of Service and Hard Drug Experimentation During Service

| **Hard Drugs Tried/ Length of Service*** | 5 Years or Greater (5+) | Under 5 Years (<5) | Total |
|---|---|---|---|
| No, Never | 97.06% | 87.18% | 93.46% |
| Yes, Tried | 2.94% | 12.82% | 6.54% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 2.506

Cross-Tab 4.9 Length of Service and Hard Drug Experimentation After Service

| **Hard Drugs Tried/ Length of Service*** | 5 Years or Greater (5+) | Under 5 Years (<5) | Total |
|---|---|---|---|
| No, Never | 94.03% | 86.84% | 186.67% |
| Yes, Tried | 5.97% | 13.16% | 8.57% |
| Total (N=105) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.813

Cross-Tabs 4.7-9 show hard drugs tried across the military life course and length of service. Prior to service, hard drug experimentation appears to be heavier for those who later served 5+ years (16.42% compared to 8.33% for <5 years). Perhaps these individuals relied more heavily on the military as a way to reshape their lives away from drugs, thus spending more time indoctrinating themselves into the military's ideologies by serving for longer. Regardless, this difference is not statistically significant according to the results of the chi-square analysis (value of .705).

During service experimentation with hard drugs drops down to only seven respondents, however they are concentrated in the <5 range (12.82% compared to 2.94% in the 5+ range). This could indicate that those serving less time are less indoctrinated by the military's ideals and are therefore more willing to risk experimentation with hard drugs. Despite this observation, the results of the chi-square analysis are not statistically significant, indicating that no relationship exists between length of service and hard drug experimentation (value of 2.506).

After service experimentation with hard drugs appears to increase from seven to nine respondents during service. The greatest concentration of hard drug use experimentation lies in those who served less than five years (13.16% compared to 5.97% for those serving more than five years). Once again, these observations are not statistically significant according to the results of the chi-square test (value of 0.813).

Prescription Drug Use

Cross-Tab 4.10 Length of Service and Prescription Drug Experimentation Before Service

| **$R_x$/ Length of Service*** | 5 Years or Greater (5+) | Under 5 Years (<5) | Total |
|---|---|---|---|
| No, Never | 82.35% | 89.19% | 84.76% |
| Yes, Tried | 17.65% | 10.81% | 15.24% |
| Total (N=105) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.419

Cross-Tab 4.11 Length of Service and Prescription Drug Experimentation During Service

| **$R_x$/ Length of Service*** | 5 Years or Greater (5+) | Under 5 Years (<5) | Total |
|---|---|---|---|
| No, Never | 95.59% | 92.31% | 94.39% |
| Yes, Tried | 4.41% | 7.69% | 5.61% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 0.075

Cross-Tab 4.12 Length of Service and Prescription Drug Experimentation After Service

| **$R_x$/ Length of Service*** | 5 Years or Greater (5+) | Under 5 Years (<5) | Total |
|---|---|---|---|
| No, Never | 94.12% | 92.11% | 93.40% |
| Yes, Tried | 5.88% | 7.89% | 6.60% |
| Total (N=106) | 100.00% | 100.00% | 100.00% |

*Chi-square value of -0.649

Cross-Tabs 4.10-12 show prescription drugs tried across the military life course and length of service. Experimentation with prescription drugs prior to service is low, though more prevalent than experimentation with hard drugs. Those who later serve 5+ years are more likely to experiment with prescription pills (16.42% compared to 8.33% of <5 individuals). Once again this difference is not statistically significant according to the chi-square analysis (value of 0.419).

During service, trying prescription drugs is low, but again higher than hard drug experimentation, with only 6 respondents involved. Despite those who serve 5+ appearing to experiment at less rates than those who serve <5 (4.41% and 7.69% respectively), the difference is not statistically significant (chi-square value of 0.075).

Last, the rates of prescription drug use after service are nearly the same as during, with only one more person using than during service. Again, those serving less than five years are slightly more likely to

experiment with prescription narcotics (7.89% compared to 5.88%). Unfortunately, this is not a statistically significant difference, indicating that there is no relationship between length of service and prescription drug experimentation after service (value of $6.66e^{-30}$).

## SUMMARY & CONCLUSIONS

In conclusion, alcohol use increases during service and decreases substantially after exiting the military, in this case even lower than the mean alcohol index score prior to service, and these differences are all found to be statistically significant. The primary reasons identified for using alcohol are mainly social ---bonding with friends, for enjoyment, or literally for social reasons. Only after service was the reason for drinking "because I was stressed" a more substantial percentage, though it still lags behind the social reasons.

Unlike alcohol, marijuana use drops during service to almost non-existent numbers (a statistically significant difference), likely due to the military's zero-tolerance policies on drug use. After service marijuana use increases roughly back to its score prior to joining the military. The primary motivations for marijuana use were social (similar to alcohol) prior to service, but these reasons change after exiting the military. After service using marijuana as a sleep-aid, for medicinal purposes, and for stress are just as popular as using it "for fun".

Hard drug use is more prevalent prior to service, dropping (like marijuana) during service and then slightly increases after service (though these differences are not statistically significant). The majority of respondents seem to experiment with hard drugs rather than use them regularly, and experimentation is primarily with psychedelic drugs or cocaine. Regular drug use follows the same pattern, but at much lower levels. Finally, prescription drug abuse is low, but highest prior to service, dropping to lower and lower rates at each stage in the military life course (and similar to hard drug experimentation, is not statistically significant). While the majority of hard drug-users state their reasons for using is to experiment and have fun, the primary reasons for prescription drug misuse are different.

Prior to service the reasons are similar to hard drug use, though during service it changes to medicinal purposes beyond the actual prescription and to cope with stress. After service the primary reasons include fun and to get high, but also include medicinal reasons, including coping with anxiety.

**Socio-Demographic Summaries**

Alcohol use is more prevalent among men, both before, during, and after military service. While this is the case, both men and women increase their rates of drinking during service. Marijuana use is slightly higher for men before service, and during service some men risk using marijuana while all women abstain from use. After service men and women's marijuana use is nearly the same. Hard drug experimentation is low for both men and women, but men appear to be more willing to experiment. Finally, prescription drug abuse is also low in the sample, with men appearing to experiment more than the woman. Regardless of these observations, the results of the significance tests indicate that there is no relationship between men and women's alcohol use prior to, during, or after service. For marijuana use I find no significant difference prior to or after service, but do find that men are significantly more likely to use marijuana than women during service. Hard drug experimentation only varies across gender after exiting the military, and this pattern is the same for prescription drug experimentation.

Overall it appears that nonwhite respondents are less likely or (at the least, as likely) to use substances across the life course for essentially every substance analyzed here. White respondents were more likely to drink heavily, use marijuana, regularly use hard drugs and regularly abuse prescription narcotics, though nonwhite respondents were slightly more likely to experiment with hard drugs prior to service. At some stages nonwhite and white users were about the same for substance use, particularly alcohol use after service. Despite these reflections, the results of the significant tests indicate that no relationship exists between race and alcohol consumption across the military life course. I do find that white respondents are significantly more likely to use marijuana during service than nonwhite respondents, but that no relationship exists before or after service. Similarly, no statistical relationship appears to exist between race and hard or prescription drug experimentation.

In terms of substance use across branches of service, it appears that some branches may be more prone to certain types of substance use than others, though it varies greatly from substance to substance. Marines tend to score highest on the alcohol index before and during service. Alcohol use increases greatly across all branches during service, with some more than others, indicating the possibility that the culture of alcohol use is more prevalent in some branches over others. Marijuana use is high prior to service for future Marines, though drops substantially during service, with hardly any members using marijuana at that point in time. After service, Navy veterans have higher averages on the marijuana index. In terms of hard and prescription drug experimentation, the low rates for all illicit and prescription drug use are slight enough that it is difficult to draw conclusions about differences based on branch of service. In general, drug experimentation is higher prior to service, and extraordinarily low during. After service it becomes slightly more common, but still much lower than prior to service. In this sample it was primarily one or two members of the Army and Navy that were experimenting with prescription and hard drugs. The results of the significance tests indicate no relationship between branch of service and marijuana, hard, and prescription drugs. The only significant relationship I observe is alcohol use during service, with Marines drinking at higher rates than Army soldiers, and those in the Other category drinking at lower rates than the Marines.

It is hard to draw interesting conclusions about length of service and substance use, especially for hard/prescription experimentation. In addition, it's hard to interpret how substance use prior to service influences length of time spent in the military. Despite these shortcomings, it does appear that shorter or longer lengths of service in the military may have some effects on alcohol and marijuana use, be it greater or lesser indoctrination to the rules and ideals of the military, age throughout length of service, or amount of stress exposed to throughout service. Nonetheless, no relationships between length of service and any of the substances examined are statistically significant.

Despite the strengths of my study, several limitations must be addressed. First, due to the low sample size in my survey, it is hard to draw adequate conclusions regarding the trends in substance use for marijuana (during service), prescription, and illicit drugs. Although it is possible that rates of drug use

are indeed very low, having a larger sample would allow me to extrapolate a more viable conclusion on that point. Low sample size also makes it hard to draw conclusions based on other socio-demographic characteristics, such as differences in race and gender.

Second, in relation to the first point, the survey data collected is not random, and thus it is not generalizable to the entire population of post-9/11 veterans in the United States. It is not even generalizable to post-9/11 veterans living in Washington State. However, the aim of my research is not to apply these concepts to all veterans –it is simply to provide a picture of what substance use may look like for this sample. For that reason, I aimed to collect as diverse of a sample as possible, in order to try and gather a variety of experiences, rather than the most common.

Third, it is important to consider the role of social desirability bias in answers given to the drug and alcohol questions, as well as the mental health and stressful life questions (i.e. sexual assault, homelessness, etc.). It is very possible that an explanation for the low levels of drug use are due to respondents not feeling comfortable discussing their substance use behaviors.

Fourth, the alcohol and marijuana indices weigh each question equally, assuming that each question in the index is as important in understanding substance use as the next. This may not actually be the case, as some tendencies (such as drinking during school or work) may be more or less indicative of dependency than others.

Fifth, the cross-sectional and retrospective nature of the data make it difficult to draw conclusions about the military life course in the most accurate way possible. As not every question in the survey was asked retrospectively for each time frame, the data are limited in exploring how certain variables (i.e. age, marital status, number of children, etc.) may affect the individual at each stage in the military life course.

In general, substance use in the military is a complex issue. Rates and reasons for use vary greatly from substance to substance and across the military life course. In addition, several variations seem to exist across a multitude of socio-demographic characteristics, including gender and race. Future research should aim to expand upon these data with a larger sample, in the hope of gathering greater understanding of patterns of substance use, particularly for hard and prescription drug misuse. The outcome of this

research is useful in highlighting how behavioral trajectories may become altered by participation in complex organizations. Additionally, I am able to emphasize how the socialization process into an institution may fluctuate across a variety of socio-demographic factors. These varying experiences may then influence behavior, such as substance use. Finally, I am able to provide direct research on a topic that has primarily been theorized upon in the past. Specifically, my study contributes to the literature by presenting an in-depth descriptive analysis that compares rates *and* reasons behind substance use across a variety of substances and across the military life course.

# Chapter Three
# SUBSTANCE USE & THE MILITARY LIFE COURSE: A COSTS AND BENEFITS ANALYSIS

## INTRODUCTION

Sociologists have long been fascinated by the study of organizations. In particular, the realm of total institutions has drawn a lot of attention over the years, especially in terms of the effects they have on the life course outcomes of individuals. Despite this preoccupation, the study of the military, as an organization that is near-total, is often left out of the picture. This is especially concerning given the high degree (and unique aspects) of socialization that take place as individuals adapt to the military environment, and the subsequent changes each individual undergoes as they transition from civilian to servicemember and to veteran.

While insights on the operation of the military as a near-total institution have been theorized on, little direct research has been undertaken. Research that has been conducted is prone to limitations, including a lack of life-course perspective and focus on eras of veterans earlier than our current era of service. Military service usually occurs during the years in the life course when individuals' identities are most easily influenced – around 18-25 years of age (Teachman & Tedrow, 2007). Subsequently, service is often regarded as a turning point to adulthood for adolescents (Kelty, Kleykamp, & Segal, 2010; Jackson et al., 2012). Consequently, this is also the point in time when experimentation with drugs and alcohol is also most predominant. Substance misuse has become a growing issue in modern US society. Not only does the abuse of alcohol or drugs harm the individual, but it also leads to severe consequences for society, including DUIs, violence, and lost productivity (Mahalik, 2015).

This study seeks to provide insights into how behavioral trajectories might be altered by operation within organizations. Specifically, I aim to understand how attitudes, opinions, and patterns of substance use are transformed by participation in the military. To pursue this goal, I collect exploratory survey and interview data on the most recent era of veterans (the post-9/11 era) in order to understand both the

"what" and "why" of substance use – what are patterns of substance use amongst the military population and why do these patterns exist? First I analyze survey data from 110 respondents on basic rates of substance use for alcohol, hard drugs, prescription misuse and marijuana across the military life course (before, during, and after service) in order to explore what patterns are taking place. Second I analyze interview data from 18 respondents in order to assess the explanation behind the observed patterns. Ultimately, I use a loose Rational Choice framework in order to address the costs and benefits associated with substance use or abstention, and how these components may lead to increased or decreased substance use for individuals at each point in the military life course.

Overall, I find that rates of alcohol, marijuana, hard drug, and prescription drug misuse vary greatly over the military life course, and by type of substance. In addition, the prominent costs and benefits highlighted by individuals fluctuates greatly over the life course as well. The qualitative data assist in delivering evidence of the causal mechanisms through which the quantitative patterns are observed. In other words, the interview data help to uncover how individuals gauge the costs and benefits of substance use and then use these notions to inform their behavior. This provides data on the mechanisms of substance use across the military life course that have not been studied in this field.

This research is important for helping us better understand the effects institutions have on the life-course outcomes of its participants. Specifically, it helps to further our understanding of the military's current policies and attitudes on substance use for servicemembers during service, and how behaviors learned within the institution influence attitudes and behaviors after exiting. The results of this study could be useful to policy-makers who seek to better understand the effects of military service in order to more accurately address how to provide help and resources to our nation's veterans.

## BACKGROUND

Research on substance use and the military is incomplete. However, important findings have been uncovered that, taken together, provide delicate insights into patterns of use. In particular, previous studies have found that alcohol use tends to be a problem for servicemembers, both during and after

service (Teachman, Anderson, & Tedrow, 2015). Past research on drug use and the military is more inconsistent, with some studies finding stark decreases in use (ranging in drugs from heroin to marijuana) after returning from deployment (Robins & Slobodyan, 2003; Golub & Bennet, 2004; Vazan, Golub, & Bennett, 2013), while others find no change in drug use during service compared to after (Merklinghaus, forthcoming).

Despite some research on the general patterns of substance use, relatively little research has addressed *why* some substances (i.e. illicit drugs) are used at low rates, while others (i.e. alcohol, prescription drugs) are being used at much higher rates amongst military populations. This knowledge is important, as it can provide deeper understanding into the socialization process of the military, informing us of the greater implications for the operation of organizations in general, and how these processes alter the behaviors of its participants.

Sociologists have become more and more accepting of the theory of Rational Choice as an acceptable explanation for social behaviors. At its core, Rational Choice Theory assumes that all behaviors are, in a sense, rational, and are guided by the psychological conditioning components of rewards and punishments (Scott, 2009; Ogu, 2013; Hechter & Kanazawa, 1997). These rewards (also called benefits) and punishments (also called costs) allow the individual to weigh the potential outcomes of a proposed decision and act in the way that will provide the most benefit in their self-interest (Scott, 2009; Ogu, 2013; Hechter & Kanazawa, 1997). As Scott points out, it is important to note that the *perceived* cost or benefit can be just as powerful as the actual reward or punishment; unlike psychological conditioning, which relies on the actual punishment or reward taking place in order for the individual to learn the appropriate behavior (2009). In addition, though Rational Choice Theory stems from the actions of the individual, it can be used to explain the processes of structures and societies as well (Ogu, 2013; Scott, 2009; Hechter & Kanazawa, 1997). While there are several assumptions important to Rational Choice Theory, the most crucial to this study is the assumption of rationality, which implies that individuals act in ways that will provide them with the greatest benefit (Ogu, 2013).

Using this framework, I propose that this dynamic of Rational Choice Theory can be applied to understanding patterns of substance use amongst individuals. In this study I argue that both rates of substance use and selection of which substance *to* use are together influenced by the virtual benefits and costs of using. More specifically, I believe the benefits and costs of substance use shift over the stages of the military life course; before, during, and after service. The following section outlines previous literature and limitations on the military and the life course, key benefits that may encourage substance use, and key costs that may discourage use.

**Context on Military and the Life Course**

The military plays a major role in the lives of many people--in fact, in the United States the military is, and has been, the largest employer of young men (Teachman & Tedrow 2007). The military shapes the lives of individuals in a number of ways, which can be most adequately understood through the life course perspective. This framework can be defined as the understanding of various life trajectories (or paths), and the ways that they are connected and influenced by one another, as well as by other structural, cultural, social, and organizational mechanisms, which affect their direction and subsequent outcomes on the individual's life (Elder 1994; Mayer 2009; Uggen 2001).

The military is one such organizational mechanism that shapes the outcomes and directions of individual's life trajectories. While the life course can be broken down into several components, the effect of timing on educational attainment and family formation, and human agency (selectivity) are especially relevant to this research (Mayer 2009; Uggen 2001; Teachman & Tedrow forthcoming, Kelty, Kleykamp, & Segal 2010; Settersten 2006; Sampson & Laub 1996; Bouffard 2005; Teachman 2007, Elder et al. 2010; Wilmoth & London 2012). In order to adequately understand how substance use changes across the military life course, it is important to first understand the variety of contexts that individuals enter the military under. Several mechanisms can lead to more positive or more negative outcomes for individuals after leaving the service, prior to taking into consideration substance use. Understanding the framework of the organization and its effect on individuals can shine light on the specific costs and benefits that individuals evaluate in order to make decisions about substance use. Specifically, assessing the ways in

which timing and human agency impact lie course trajectories after military service is particularly useful.

*Timing and Educational Attainment*

As military service typically occurs during the years in the life course when individual's identities are most easily manipulated (Teachman & Tedrow 2007), service is often seen as a time of transition, or turning point, to adulthood for adolescents (Kelty, Kleykamp, & Segal 2010; Jackson 2012). This is also the time when most individuals begin experimentation with drugs and alcohol. Yet timing of service isn't always during these younger years. Older entry to service is also possible, particularly for those entering officer-training programs. In these ways, military service could be seen as an "on-time" behavior, if entrance is right after high school or immediately following an officer program, or an "off-time" behavior if service takes place later in the life course.

Generally speaking, if individuals enter into the military at a time when they have already established a career, it is more difficult for them to re-enter the civilian labor force upon return (Settersten 2006; Teachman 2007; MacLean & Elder 2007). Similar statements can be said for educational attainment. When funding for higher education became more widespread, more civilians started enrolling in college, and higher education became more of a societal norm (Teachman 2007; Kelty, Kleykamp, & Segal 2010). Choosing to go into the military versus choosing to go to college following high school, during times of high civilian college enrollment, can lead to a disruption in the life course of returning veterans. These veterans, upon return, are often less educated and less equipped with the skills needed to succeed in civilian life than their non-military counterparts who chose to enter college directly following high school (Teachman 2007). These outcomes can be particularly consequential in a society that is vastly becoming more dependent on degrees from four-year institutions.

On the positive side, individuals entering service at young ages may be in a position where they can take greater advantage of the provided military benefits, such as the GI Bill or housing opportunities (as they likely have not already purchased housing or attended college prior to enlistment), resulting in the potential for higher overall educational attainment than would have initially been possible for them (Teachman 2007). This is especially true for those coming from disadvantaged backgrounds, who are able

to use the military as a "bridge" to remove them from a negative environment with a lack of resources and opportunities, and place them into a more positive environment with a multitude of opportunities and resources (Teachman 2007; Elder 1994; MacLean & Elder 2007; Teachman & Tedrow Forthcoming; Bouffard 2005; Kleykamp 2009; Teachman & Tedrow 2007; Uggen 2001; Sampson & Laub 1996; Elder et al. 2010). Therefore, the time in the life course when an individual chooses to join the military is critical in ascertaining life course outcomes in regards to education and career.

*Timing and Family Formation*

The formation of families via marriage and children is another age-graded pillar of life course theory. It is found that service members are more likely to be married than their civilian counterparts, but they are less likely than their peers to be married when they actually enter the service (Kelty, Kleykamp, and Segal 2010; Segal & Segal 2004). This again relates to social timing. Service members are more likely to enlist as single adults, but when they do couple, they marry at younger ages than civilians. Military service may spark marriage at a young age due to the many benefits of service, including the supportive environment of other married families going through similar experiences (which may also shield against some of the stresses associated with military service), and financial benefits such as increased work-related skills, access to education, access to quality health care, and housing benefits (Kelty, Kleykamp, and Segal 2010). In addition, these military benefits may also encourage early childbearing (Kelty, Kleykamp, and Segal 2010). On the other hand, those who enter the service at an older age (at least during WWII), or "off time", are more likely to file for divorce than those who entered at younger ages (MacLean & Elder 2007; Sampson & Laub, 1996).

*Human Agency/Selectivity*

Finally, it is nearly impossible to describe how military service might affect individual life trajectories without mentioning aspects of selectivity. While the military is particular in who it selects for service (in both the All-Volunteer Forces era and during conscription), the individual also plays a role in selecting whether or not they enlist (Teachman 2007; Jackson 2012; MacLean & Elder 2007). When

looking at educational attainment and family formations it is difficult to exclude the fact that individuals who are participating in the service vary from civilians in ways other than their service. The military selects based on physical and mental health characteristics (recruits must meet particular standards of health, mental capacity, and often their criminal records, if any, are scrutinized) (Teachman 2007; MacLean & Elder 2007). Additionally, the individual self-selects based on personality traits, such as a propensity for risk-taking (MacLean & Elder 2007).

Generally, "on time" service may lead to more positive outcomes, whereas "off time" or disruptive service may lead to a variety of consequences (Sampson & Laub 1996). Next I outline the relative benefits and costs of substance use, and how these factors can be influenced by the stages of military service.

**Benefits of Substance Use**

There are many reasons why someone might be enticed to experiment with alcohol and/or drugs, but the reasons why use continues or exceeds a healthy level (alcohol) are less obvious. Using the framework of Rational Choice Theory, I outline three key benefits of substance use—psychological, social, and physical-- and how they may become more or less relevant across the military life course. Changing relevance may be based on timing and human agency, as discussed in the life course perspective.

*Psychological – Substance Use as a Coping Mechanism*

It's no surprise that military service often exposes its servicemembers to a variety of negative and even traumatic experiences. Service members are also exposed to a multitude of stressors associated with being a part of an active duty military, such as combat, the threat of sexual assault and harassment, and even boredom, all of which can increase the propensity to consume alcohol or use substances as a coping mechanism (Suh et al., 2008; Wallace, Sheehan, & Young-Xu, 2009; Teachman, Anderson, & Tedrow, 2015). In general, self-medication is found to be one of the highest motivations for alcohol and marijuana use among adolescents (Boys, Marsden, & Strong, 2001; Newcomb et al., 1988). Those veterans who

have experienced combat exposure or trauma during their service may suffer from Post-Traumatic Stress Disorder or Traumatic Brain Injury. Since those with mental health disorders, particularly depression and anxiety, are at an increased risk for drug addiction (Robinson et al., 2017), it is possible that those with PTSD or TBI from their time in the service may be more likely to abuse drugs.

When it comes to deployment (regardless of combat exposure), service members who have been deployed are at a higher risk for alcohol dependence and/or binge drinking (Kline et al., 2010) and are more likely to have received treatment for some sort of substance abuse problem (Kline et al., 2010; Shen et al., 2012). Research uncovers that prescription drug use and heavy alcohol use, among other factors, are found to have increased among combat veterans (Bray et al., 2010); however little other information exists, including a direct comparison with veterans who have not seen combat. I aimed to improve upon this shortcoming with my Master's Thesis, finding that there is no decrease or increase in drug use after exiting the service, even after controlling for combat status (Merklinghaus, forthcoming). The major shortcoming to this finding again lies in the construction of the combat variable from the NLSY-97, which asks if an individual has "*ever served in a combat/war zone*" and not if they have actually *experienced* combat. In addition, few other studies consider combat exposure and its effect on substance use, let alone with direct comparisons across various types of substances and across life course transitions.

In the current literature, studies that consider combat exposure and its effects on substance use tend to focus on the Vietnam era of service or earlier, overlooking our most recent era of servicemembers. For example, it is found that men who served in the Vietnam War report greater rates of marijuana use compared to those of the same era who did not serve in Vietnam or were civilians at that time (MacLean & Elder, 2007). Although the MacLean and Elder study makes comparisons to the general civilian population, it still falls short, as it only analyzes data for Vietnam era veterans, not those of more recent periods.

*Social—Bonding and Camaraderie*

The institution of the military is a particularly unique environment, in that it is a near-total institution that isolates recruits from family and friends and re-socializes them to a military environment (Wallace, Sheehan, & Young-Xu, 2009; Wilmoth & London, 2013; Sampson & Laub, 1996; Teachman & Tedrow, Forthcoming; Overdale, 2012). According to the cultural transmission theory, drug and alcohol use are learned behaviors that are acquired through socialization to a particular culture, in this case, the military (Henslin, 2011). The utility of alcohol for the military as an institution is its ability to encourage bonding and camaraderie amongst the troops, heighten morale, and ease the transition from deployment to returning home (Jones & Fear, 2011). In addition, alcohol has historically been an easy to obtain commodity within the military, and its use has even been stimulated through military policies, including the easy access of alcohol on base and at a subsidized price (Teachman, Anderson, & Tedrow, 2015; Wallace, Sheehan, & Young-Xu 2009; Jones & Fear, 2011). This blatant support of alcohol by the military, coupled with the resocialization process within the military including removal from family and friends, *and* at a critical time period in the life course, could lead to increased levels of use compared to the civilian population and even the formation of habits that could persist following service (Mahalik et al., 2015; Teachman, Anderson, & Tedrow, 2015).

Similar to alcohol, other substances could theoretically be used to enhance bonding and sociability as well, especially in isolating situations like basic training and deployment. For instance, in the general population, use of hallucinogens and stimulants are found to be associated with dance events and to enhance social interactions, while alcohol and marijuana are used primarily to relax or "feel better" (Boys, Marsden, & Strang, 2001). The same study finds that when drugs with certain properties are unattainable, other drugs with similar highs may be substituted instead (Boys, Marsden, & Strang, 2001). Therefore, if the military's attitudes toward one substance are less tolerant than another, individuals may substitute other substances in its place that can do the same job.

Social learning theory describes the process of observing the interactions of others and modeling those behaviors that exhibit positive rewards (Akers, 1973). This process may be particularly influential

for instigating drug and alcohol use (Akers, 1973). In fact, peer-motivation is found to be one of the highest incentives for alcohol and marijuana use amongst adolescents (along with self-medication) (Boys, Marsden, & Strang, 2001), and many choose to experiment with drugs or alcohol because their friends are (Robinson et al., 2017). After exiting the service, servicemembers are no longer exposed to the stressful qualities intrinsic to the military and are often no longer around the friendships formed while serving. Therefore, veterans might not require the use of substances to encourage sociability to the same degree that they did while serving, and they likely are removed from the social environment that may have encouraged substance use while serving as well.

As the majority of individuals entering the military are at a time in their lives when habits are most formidable, and due to the near-total qualities of the institution involving resocialization to organizational norms and values, as well as isolation from family and friends, it is possible that the military may be inadvertently fostering an unhealthy culture of substance use. Understanding these implications for operation of organizations and socialization within those organizations, particularly in terms of behavioral trajectories, is critical to understanding how total institutions function and impact the life courses of individuals who participate.

*Physical—Effects of Substance Use*

Most people use substances, at the very least, for the physical effects they have on the body. Aside from enhancing social situations and bonding with friends, many would argue that using alcohol or drugs is simply *fun* (Robinson et al., 2017).

Other physical effects of substances may encourage their use. For example, hallucinogens and stimulants have been found to assist with weight loss, and other illicit drugs have been used for enhanced sexual experiences or improved energy and motivation to work (Brecht et al., 2004; Boys, Marsden, & Strang, 2001). Some substances (alcohol and marijuana) have even been found to alleviate the effects of other drugs (Boys, Marsden, & Strang, 2001).

The adrenaline rush of experimenting with drugs and alcohol is a motivating factor for many (Cherpitel, Meyers, & Perrine, 1998). When applying this concept to servicemembers, the aspect of

selectivity into the military must also be taken into account as well. It has been found that individuals with a propensity for risk taking may be at a predisposition to join the military (Teachman, Anderson, & Tedrow, 2015; Mahalik et al., 2015). This includes an inclination toward risky health behaviors like drug and alcohol use as well (Teachman, Anderson, & Tedrow, 2015; Mahalik et al., 2015). Taken together, the background characteristics of servicemembers may be an important precursor to substance use within the military.

**Costs of Substance Use**

In addition to the relative benefits of substance use, there are important costs that must be considered as well. Below I detail the consequences of substance use, broken down into three key costs; economic, psychological and physical, and social.

*Economic Costs*

One of the most obvious costs of substance use in the military is the threat of being caught using, or using excessively (in the case of alcohol). Since the 1980s, the military has worked hard to decrease the amount of substance use during and after military service within its ranks (Wallace, Sheehan, & Young-Xu, 2009; Bachman et al., 1999). Various new policies, including drug testing, serious punishments for testing positive or being found to be in the possession of drugs, raising the US military base drinking age to 21, and increasing early prevention and intervention programs have all greatly reduced the amount of drug and alcohol use amongst service members, especially while enlisted (Wallace, Sheehan, & Young-Xu, 2009; Bachman et al., 1999). Generally, there was a decrease in drug use while in the military from 37% in 1980 to six percent in 1998 (Ames, Cunradi, & Moore, 2002). In spite of decreases in overall drug use, however, there is evidence of increased prescription drug misuse while serving on active duty and after exiting the service, and compared to civilians (Bray et al. 2010; Miech et al., 2013; Golub & Bennett, 2014; Vazan, Golub & Bennett, 2013; Drug Facts: Substance Abuse in the Military, 2013). In addition, alcohol use still appears to be a significant problem. Although there is an overall decrease in the number of individuals seeking treatment for alcohol use disorders or testing positive for drug use, it is

possible that many individuals are avoiding treatment because of the stigma associated with using (Kelsall et al., 2015; Eisen et al., 2012; Bray et al., 2010).

Fear of expulsion from the military, court marshalling and jail time (if a crime was committed in joint with the substance use, such as Driving Under the Influence), and a dishonorable (or other-than-honorable) discharge status are all real threats to individuals using while serving (Kelsall et al., 2015; Eisen et al., 2012; Bray et al., 2010). These consequences, though similar to civilian consequences for substance abuse, can be even more consequential for veterans when military benefits are taken into consideration. Discharge statuses can influence whether or not a veteran is able to collect VA benefits, such as the GI bill for schooling (Wilmoth & London, 2013) or healthcare. It can also effect the likelihood of being hired after exiting the service (Chakrabarti, 2013), and addiction in general increases the likelihood of absenteeism, workplace accidents, and being fired (Henslin, 2011). The penalties of illicit substance use or excessive alcohol use while serving can lead to severe economic loss (including the cost of the substances themselves) and even criminal consequences, however the benefits of alcohol use (and the legality of alcohol) may still encourage its use. Similarly, the legality of marijuana in Washington State (though not in the military) may promote its use following service as well.

*Psychological & Physical – Addiction*

The psychological deterrents of substance use are two-fold. On one hand, excessive use of alcohol or even just a one-time experience with illicit drugs can lead to a life-long addiction (Robinson et al., 2017). On the other hand, using substances as a coping mechanism or to self-medicate can provide immediate relief to those suffering. Repression of stress and traumatic events such as those experienced in the military (isolation, loneliness, combat exposure, sexual trauma, etc.) may lead to an unhealthy mental state, and could therefore perpetuate a cycle of addiction if left unexplored. The military's encouragement of alcohol use to promote socialization may also inadvertently reinforce unsafe drinking behaviors like binge-drinking and consumption before or during school or work, assault, and unwanted sexual contact (Wechsler et al., 1994, Henslin, 2011). The consequences of addiction are endless, but

some examples include economic loss, psychological and physical dependence, and even death (Henslin, 2011).

The dangers associated with drug and alcohol use may also discourage their use. Individuals with a history of addiction in their family may be more likely to avoid alcohol or drugs for fear of the disease or simply because of the devastation it may have caused with a family member or friend (Robinson et al., 2017). The negative physical side-effects of drinking (hangovers) and drug use (withdrawal) may also discourage high levels of use or experimentation with substances. In addition, increased exposure to a host of diseases, such as HIV and Hepatitis may also deter individuals from using drugs (Stein, 1999).

The physical and psychological sensations associated with drug or alcohol use may also dissuade servicemembers from using. Some individuals may not be interested in alcohol or drugs due to the loss of control, or dislike the feeling of the "high" or "buzz". Some may avoid solely because they don't like the taste of alcohol. In addition, if addicted, maintaining the addiction would be extraordinarily challenging while serving, as it would both be hard to hide their addiction (particularly the physical side-effects), and to complete necessary military functions, such as daily job duties (Henslin, 2011).

*Social –loss of family/friends, isolation*

Finally, there are plenty of social losses associated with substance use. Choosing to use substances may isolate the individual from family members and friends who don't approve (Robinson et al., 2017). Continued use or addiction can lead to collateral consequences, such as stealing to acquire money for substances and jail time (Henslin, 2011), and could further isolate users from their previous social spheres. In addition, drug abuse increases the likelihood of divorce or separation from a spouse, as well as the likelihood of spousal abuse (Henslin, 2011). Individuals with family members who have problems with substance abuse might not want to follow in their footsteps. Drug abuse can even stop social development and lead users to experience a loss of interest in hobbies that used to bring them joy (Robinson et al., 2017). For these reasons, and given the stance of drugs verses alcohol within the military institution, it is possible that servicemembers may be more inclined to use alcohol while serving, and avoid drugs, at least until after exiting the service.

**Summary of Shortcomings of Prior Literature**

In sum, insights on the operation of the military specifically as an institution have been theorized in the past, but little direct research exists. Although there is some research available about the general degree of substance use in the military (both drugs and alcohol), many of these studies are limited.

First, the bulk of relevant studies include little reference to military life transitions (i.e. civilian, servicemember, veteran) or the life course perspective, which may have an influence on why one substance is used (or not) over another. For instance, research finds that Vietnam veterans who used heroin during service decreased or stopped use entirely after returning home from deployment (Stanton, 1979; Robins and Slobodyan, 2003). Comparable findings are noted by a subsequent study which finds that half of the sample of enlisted Army Vietnam servicemen had experimented with heroin or opium while deployed, yet only 10% continued a degree of use upon return home, and less than one percent showed symptoms of dependence. These findings can then be compared to a parallel sample of enlisted Army servicemen who tested positive on a urinalysis before leaving Vietnam. Of these veterans who admitted to drug use while deployed, only seven percent exhibited symptoms of dependence after returning to the United States., regardless that 75% of the veterans felt that they had a dependence on heroin/opium while deployed (Robins, Davis, and Goodwin, 1974). Unfortunately, both studies fall short in terms of comparisons of substance use across various life transitions (i.e. civilian, active duty, veteran).

Second, the many analyses look primarily at marijuana use or solely at prescription drug misuse and tend to lump any reference of illicit drugs into one vague category. Generally, these studies lack direct comparison across these different categories of substance, and there have been few that include alcohol in the comparison with other drugs. This makes it challenging to unpack the specific mechanisms driving individuals to use specific substances. For example, the NLSY-97 question on "hard" drug use asks, "*Excluding marijuana and alcohol, since the date of last interview, have you used any drugs like cocaine or crack or heroin, or any other substance not prescribed by a doctor, in order to get high or to achieve an altered state*". While this question is useful in a generic sense, it doesn't provide a sufficient amount of detail in terms of understanding patterns of usage across specific substances (i.e. cocaine,

heroin, prescription drugs, etc.). In addition, studies often lack direct comparisons to other key substances, like alcohol and marijuana. Without direct comparisons it is exceptionally challenging to compare/contrast the various mechanisms driving usage for one particular substance over another.

Third, there are relatively few applicable data pertaining to differences according to a variety of socio-demographic characteristics that may affect motivations to use varying substances. The majority of research focuses on older eras of veterans, with few touching on the post- 9/11 era.

Finally, and most importantly, I was strained to find studies that research *why* service members are using some substances at one rate and others at another, and there are very few studies that discuss how the military affects the variability of use for each substance.

**Current Study**

In this analysis I expand upon previous research by first comparing data from a cross-section of veterans on their behaviors and experiences as a civilian, servicemember, and veteran, using data from a survey that I created[17]. By constructing my own survey, I can improve upon the ambiguous nature of the drug use question (and other problematic indicators) on previous surveys by forming distinct subsections for each substance in question, along with a more explicit definition of what is included in that substance's category. I aim to enhance previous literature by comparing rates of usage for various types of substances (alcohol, prescription drugs, marijuana, and a variety of illicit drugs) all in one place. I also take into consideration several socio-demographic characteristics, including combat exposure and branch of service. Additionally, I focus recruitment to veterans who enlisted on or after September 11, 2001, with the goal of gathering in-depth knowledge on this understudied population of veterans. Finally, I conduct interviews with veterans in order to gather data on the costs and benefits of using or abstaining from specific substances. I believe that with this exploratory data I will be able to provide greater understanding into how behavioral pathways might be transformed by membership in specific

[17] With the assistance of my research partner, Daniel Nolan.

organizations (in this case the military) and how participation may affect the trajectory of life course outcomes for the individual.

## DATA & METHODS

### Survey Methodology

I created an online[18] survey of American veterans of the post-9/11 era that are currently residing in Washington State. This survey is critical in order to explore detailed rates of substance use throughout the military life course across a variety of socio-demographic characteristics. It is important to highlight that this sample is not random nor generalizable to the general population of veterans in Washington or the United States. My aim in conducting this research is not to apply these concepts to all veterans –it is simply to provide a picture of what substance use may look like for this sample. For this reason, I aimed to collect as diverse of a sample as possible, in order to try and gather a *variety* of experiences, rather than the most common.

I use a targeted recruitment model. I sought out a wide variety of veterans' organizations, including Veterans Affairs offices, campus veteran organizations[19], and local veteran outreach newsletters. Simply reaching out to veteran outreach programs is not enough, however, as not all veterans are adequately represented at veteran outreach organizations. For this exploratory study, it is important to gather a wide representation of veterans, not just those who are savvy at using veteran outreach

[18] With the assistance of my research partner, Daniel Nolan. The survey is hosted by Google Forms. Respondents were able to access the survey via a link provided on the recruitment materials. The survey is organized into four distinct sections (each a separate page); demographic data, experiences prior to military service, experiences during military service, and experience after military service. Demographic information is only collected once on the survey, so it is assumed that all data is taken in the "present" time; after service (i.e. number of kids, highest education achieved, etc.). Respondents had to answer all questions in order to move on to the next page, though "Prefer Not to Answer" was an option on every question for those who were not interested in disclosing information on a particular indicator. The final page provides interested individuals with a link to a separate Google Form that collects first name and email in order to enter them into a drawing to win an iPad Mini. The raffle survey is not and cannot be linked in any way to the military survey. Respondents are also provided with the study email for any questions as well as a way to reach out if interested in participating in an interview.

[19] Daniel and I chose not to reach out to American Legion or the Veterans of Foreign Wars, as both organizations are typically geared toward older eras of veterans, and have been found to be scarcely used by younger, post-9/11 veterans (Klimas, 2014).

organizations. In addition, those using the organizations may be the least likely to have had or currently have substance abuse problems. Therefore, I also recruited from locations that may include veterans with health issues or who may be struggling financially, such as VA clinics and hospitals, Department of State Health Services offices, and substance abuse clinics.

In addition to specific veteran organizations, I aimed to make my study available to the widest audience possible. For these reasons, I also recruited from local grocery stores, feed & seed/hardware stores that typically have community bulletin boards, businesses that are known for employing veterans (i.e. Walmart and Home Depot), and libraries.

Overall, the list of eligible business/organizations were determined based on the following criteria; clientele (veteran facilities, student veteran centers, substance use offices), publicity (libraries, DSHS, grocery stores, hardware stores), variety (different types of grocery stores), potential for homeless veterans (libraries, DSHS offices), and high number of veteran hires (Walmart and Home Depot[20]).

In order to recruit the most possible veterans, but also being mindful of limitations on time and money, I located a map (US Department of Veteran Affairs, 2015) that indicates the counties in Washington State with the densest populations of veterans (although not controlled for general population[21]). In each of the selected counties, I then created a spreadsheet of all target organizations and businesses that were in that county, organized by town/city. If a town in the selected county had at least two identified organizations or businesses, then it was added to a separate spreadsheet of locations to visit or contact[22].

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[20] After the first recruitment trip to Eastern Washington Daniel and I had to revise our list of businesses to accommodate changes in policies at Walmart and Home Depot, neither of which could reliably distribute our materials. We replaced the Walmarts with Fred Meyer grocery stores who did have community bulletin boards, and replaced the Home Depots with local feed and seed stores that had community boards for posting flyers. We found that many Safeway grocery stores no longer have community boards either, but most were happy to post our materials in their employee break room when requested, so we maintained Safeways in our list of outreach locations.

[21] In addition to these counties I added several that were less dense but were near to key veteran resources or were close to military bases in the state.

[22] For the sake of saving resources, there was one exception to this rule – if one of the two locations in the town were places that could not be reached via phone/email (i.e. a grocery store), then the town was deemed too small and not worth commuting to just for two in-person locations. In addition, due to the vast number of substance use disorder clinics in the state, we chose to include a randomly selected 20% of clinics in cities that had more than 10 clinics total, or 2 clinics in towns that had less than 10 total.

The final spreadsheet contains a list of 21 counties in Washington, with a total of 104 towns/cities to contact[23]. We contacted all locations by phone first then email, excluding the grocery stores/hardware stores, which we found were more successful if contacted in person[24].

When contacting the aforementioned locations, I asked if it would be possible to leave flyers, business cards, or email them a pre-formatted email/Facebook announcement that they could advertise for us. The flyers and business cards all contain links to our survey, as well as a contact email for those interested in participating in an in-depth interview. Therefore, the interview and survey samples are roughly from the same pool of respondents.

In addition, I also sought out individuals via digital resources, including Facebook groups and Craigslist. I located Facebook buy/sell, event, or veteran groups by county and town using the search group function on Facebook and adding all relevant groups. Once accepted by the group administrators I was able to post a copy of our recruitment information, survey link, and contact email for individuals to access[25]. A similar process was used for Craigslist as well[26].

I believe that creating and fielding my own survey, rather than using a currently existing database, is essential to this research. As I was able to pull interview respondents from roughly the same pool of survey respondents, I am able to identify any major social desirability bias in the interviews (by comparing substance use rates in the interviews to the rates in the survey). While I could have drawn on a pre-existing survey, I believe that significant flaws exist in the current most reliable database that warrants the creation of my own survey. Previous research on substance use in the military has relied heavily on the National Longitudinal Survey of Youth, 1997. While this database is exceptional in many

[23] Responsibility over specific counties were split across myself, Daniel, and a small team of sociology undergraduate research students.
[24] For locations that were designated in-person and those who did not answer their phone/email Daniel and I drove to directly.
[25] Individuals who were members of the groups were able to freely share our information with other friends and veterans who might be interested.
[26] I posted our information under the categories of "community/general", "community/volunteers" and "community/gigs/domestic work", since we compensated our recruits. All survey participants were compensated for their time by being entered into a raffle to win an iPad Mini.

ways (such as the longitudinal nature of the data, and the large sample size), it has several critical shortcomings that can easily be improved upon with the administration of my own survey. [27] The final survey includes 110 eligible respondents.

My survey corrects for the limitations in the versatility of important NLSY97 indicators. First, I include several questions on combat status rather than one. For example, one question indicates whether or not the individual was deployed, and a second asks whether or not combat was *experienced* while deployed. I also include several other questions pertaining to the nature of combat, such as if they were ever exposed to any hazardous materials or if they ever saw a dead body while in combat.

In order to remedy the shortcomings of the drug use question from the NLSY97, I include several questions on our survey that ask specifically what drugs the respondent has used at each point in time (before, during, and after service) as well as an option to indicate their reasons for using these drugs on the same timeline, and whether or not they had ever just "tried" one of these illicit drugs. I provide a detailed list of drugs for respondents to identify from, rather than just lumping them all into the category of "illicit" or "hard" (i.e. cocaine, LSD, MDMA, spice, etc.). Aside from the drug use questions, I provide the same set of questions in separate subsections for alcohol, marijuana, and prescription drug misuse.

[27]The first problem in the NLSY97 lies in the wording of the question to assess combat status among veterans. The question asks if the respondent has ever served in a combat/war zone. The flaw here is that it doesn't specifically ask if the individual has actually *experienced* combat. While deployment to a combat zone regardless of whether or not combat was experienced can have obvious effects on the wellbeing of the individual (such as stress of being in a new environment, isolation from family/friends, fear of experiencing combat, etc.), *actually* experiencing combat (such as having to fire your weapon, being injured in combat, or witnessing friends/fellow servicemembers experience combat, injury, or death) will have greater negative consequences on the individual. By not specifying whether or not the respondent experienced combat while deployed, the NLSY97 effectively underestimates the effect of combat on servicemembers. The second problem in the NLSY97 is with the question on hard drug use (there are separate questions for marijuana use and drug use). The question asks, "Excluding marijuana and alcohol, since the date of last interview, have you used any drugs like cocaine or crack or heroin, or any other substance not prescribed by a doctor, in order to get high or to achieve an altered state?" While this question is useful in a generic sense, it doesn't provide a sufficient amount of detail in terms of understanding motivations to use varying substances. I believe that the motivation of an individual to use a hard drug, such as heroin, may be very different from the motivation of a respondent to use an alternative drug, such as psychedelics (like LSD, MDMA, etc.), therefore lumping them together (and biasing the question by only mentioning heroin, crack, and cocaine) makes it difficult to determine whether or not motivations vary by type of drug. In addition, this NLSY97 question is also worded in a convoluted way that makes it difficult to determine whether or not it captures prescription drug misuse.

In order to create meaningful descriptive data, I chose to create several indices from the variables, as outlined below[28].

The first is an index from the alcohol use variables. The Alcohol Index is an adequate measure of alcohol use for the respondent, based on the following five questions:

6. *Have you ever consumed alcohol (more than just a "sip")?*
7. *About how much alcohol do you drink per week? One drink is considered to be one beer, one glass of wine, or one single-shot mixed drink.*
8. *About how much alcohol do you typically drink in one setting?*
9. *How often do you do you drink alcohol before or during school or work?*
10. *How often in the average month do you drink to get drunk?*

Respondents were assigned a value based on their responses (weighted by degree of problematic behavior), which was added together for each question to create the index. The final index ranges on a continuous scale from 0 to 5, with five indicating the heaviest degree of alcohol use. The index was created for each stage as well; before service, during service, and after service. I use Cronbach's Alpha in order to measure internal consistency. The Alcohol Index prior to service has a Cronbach's Alpha value of 0.78; during service has a value of 0.76, and after has a value of 0.75.

I also create a Marijuana Index in order to measure participation and frequency of marijuana use for each respondent. This index is based on the following questions:

3. *Have you ever used marijuana?*
4. *How often do you use marijuana?*

These questions were asked for each stage of the military life course; before, during, and after service. The scale ranges from 0 to 6, with a score of 6 indicating the heaviest degree of marijuana use. For readability, and as there are only two questions to create this range from, we chose to multiply the index value by three so that the scale ranges from 0 to 6 rather from 1 to 2.

Using the majority of combat questions, I create a Combat Exposure index in order to combine all combat questions into one useful index. The Combat Exposure index is constructed using the following questions:

8. *Have you ever been deployed?*
9. *Have you ever been deployed to a combat zone?*

[28] All data analyses were conducted with the assistance and guidance of my research partner, Alice Lazzar-Atwood.

10. *How many times have you been deployed to a combat zone?*
11. *Did you experience combat?*
12. *Were you exposed to wounded, dead, or dying people?*
13. *Were you ever physically injured due to combat or exposure to combat?*
14. *Were you ever exposed to environmental hazards, chemical warfare agents, ionizing radiation, or other potentially toxic substances?*

This index has a scale of 0 to 7, with 0 indicating no exposure to combat and 7 indicating consistent and high levels of combat exposure. The Combat Index has a Cronbach's Alpha value of 0.74.

The final index I create is a Transitionability Index, which tracks the ease at which respondents transitioned back into civilian life after military service. The Transitionability Index is based on the following questions:

14. *After your service, how difficult was it for you to find a job?*
15. *Do you feel that the job skills you learned while in the service are applicable to civilian life?*
16. *It was very easy for me to transition into the civilian job market (on a scale from 0-7)*
17. *There are plenty of transitional programs offered to help me adapt to the civilian job market (on a scale from 0-7).*
18. *There should be more transitional programs to help me adapt to the civilian job market (on a scale from 0-7)*
19. *It was very easy for me to emotionally transition into civilian life (on a scale from 0-7)*
20. *There are plenty of transitional programs to help me adapt to civilian life (on a scale from 0-7)*
21. *I fully take advantage of transitional programs offered to help me adapt to civilian life (on a scale from 0-7)*
22. *There should be more transitional programs to help me transition to civilian life (on a scale from 0 to 7).*
23. *There are plenty of programs available to help me address any adverse effects of military service (on a scale from 0-7)*
24. *My military service helped me achieve things I couldn't have achieved without it (on a scale from 0-7)*
25. *My military service has made life more difficult for me than it was before service (on a scale from 0-7).*
26. *My military service has been a positive influence on my life (on a scale from 0-7).*

The final scale ranges from 0 to 14, with 14 indicating the easiest transition from the military to civilian life. Questions were corrected as necessary for directionality. The Transitionability Index has a Cronbach's Alpha value of 0.59

I also include a variety of descriptive variables in order to adequately assess the scope of our data. These include general demographic questions (such as gender, sexual orientation, marital status, whether

or not they have children, region lived at age 16[29], and age), military-related demographic questions (branch of service, age of enlistment, deployments, military job and rank, active duty vs. reserves/national guard), and difficult questions on homelessness, anxiety, Post-Traumatic Stress Disorder, Traumatic Brain Injury, and sexual assault. Due to the retrospective nature of the data, and because I did not ask each question at each point in time, some of the data is more truly cross-sectional in nature (i.e. number of children, marital status, etc.), valid at the time of survey which is in the "after service" stage of the life course. Only the time-varying questions (most of the mental health questions, all substance use questions) are able to track across each stage in the military life course.

Although my study has clear strengths, it isn't immune to weaknesses of its own. Clearly, conducting a cross-sectional study to gather longitudinal data is an obvious flaw[30], however I believe that the strengths of our own survey outweigh the costs of its limitations. Studies have already been conducted using the NLSY97 in order to understand rates of drug and alcohol use in the military. By providing more detailed questions in our own survey, I am able to answer questions that these previous studies have not. Mainly, with this survey sample I am able to gain preliminary insight into patterns of drug and alcohol use across the military life course. However, a survey is not enough to answer these questions, regardless

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[29] Respondents were asked to provide the city and state they lived in at age 16. From the state data, Daniel and I were able to create a "region" variable, based on the following regions: Northeast - ME, VT, NH, NY, MA, CT, RI, NJ, PA, DE, MD, South - FL, GA, AL, MS, LA, AR, TN, KY, SC, NC, VA, WV, TX, OK, Midwest - OH, MI, IN, IL, MO, IO, WI, MN, ND, SD, NE, KS, Rocky Mountains - MT, WY, CO, UT, ID, NV, West Coast - CA, OR, WA, AK, HI, Southwest - NM, AZ

[30] It is important to note some aspects of data-cleaning that were taken into consideration when constructing the final data set. First, any respondents that answered a question with "Prefer Not to Answer" or "N/A" was excluded from the analysis for that question. Because of this, the total number of respondents for each question varies from question to question. Second, only one individual in the survey indicates that they identify as a transman. Due to low sample size, I chose to exclude them from gender comparisons later in this paper. This decision is difficult, however one respondent is not enough to make large conclusions about transgender individuals in the military, and the experience of a transman will most likely vary greatly from that of an individual identifying as a man or woman. In addition, any respondents who did not meet the eligibility criteria were removed from the sample. This includes those who state they do not live in Washington currently, if they are still in the military, and if they enlisted prior to 9/11/2001. Finally, for several of the questions (especially on type of drug-use questions) respondents were allowed to select more than one answer. When analyzing these questions, each response was counted as a separate. For example, if a respondent provided three types of drug experimented with prior to service, they would count as one answer toward each type of drug, rather than one combined individual with all three options. Due to this caveat, several of the calculations include N values higher than the total number of respondents in the sample.

of how detailed the questions are. Therefore, I also conducted in-depth interviews to supplement the survey data.

**Interview Data & Methods**

In order to provide insight into how behavior trajectories might be altered by the processes within organizations, I conduct a mixed-methods study which utilizes both quantitative and qualitative data. These qualitative data help provide evidence of the causal mechanisms through which the quantitative patterns are observed (both in my own data and in the general literature). In other words, the interview data help solve the puzzle of *how* individuals evaluate the pros and cons of substance use and then use these steps to inform their subsequent behavior. This provides data on the mechanisms of substance use across the military life course that have not yet been observed in this discipline.

The interview recruitment process follows that of the survey previously described. The flyers and business cards left at various veteran organizations, clinics, businesses, outreach newsletters, and online resources all contained an email address that interested veterans were able to respond to in order to sign up for an in-depth interview[31].

To reduce bias and to encourage rapport with our respondents, I decided to keep the gender of the interviewer consistent with the gender of the respondent. So, in this vein, my research partner Daniel Nolan interviewed all male respondents and I interviewed all female respondents. I felt that the respondents might be more receptive to this arrangement, and might be more willing to disclose opinions that might be less socially-desirable to the opposite sex if this was maintained (Padfield & Procter, 1996).

Interviews took place between May 2017 and February 2018 and lasted anywhere from 45 minutes to four hours. Together, Daniel and I interviewed a total of 18 veterans, nine men and nine women. Interviews were conducted in person or over Skype video conferencing. To protect their privacy, each respondent was assigned a random pseudonym. Respondents were compensated for their time with a $15 Amazon gift card. By conducting in-depth interviews, I aim to uncover the costs and benefits that

[31] After conducting an interview, Danny and I also gave a copy of our study business card and emailed a follow up to the respondent to pass on our information to veteran friends who might be interested (snowball-sampling).

individuals use to evaluate substance use at each stage in the military life course. I am aware that asking individuals to recall their patterns of use in the past may be difficult, and subject to recall bias. However, I incorporate a variety of time-lining[32] techniques into the interview protocol in order to help provide respondents reference points during the interview process that can be used to help them recall substance use patterns in the past. While this does not eliminate recall bias, it does help minimize it.

I organized the interview protocol around three key themes – identity, gendered experiences (if any), and substance use, in addition to basic demographic and background questions. My goal in asking these types of questions are threefold; 1) to gather the deeper motivations and reasons behind substance use that a survey cannot capture, 2) to provide a greater context for my survey results, and 3) to provide a better picture of the experience of military service and the effects it has on the individual. Typical identity questions included, "*When did you make the decision to join the military, what made you want to join?*", "*Was there ever a time when you finally felt that you had become a soldier/sailor/airman/marine?*", and, "*How do you feel about being a veteran?*" Typical gender-experience questions included, "*Do you think your experience in the military was affected by your gender?*", and "*What do you think about women serving in the military?*" Finally, typical substance use questions included, "*What were the rules, official or unofficial, about smoking/drinking/drug use in the military? How were they enforced?*", "*Did you use any kind of substance (prescription/marijuana/alcohol/tobacco) before/during/after service? Why?*", and "*What was your opinion about alcohol or drug use before you were in the military? While you were in? After?*"

Completed interviews were transcribed and coded by topic using an open-coding method. The first round of coding was to observe general patterns, important ideas, or useful quotations. The second round of coding was more analytical. Here I analyzed the transcriptions primarily for themes or

[32] This includes asking interview questions in a chronological order and guiding the respondent to follow that timeline. The interview was divided into three sections; before service, during, and after. Daniel and I included several timeline questions throughout each section, such as, "what was your first job?", or "when did you enlist?" in order to help respondents pinpoint a precise moment in time as we were interviewing. These questions were followed by the vaguer questions (such as, "what were your drinking habits like") that were repeated in each section, in order to help the respondent mentally code them with a specific time period and respond accordingly.

subthemes, such as “cost of alcohol use” or “benefit of marijuana”. Though the interviews are qualitative data, I treat them in a quasi-quantitative manner when trying to assess comparisons across gender, or to the rates of substance use reflected in the survey. Despite this particular treatment of the data, all interviews are primarily used to descriptively understand *why* veterans used or did not use substances at various stages in their lives.

I believe that conducting this research on eligible veterans in Washington State is useful for several reasons. First, veterans living in Washington may represent a wider picture of the United States than civilians living in Washington State would, as many of them were likely stationed in Washington from other parts of the country originally, and then chose to continue to reside in state after exiting the military. Second, Washington (especially Seattle) has fairly liberal drug policies, including legalized recreational marijuana, clean needle exchanges, and is currently proposing the country’s first safe-injection sites for heroin users (Greenstone, 2017). With this background, it may be easier to get veterans talking about drug use, since they may feel like they are in more of a safe space to discuss it (decreasing social desirability bias). Finally, Washington is home to seven military bases, including Joint Base Lewis-McCord in the south Sound (Army/Air Force), NAS Whidbey Island (Navy), and Fairchild (Air Force), making it a prime location to study military personnel (Bases in the State of Washington, 2018).

In total, Daniel Nolan and I interviewed 18 veterans. I interviewed nine women; seven in person and two via Skype video-calling. Daniel interviewed the remaining nine men, all in person. Each interviewee was administered a brief demographic survey following the interview to complete. All respondents completed the demographic survey except for one, Wendy. Based on the data from the 17 veterans who elected to complete the survey, the following demographic information is obtained.

*Interview Demographics*

The average age of the veterans is about 31.5 years old, with the oldest being 37 years old and the youngest being 26. Eight of the veterans were born on the West Coast of the US (four in Washington State), two on the East Coast, two in the Rocky Mountain region, four in the Midwest, and one was born outside the US (Taiwan). The racial composition of the sample is primarily white/Caucasian (12), one is

East Asian, one is Hispanic/Latina, and three are of mixed descent (one is Native American and White, one is East Asian and White, and one is White and Hispanic/Latino). Sixteen identify as heterosexual and one identifies as bisexual.

When asked about their class (based on income and education) growing up, two marked upper-middle class, six marked middle class, five indicated working class, three indicated lower-middle class, and one wrote in "poor people". Three of the respondents are currently students, one is unemployed and searching and also a student, one is employed and also a student. Two respondents are self-employed, and three are unemployed but not searching for work. Seven are employed in general. Of those who are employed, eight are employed full time and three are employed part time. The household income levels vary from less than $15,000 per year to more than $99,000 per year. One interviewee marked less than $15,000 per year, two indicate $15-34,000, two report in the $35-49,000 range, two in the $50-64,000 range, four indicated $65-79,000, two marked $80-99,000, and three marked above $99,000 per year. The sample of veterans is well-educated, with only five not holding a college degree, though they all have completed some college. Four veterans completed 2-year or Associates degrees, five completed four-year degrees, and three hold Master's degrees.

Of the 17 veterans who completed the demographic survey, 10 are currently married, three are divorced, one has never been married, and three are cohabiting with their significant others'. About half the sample has children (one has two step-children and a biological child) and the other half do not. The political orientation of the sample is fairly diverse. Three identify as very liberal, four as liberal, one as slightly liberal, four as neither liberal nor conservative, one as slightly conservative, one as conservative, one selected two options--neither liberal nor conservative *and* slightly conservative, and finally one just wrote in "common sense". Interestingly, based on the interviews themselves, the majority of the sample experienced some sort of history of trauma in their past—four have parents who passed away prior to or immediately following their entrance into the military (one after she exited the service), three experienced homelessness prior to service, three indicated that their mother suffers from mental health issues (some suffering significant verbal abuse as children), four expressed that their fathers are alcoholics, and four

spent time taking care of seriously ill family members. Two have brothers that were addicted to drugs, both of whom later died (one committed suicide), one interviewee's father is in and out of prison, two have abusive fathers (one was a step-father), one has a father with anger problems, one grew up with a single mother, several grew up with divorced parents, and one's home burned down immediately before leaving for basic training. Only two veterans grew up in relatively chaos-free households.

## RESULTS & DISCUSSION

### Descriptive Statistics

The purpose of the quantitative data for this article is to paint a descriptive picture of substance use in the military, using retrospective data from a survey that I created. In order to achieve this goal, I have created several descriptive tables and charts[33]. Each table assesses a variety of important characteristics of the sample, including basic demographic information, stress variables, military descriptive variables, and of course, substance use variables. As the interview data is drawn from roughly the same pool as the survey respondents, I believe it is essential to be able to compare and contrast the data from both the quantitative and qualitative portions of this study. This comparison will allow me to address some aspects of social desirability bias, and address to some degree if the sample of interviewees is similar or much different from those taking the survey.

The survey captures the presented demographic information at one point in time—when the respondent elected to take the survey, which is after they have exited the military. Table 1 presents the basic demographics of the survey respondents.

[33] With the assistance of my research partner, Alice Lazzar-Atwood

Table 1: Descriptive Statistics for Basic Demographics

| Variable | Reported at Time of Survey (After Service) | | |
|---|---|---|---|
| | *Percent* | *Mean (median if mean is not calculable)* | *S.D.* |
| **Age at time of Survey** | -- | 31.45 | 4.98 |
| **Gender** (N=110) | | | |
| *Man* | 69.09 | -- | -- |
| *Woman* | 30.00 | -- | -- |
| *Transman* | .91 | -- | -- |
| **Race** (N=109) | | | |
| *White* | 75.45 | -- | -- |
| *Non-White* | 23.64 | -- | -- |
| **Sexual Orientation** (N=110) | | | |
| *Homosexual* | 1.82 | -- | -- |
| *Bisexual* | 4.55 | -- | -- |
| **Marital Status** (N=110) | | | |
| *Never Married* | 11.82 | -- | -- |
| *Never Married but Cohabiting* | 9.09 | -- | -- |
| *Married* | 56.36 | -- | -- |
| *Separated* | 4.55 | -- | -- |
| *Divorced* | 18.18 | -- | -- |
| **Employment** (N=109) | | | |
| *Employed* | 59.63 | -- | -- |
| *Unemployed* | 40.37 | -- | -- |
| **Status of Employment** (N=65)* | | | |
| *Full Time* | 75.38 | -- | -- |
| *Part time* | 24.61 | -- | -- |
| **Highest Degree Achieved** (N=110) | | AA/2-year degree | |
| *High School Graduate* | 3.64 | -- | -- |
| *GED* | 2.73 | -- | -- |
| *Some College* | 30 | -- | -- |
| *AA or 2-year Degree* | 26.36 | -- | -- |
| *4-year Degree* | 28.18 | -- | -- |
| *Graduate or Professional School* | 9.09 | -- | -- |
| **Currently Enrolled in College** (N=110) | 52.73 | -- | -- |
| **Children** (N=110) | 58.18 | 1 | -- |
| **Household Income (per year)** (N=107) | | 30,000 to 79,000 | -- |
| *$29,000 and Under* | 21.50 | -- | -- |
| *$30-79,000* | 49.53 | -- | -- |
| *$80,000 and Over* | 28.97 | -- | -- |
| **Region Lived when 16** (N=107) | | | |
| *West Coast* | 62.62 | -- | -- |
| *Southwest* | .93 | --- | -- |
| *Rocky Mountains* | 4.67 | -- | -- |
| *Midwest* | 12.15 | -- | -- |
| *South* | 11.21 | -- | -- |
| *Northeast* | 6.54 | -- | -- |

| | | | |
|---|---|---|---|
| *Germany* | .93 | -- | -- |

*Unemployed respondents are responsible for the low N here

At the time that the survey is administered, the mean age of respondent is 31.45 with a standard deviation of 4.98. About 69% of my sample identify as men, 30% as women, and .91% identifies as Transmen. The majority of the sample identifies as heterosexual, however 1.82% identify as homosexual and 4.55% identify as bisexual. While the bulk of the respondents are White, 23.64% identify as a race/ethnicity other than white, including Native American, Hispanic/Latinx, Asian, African-American, and mixed race. The survey asks the respondents to identify where they lived at age 16 to get an idea of cultural norms they may have been brought up amongst during a key point in their life course. The bulk of the sample were living on the west coast at age 16 (62.62%), followed by the Midwest (12.15%), South (11.21%), Northeast (6.54%), Rocky Mountains (4.67%), and Southwest (.93%). Finally, one respondent lived in Germany when they were 16 (.93%).

Over half of the sample are employed (59.63%) while 40.37% are unemployed (though it is important to note that some of these individuals are not actively seeking work). Three-quarters of the working respondents are full time with the remaining 25% working part time. Over half of the respondents are currently enrolled in a college program. The sample is highly educated, with the median highest education achieved being an AA or other 2-year degree (26.36%). Graduate or professional degrees have been completed by 9.09% of the respondents, 30%% have an AA or two-year degree, and 28.18% have a four-year degree. Merely 3.64% only obtained a high school diploma, and 2.73% have completed the GED. The average household income range is diverse, but the majority of respondents' report that their household earns above $30-79,000 annually (49.53%). The next most prevalent income range is $80,000 and greater (28.97%), with the lowest number of respondents reporting in the $29,000 and under range (21.50%).

The majority of survey respondents are married (56.35%), but 18.18% are divorced, 4.55% are separated, 11.82% are never married, and 9.09% are cohabiting and have never married. Over half of the respondents have children (58.18%), with the mean number of kids being one.

Table 2 is characterized by general stress-related variables. These questions are asked, retrospectively, across the three time frames (excluding arrests); before service, during service, and after service. I also include T tests of the difference between each life course stage (for relevant variables), in order to evaluate if the observed differences are statistically significant for this sample. As the sample size is low (110 respondents in the survey), it is likely that observed statistically significant differences are significant for the greater population.

Table 2: Descriptive Statistics for Stress Variables

| Variable | Prior to Service (Civilian) | T Test of difference between Prior and During | During Service | T Test of difference between During and After | After Service (Veteran) | T Test of difference between Prior and After |
|---|---|---|---|---|---|---|
| | *Percent* | | *Percent* | | *Percent* | |
| **Arrests** | (N=109) | | | | (N=110) | -1.9083 (ANOVA value) |
| *Never* | 82.73 | -- | -- | -- | 90.91 | |
| *Once* | 10.91 | -- | -- | -- | 5.45 | |
| *2-3 times* | 2.73 | -- | -- | -- | 2.73 | |
| *4-5 times* | 1.82 | -- | -- | -- | .91 | |
| *6+* | .91 | -- | -- | -- | -- | |
| **Military Discipline** | | | (N=109) | | | |
| *Never* | -- | -- | 66.36 | -- | -- | -- |
| *Once* | -- | -- | 23.64 | -- | -- | -- |
| *2-3 times* | -- | -- | 9.09 | -- | -- | -- |
| Was Sexually Harassed | N=106 21.82 | 0 | N=106 21.82 | -3.4671** | N=106 9.09 | -3.2705** |
| Was Sexually Assaulted | N=106 13.64 | -2.0298** | N=106 6.36 | -1.9139 | N=106 1.82 | -3.5375** |
| Was Diagnosed with Anxiety | N=108 5.45 | 5.4824** | N=108 32.73 | 1.1222 | N=108 39.09 | 6.4777** |
| Was Diagnosed with Depression | N=109 5.45 | 4.9087** | N=109 29.09 | 1.3776 | N=109 36.36 | 6.2423** |
| Was Diagnosed with PTSD | N=108 .91 | 3.8265** | N=108 12.73 | 4.1744** | N=108 32.73 | 6.8777** |
| Was Diagnosed with TBI Ever | -- | -- | -- | -- | N=109 19.09 | -- |
| Was Homeless (N=109) | 10.91 | -- | -- | -- | 15.45 | 1.043 |

*p<0.05, **p<0.01

Looking at the data in Table 2, it appears that number of arrests decreases from before service to after, as 82.73% report never having been arrested prior to service and 90.91% report no arrests after exiting, though this was not found to be a statistically significant difference at p<.05. Almost 11% of the sample was arrested once prior to service, while only 5.45% have been arrested once after. Comparing

any arrests to never arrested, 15.46% had been arrested prior to serving, while only 9.09% have been arrested after serving.

Military discipline rate is asked in place of arrests for the during-service time period. While the majority of the sample has never experienced military discipline during their service (66.36%), 32.73% have. It is interesting to see that military discipline was much higher than arrest rates before or after service. As military discipline can encompass a wide variety and degree of discipline, it's hard to assess the precise meaning of this relatively high rate of discipline.

Sexual harassment prior to service is 21.82%, and remains at that level during service, with a sharp decrease after service (9.09%); the difference between during service and after being a statistically significant decrease at $p< 0.01$. This is interesting, as it is assumed that sexual harassment is high, at least for women, during service, yet the percentage is the same as prior to service. The decrease in sexual harassment between before service and after is also a statistically significant decrease at $p<0.01$. Sexual assault is also higher prior to service (13.64%), decreases during service (6.36%) (at a statistically significant level) and then drops substantially after service (1.82%), also at a highly significant level. Given the current media coverage on the high levels of sexual assault in the military, it is interesting to find that it appears lower than before service. It is possible that individuals before service were also in environments more-prone to sexual assault, including college campuses, which could lead to the increased rate before. The significant drop after service may represent removal from more previously threatening environments and a new, more stable, home life after exiting the military.

Diagnoses of anxiety and depression change considerably over the life course. Only 5.45% of individuals were diagnosed with anxiety prior to service, compared to a staggering 32.73% during service and 39.09% after service. These numbers may be an underestimate as well, as often anxiety goes undiagnosed. The increase from before service to during service is statistically significant, though the difference between during and after is not. The increase in anxiety from before service to after service is found to be significant at $p<0.01$. Depression follows a similar pattern to anxiety, though the increase after service is larger. Prior to service diagnosed depression rests at 5.45%, with an increase to 29.09%

during service (significant) and 36.36% after service (not significant). The change from before service to after service is a statistically significant increase as well. While less than one percent of individuals were diagnosed with Post-Traumatic Stress Disorder (PTSD) prior to service, almost 13% were diagnosed during (a significant increase) and almost 33% (also significant) were diagnosed after exiting the service. These increased rates of depression, anxiety, and PTSD may indicate the high degree of mental stress placed on individuals during service, and how this bleeds over into life after exiting the military. The survey only asks respondents if they were ever diagnosed with Traumatic Brain Injury once, rather than across the life course. Overall, 19.09% of respondents have been diagnosed with TBI at some point in their life.

The final variable represented in Table 2 is whether or not the respondent was ever homeless before or after service. Interestingly, rate of homeless seems to increase after service, with 10.91% indicating homelessness prior to service and 15.45% indicating homelessness after exiting the service, however this is not found to be a statistically significant increase, indicating that there is no change in rates of homelessness from before to after service.

Table 3 portrays the military-specific variables. These questions are asked retrospectively, but only at one point in time.

Table 3: Descriptive Statistics for Military Variables

| Variable | Percent | Mean | S.D. |
|---|---|---|---|
| **Age Enlisted (N=108)** | -- | 20.82 | 4.04 |
| **Age Exited Service (N=106)** | -- | 27.08 | 5.06 |
| **Branch of Service** (N=110) | | | -- |
| *Army* | 43.65 | -- | -- |
| *Navy* | 23.02 | -- | -- |
| *Marines* | 5.56 | -- | -- |
| *Air Force* | 10.32 | -- | -- |
| *Coast Guard* | 4.76 | -- | -- |
| *Reserves or National Guard* | 12.7 | | |
| **Mobilized from Reserves (N=109)** | 16.36 | -- | -- |
| **Enlisted (N=110)** | 87.27 | -- | -- |
| **Length of Service (N=107)** | | 6.38 | 3.01 |
| *Under 5 Years* | 36.45 | | |
| *More than 5 years* | 63.55 | | |
| **Deployed (N=108)** | 71.82 | -- | -- |
| **Deployed to Combat Zone (N=108)** | 66.36 | -- | -- |
| **Combat Exposure Index (N=105)** | -- | 3.50 | 2.10 |
| **Discharge Status (N=109)** | | | |
| *Honorable or Under Honorable Conditions* | 88.52 | -- | -- |
| *Medical Discharge* | 2.46 | -- | -- |
| *Other-than-Honorable Discharge* | .8197 | -- | -- |
| *Miscellaneous/Other* | 8.21 | -- | -- |
| **Transition Index (N=106)** | -- | 7.44 | 2.38 |

The mean age of enlistment for this sample is 20.82 years. The mean age exiting the service is 27.08 years old. The most common branch of service in the sample is the Army (43.65%), followed by the Navy (23.03%), Air Force (10.32%), Marines (5.56%), and Coast Guard (4.76%). In addition, 7.14% served in the Reserves and 5.56% served in the National Guard. The branch make up for these individuals is .91% Air Force Reserves, .91% Air National Guard, 8.18% Army National Guard, 10.91% Army Reserves, .91% Coast Guard Reserves, and 5.45% Navy Reserves. Of the Reserves and National Guard components, 16.36% were mobilized to active duty during their service. Just over 12% of the sample served in the military as an officer. Length of service averages just over 6 years (with 63.55% serving more than 5 years), and 71.82% of the sample has been deployed. Sixty-six percent of those surveyed were deployed to a combat zone, and the mean score on the Combat Exposure Index is 3.503. The

majority of the sample received an Honorable discharge status (88.52%), 2.47% received a medical discharge, .8197% have an Other-Than-Honorable status, and the remaining 8.21% have miscellaneous other statuses. No veterans in the sample received a Dishonorable Discharge status. In terms of the transition scale, which identifies ease of transition into the civilian world from military service, the mean score is 7.444 on a scale of 0-14, indicating that the transition process is neither hard nor easy for most veterans.

The final table, Table 4 is comprised of all the substance use variables. These questions were asked retrospectively across all three stages of the military life course. I also include T tests of the difference between each life course stage (for relevant variables), in order to evaluate if the observed differences are statistically significant for this sample. Again, since the sample size is low (110 respondents in the survey), it is likely that observed statistically significant differences are significant for the greater population.

Table 4: Descriptive Statistics for Substance Use Variables

| Variable | Prior to Service (Civilian) | | T Test between Prior & During | During Service | | T Test between During & After | After Service (Veteran) | | T Test between Prior and After |
|---|---|---|---|---|---|---|---|---|---|
| | % / N | Mean/ St. D | | % / N | Mean/St. D | | % / N | Mean/St. D | |
| **Alcohol Index** | -- / 109 | 1.81/1.14 | 5.8965** | -- / 110 | 2.51/1.09 | -14.499** | -- / 110 | 1.40/.078 | -3.5214** |
| **Marijuana Index** | -- / 107 | 1.93/2.16 | -8.9308** | --/ 108 | .150/.78 | 8.4324** | --/ 110 | 1.97/2.33 | 0.26678 |
| **Ever Tried Hard Drugs** | 12.73 / 107 | -- | -1.8272 | 6.36/ 109 | -- | 1 | 9.09/ 109 | -- | -0.94232 |
| **Type Hard Drugs Tried** | -- / 106 | | | --/ 110 | | | --/ 108 | | |
| *Cocaine* | 6.25 | -- | | .86 | -- | | 4.84 | -- | |
| *Crack* | 2.35 | -- | | -- | -- | | -- | -- | |
| *Ecstasy/MDMA/Molly* | 4.69 | -- | | 1.72 | -- | | 1.61 | -- | |
| *LSD/Acid* | 4.69 | -- | | -- | -- | | .81 | -- | |
| *Meth* | .78 | -- | | .86 | -- | | -- | -- | |
| *Mushrooms* | 8.59 | -- | | 2.58 | -- | | 6.45 | -- | |
| *Opium* | .78 | | | -- | -- | | -- | -- | |
| *Spice* | .78 | -- | | -- | -- | | .81 | -- | |
| *Salvia* | -- | -- | | .86 | -- | | -- | -- | |
| *Heroin* | -- | -- | | .86 | -- | | .81 | -- | |
| **Type Hard Drugs Regl.** | --/ 107 | -- | | --/ 110 | | | --/108 | | |
| *Cocaine* | 1.81 | -- | | -- | -- | | -- | -- | |
| *Mushrooms* | .91 | -- | | -- | -- | | .91 | -- | |
| *Ecstasy/MDMA/Molly* | .91 | -- | | .91 | -- | | -- | -- | |
| *Meth* | -- | -- | | .91 | -- | | -- | -- | |
| *Spice* | -- | -- | | -- | -- | | .91 | -- | |
| **Prescription Drugs Tried** | 15.45/ 108 | -- | -2.7476** | 5.45/ 110 | -- | 0.33197 | 6.36/ 109 | -- | -2.7528** |
| **Prescription Drugs Regl.** | 3.64 / 107 | -- | 1 | 1.82/ 110 | -- | 0.57558 | 2.73/ 109 | -- | -0.44554 |

*p<0.05, **p<0.01

The changing scores on the alcohol index provide interesting insight into attitudes toward alcohol and the military. Prior to service the average score is 1.81 out of 5 (with the highest meaning high rates of use), indicating relatively low levels of alcohol use. During service this increases to 2.51 (a statistically significant increase), and after drops down below use before service, with a score of 1.40 (also significant). Overall, I find that the decrease in alcohol use from before service and after service to be statistically significant at $p<0.01$. This supports the idea that alcohol use increases during service, and once removed from the environment (be it stress, the culture, etc.), decreases substantially, and to lower amounts than even before service.

The marijuana index is on a scale from 0-6, with the highest score indicating high rates of marijuana use. Prior to service marijuana use is about 1.93, which drops substantially (and significantly) during service to .150. This is most likely due to the military's zero-tolerance policies on drug use. After service, marijuana use increases significantly back to about the same rate prior to service, 1.97. In fact, I find that there is no statistically significant difference between rates of marijuana use before and after service. This may imply that veterans are either resuming a habit they enjoyed prior to service, or are perhaps they are using marijuana as a mechanism to handle stress after having left the service (as indicated by the high levels of depression, PTSD, and anxiety after service in Table 2).

Based on the descriptive statistics in the table, it appears that hard drug use is more prevalent before service (12.73%), dips during service (6.36%), and increases after service (9.09%), although not to the level it is prior to joining the military. Despite these observations, none of the differences were found to be statistically significant. These trends may be influenced by a variety of factors, including age, the military's zero-tolerance policy on drug use while serving, and stress, though it is likely that the extremely low number of individuals using hard drugs is contributing to the lack of significant differences. When taking *type* of hard drug use into account, it appears the majority of individuals experimented with cocaine prior to service (6.25%), followed by several psychedelic drugs; Ecstasy/Molly/MDMA (4.69%), LSD/Acid (4.69%), and Mushrooms (8.59%). Experimentation with more serious drugs like opium (.78%), crack-cocaine (2.35%) and meth (.78%) are very low. One

individual also experimented with spice, also known as synthetic marijuana, prior to service (.78%). As for hard drugs *regularly* used prior to service, cocaine (1.81%), mushrooms (.91%) and Ecstasy/Molly/MDMA (.91%) were the only drugs used, and at very low rates. It appears that drug use prior to service, is low and primarily experimental. The experimental drugs of choice seem to be psychedelic in nature.

Hard drug use during service is even slighter than before. Again, the primary drugs tried and regularly used are psychedelics, with 1.72% trying Ecstasy/MDMA/Molly and .91% regularly using it, 2.58% trying mushrooms, and .86% trying salvia. Cocaine was tried at .86% during service, along with Meth, and Heroin. Meth was the only drug other than Ecstasy/MDMA/Molly used regularly during service, at .91%. Despite current news coverage on the spice epidemic in the military, none of the respondents in this sample used spice during their service.

After exiting the military, the primary drugs tried are cocaine (4.84%) and psychedelic drugs (mushrooms at 6.45%, ecstasy/MDMA/molly at 1.61%, an LSD/Acid at .81%). One individual tried spice (.81%), and only one tried heroin (.81%). In terms of regular use, mushrooms are used regularly at .91% and spice is used regularly at .91%. Despite the image of drug use being rampant among veterans, my sample continues to have relatively low drug use after service, and the drugs being used seem to be for experimentation and are primarily party and/or social drugs. This implies that veterans who are heavily using drugs may be from different eras of service other than the post-9/11 era, which this study examines.

Recreational use and abuse of prescription narcotics is another area in which the media has painted a picture of rampant drug use amongst veterans. In this sample, 15.45% of respondents have tried prescription drugs prior to service, with 3.64% regularly abusing them. During service the numbers drop to 5.45% trying prescription narcotics recreationally (a statistically significant difference) and only 1.82% regularly abusing them (not significant). Finally, after service the numbers increase from during (not significant), but are lower than prior to service, with only 6.46% trying (a statistically significant difference compared to before service) and 2.73% regularly abusing prescription drugs (not significant). Again, these findings are surprising. While prescription abuse does exist, it is much lower than many may

have expected. It is important to once again point out that the very low numbers of prescription drug abuse, particularly for regular use, may be contributing to the lack of statistical significance in differences across the life course.

*Explaining Substance Use*

Not pictured in the tables, our survey also asked the respondents about their reasoning for trying or regularly using the various substances. Individuals were asked to check all that apply for these questions. The results can be visualized in the following charts.

Figure 1: Reasons for Alcohol Use Across the Life Course

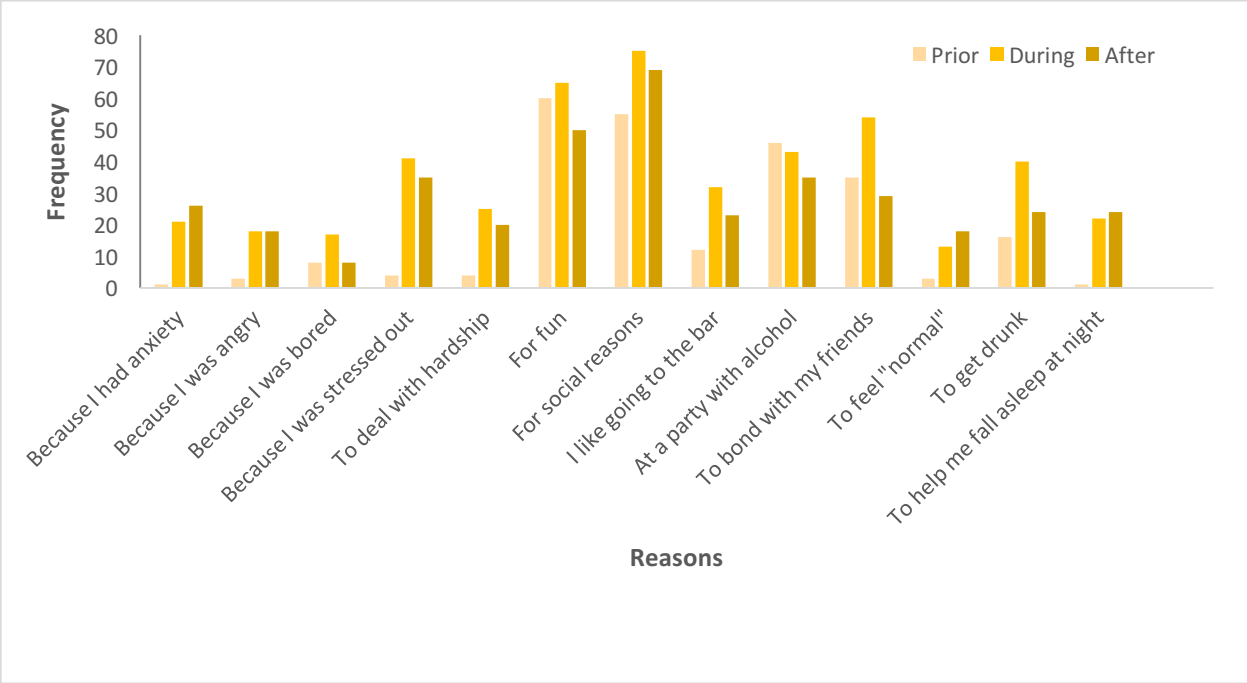


Figure 2: Reasons for Marijuana Use Across the Life Course

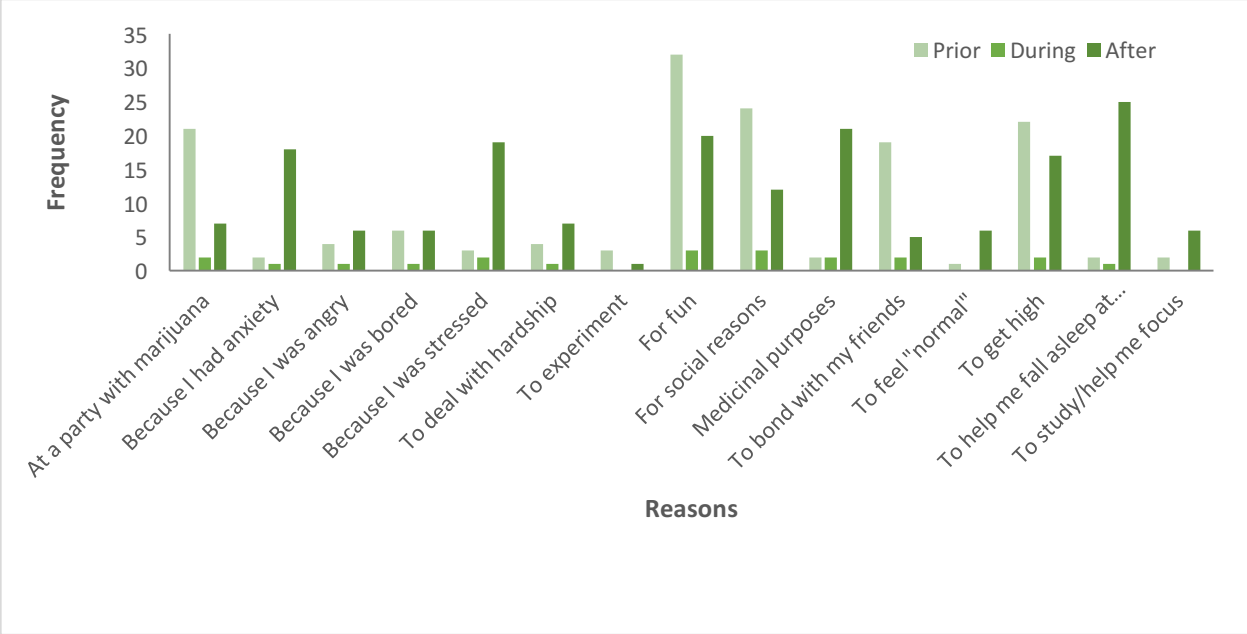



Figure 3: Reasons for Hard Drug Use Across the Life Course

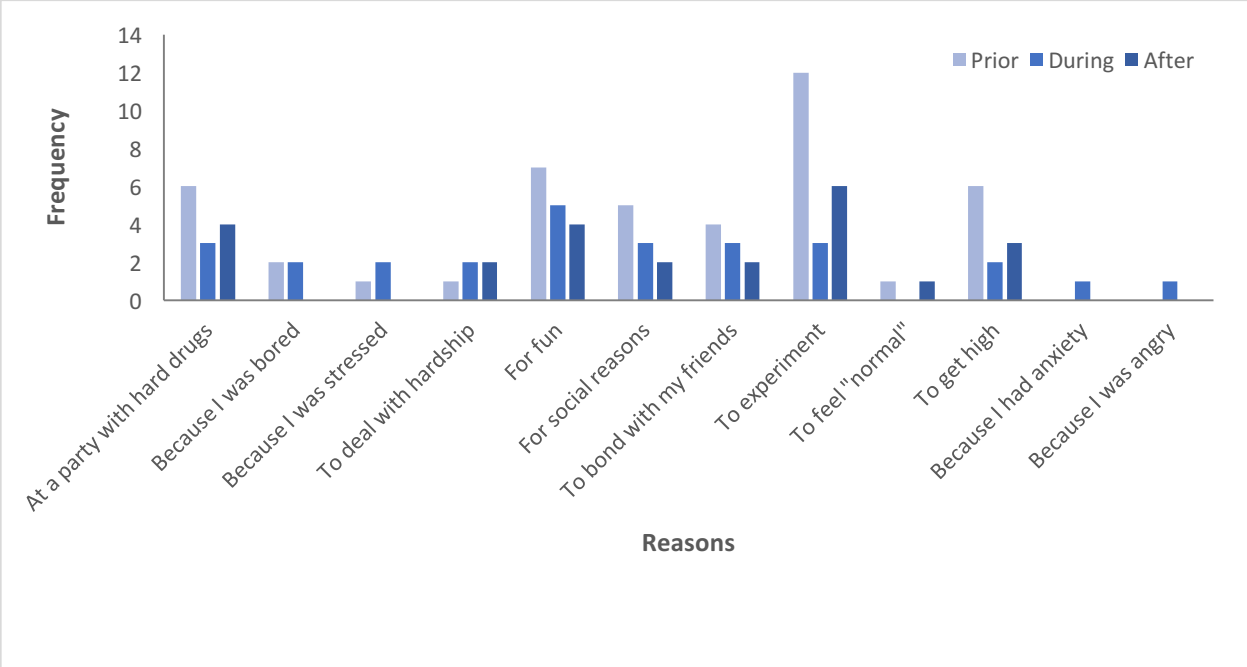
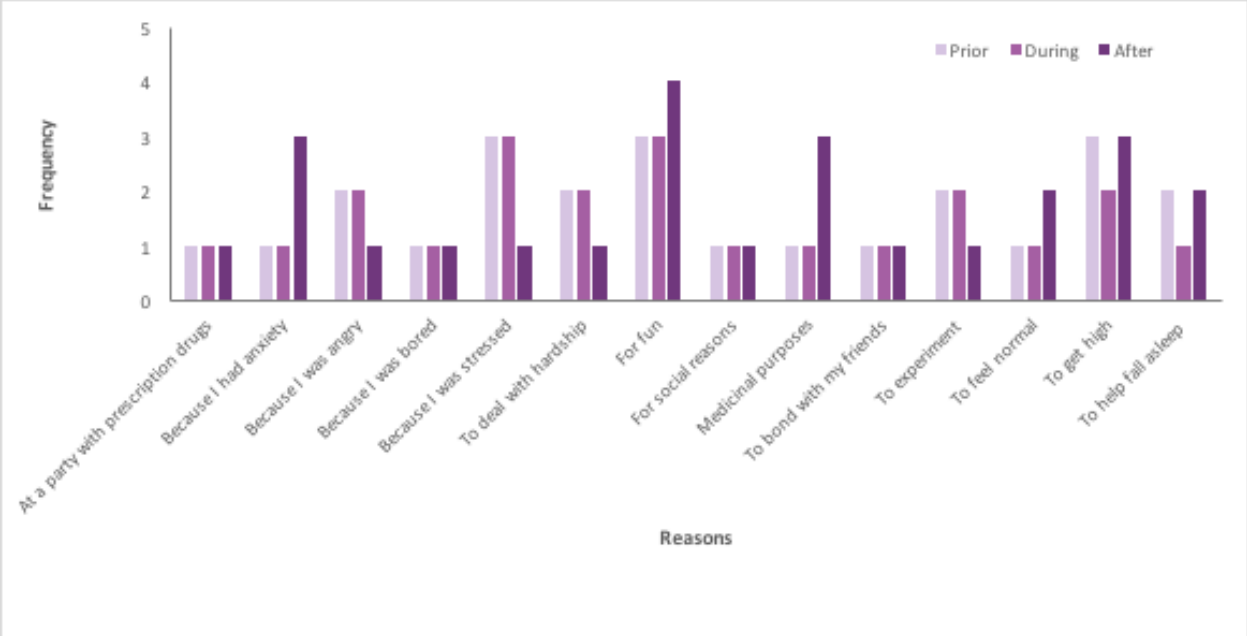


Figure 4: Reasons for Prescription Drug Misuse Across the Life Course




As seen in the charts, the primary reasons for using alcohol prior to service are primarily social; "for fun" (18.35%), "for social reasons, visiting with friends" (16.21%), accessibility in "being at a party where alcohol was served" (14.07%), and "to bond with friends" (10.40%). During service these reasons were maintained; "for fun" dropping to 11.64%, "for social reasons, visiting with friends" landing at 13.64%, and, "to bond with my friends" coming in at 9.82%. Last, alcohol use after service mimicked the reasons prior to service, with "for fun" representing 18.29%, "for social reasons, visiting with friends", at 16.16%, "being at a party where alcohol was served" at 14.02%, and "to bond with my friends" at 10.67%. Answers that were not popular across any stage are the stress-related reasons, like drinking due to anxiety, stress, boredom, or because life is difficult. While these reasons did increase during service, they dropped back down after, and were always under 4.5%, though "because I was stressed out" hit 7.45% during service.

Reasons for using marijuana prior to service were identical to the reasons for using alcohol – "for fun" (13.48%), "for social reasons, visiting people" (10.43%)-- although "to get high" also scored high, at

9.57%. During service marijuana use is very low (81.54% said they never used), however the reasons for use are across the board. The most common reasons re still “for fun” (2.31%), and “for social reasons, visiting with people” (2.31%), followed by “to get high” (1.54%), “to bond with my friends” (1.54%), “at a party where marijuana was used” (1.54%), and “because I was stressed” (1.54%). After service some more unique trends appear. The most common reasons for using marijuana is “to help me fall asleep at night”, with 8.40%, followed by “for fun” at 8%, “medicinal purposes” at 7.20%, and “because I was stressed” at 6%. “Because I had anxiety” also ranks toward the top of reasons, with 5.40%. It seems that marijuana, rather than alcohol, is used as more of a coping mechanism after service.

As assumed, the primary reason behind hard drug use prior to service is, “to experiment” (7.64%), followed by, “for fun” (4.86%) and accessibility; being at a party where hard drugs were present (4.17%). During service the primary reasons for use are “for fun” (3.70%), followed by “social reasons, visiting with people”, “to bond with my friends”, “To experiment”, and “at a party where drugs were present”, all at 2.22%. Finally, after service, hard drug use is primarily used “to experiment” once again (4.72%). “For fun”, and “at a party where drugs were present” were also noteworthy, at 3.15% each. Overall, hard drug use is low throughout the military life course, and is primarily attributed to experimentation or social reasons.

Last are the reasons behind prescription drug abuse. For those that abused prescription narcotics prior to service, the key reasons are, “for fun” (6.47%), “to get high” (5.04%), and “at a party where prescription drugs were being abused” (4.32%). During service it is hard to find a real trend in reasons behind use. “To get high”, “medicinal purposes beyond my prescription”, “for fun”, and “because I was stressed”, are all at 2.27%. These reasons are followed by, “because I was angry”, “because my life is hard and I’ve experienced hardships”, “to experiment”, and “to help me fall asleep at night”, each at 1.52%. After exiting the military, prescription drug abuse is primarily used “for fun” (3.03%), “to get high” (2.27%), “medicinal purposes beyond my prescription” (2.27%), and “because I had anxiety” (2.27%). Though rates of use are low, it appears that prescription drug abuse is primarily used for

fun/experimentation before service, for fun and coping during service, and for fun and coping with psychological or physical ailments after service.

**Qualitative Analysis**

It is important to note some of the unique aspects of service for each individual interviewed. Please note that all of the respondent's names (and the names of their friends and family members) have been changed to pseudonyms in order to protect their identities.

Of the 18 respondents, five served in the active duty Army; Lucy, Carolyn, Ray, Cameron, and Austin. Farrah served in the Army Reserves, but was chaptered out after she had her first child and stopped checking in regularly. She has an other-than-honorable discharge status. Riley served in the marines and Cody served in the Coast Guard, first active duty, though served in the Reserves toward the end of his service. Emmy and Noelle served in the Active Duty Air Force, and Noelle served as an officer. Noah (an officer), Tristan, Isaac (an officer), Aaron, Laura, Clara, Hannah, and Wendy served in the Active Duty Navy, although due to injury Wendy received an "erroneous" discharge after completing basic training. Noah joined the Reserves after serving active duty in the Navy and is still currently serving. He is the only participant who is still in the military. All of the veterans who participated in the interview were deployed, excluding Farrah, Carolyn, and Wendy. Laura, Clara, Riley, Noah, Isaac, Ray, Cameron, Austin, Aaron, and Lucy were deployed to combat zones, though only Riley, Noah, Isaac, and Cameron experienced direct combat/firefight. Both Riley and Cameron are diagnosed with Post-Traumatic Stress Disorder (PTSD), and Cameron is also diagnosed with Traumatic Brain Injury (TBI).

*Substance Use Prior to Military Service*

Illicit or Prescription Drugs

In general, it appears that the costs of hard or prescription drug abuse outweighs the possible benefits for the majority of interviewees in the sample. Although some respondents did experiment with these types of drugs, only one, Clara, admits to an addiction to illicit drugs. All other drug-using respondents describe it more as ideally, experimentation. Family influence and upbringing coupled with a general lack of interest (largely attributed to the physical, psychological, and social costs) seem to be the

major preventative factors against hard drug use prior to service. For example, for several of the respondents, "fear" or "loss of control" is a key psychological cost, and reason why they abstain from hard drug use prior to service,

> "*I'm cautious about certain things in terms of like, I don't want to die or be in any physical pain or anything so, um, and I also don't like anything that alters the way I can think so, I was just never into it*." –Hannah, AD Navy
> "*Noo I was too afraid of it."* –Lucy, AD Army

The social costs of drug abuse are also relevant in discouraging drug use. Although Riley did use prescription drugs prior to service, he mentions his brother as a prime reason for his aversion to hard or heavy drug use,

> "*Jackson* self-medicated, um, I mean I don't think there was much that he didn't self-medicate with. And then he went to rehab, cleaned himself up his junior year of high school, senior year he signed up for the Marine Corp but because he had missed that three months his junior year to go to rehab they told him like right before they were supposed to graduate like, 'you're not graduating. You missed three months last year'. Relapsed, suicide. And I think that's one of the number one reason's why I never went that route. I never went…I would love to go sit in the woods in a camping site and do shrooms, I think that sounds like a fantastic time. But I'm not going to." –Riley, AD Marines*

Similarly, Aaron describes his friends and his brother as the reasons why he didn't go down the road of hard drug use,

> "*It was a lot of fun growing up there and I'm definitely very fortunate to have friends that had like the same kind of mentality that me and my brother did of like, 'okay, let's not be stupid with drugs and alcohol in our lives', and um let's still try and have a lot of fun."* –Aaron, Navy Reserves

Despite the social and psychological/physical costs of hard drug use acting as a preventative measure against substance use for the majority of the respondents, five did try or use hard or prescription drugs; Riley, who tried prescription narcotics, Ray, who experimented with a variety of illicit drugs including possibly cocaine, meth, hallucinogenic mushrooms, and LSD, Emmy, who tried salvia once, Cameron, who experimented with prescription drugs, and Clara who used meth and abused prescription narcotics. Though Ray tried a variety of hard drugs, he didn't articulate that he was addicted to any of them, and that the primary motivation to use was the physical and social enjoyment brought about through experimentation,

> "*…so I think we found like some cocaine in a package that he [a friend] had left in our tree fort that we had up in the hills… …so he left some of that and my brother and I got it and we did it and we're just like, 'oh this is fun, let's see if we can do some more'. And that, between the ages*

> *of maybe 14 and 17 tried cocaine, tried maybe some meth, you know marijuana obviously, alcohol. I think we tried mushrooms and possibly acid, um, but then, that was pretty much it. Never shot up." –Ray, AD Army*

Emmy also tried an illicit substance prior to service. For her, it was the fear that accompanied her experimentation with salvia that led her to discontinue use. This physical cost of drug use is effective in discouraging continual use for Emmy, in the same way it discourages experimentation for many of the veterans that abstained from illicit or prescription drug use prior to service. A similar explanation is given by Riley for his experimentation with prescription narcotics, though he attributes the costs of *regular* drug abuse as his reason for never going beyond experimenting,

> "*I took Vicodin and Percocet a couple times—this is before the OxyContin explosion, which lead directly to the heroin explosion um, but it was like if you smoked pot at a party you're a burnout, but if you took a couple Percocet it was like an acceptable thing… …there was a group of guys that I was very tight with that continued down that path and then you know they went through taken 'em to chewin' 'em to snortin' 'em to smokin' 'em to injectin' 'em to heroin to their lives went to hell. And then I was part of the rest of us that were kind of like, 'you know what? This is where I draw the line.'"*—Riley, AD Marines

Cameron was the only male respondent who experimented with prescription drugs for the physical qualities specifically, but even that was combined with the social influence of drug use,

> "*I had tried—I had done some cocaine once or twice. Um didn't like it. I had taken mushrooms. Um, Adderall, I think I did that a couple of times 'cuz some kids around me were doing it and, like, it helped you stay focused on your homework or whatever. Um I never was like, fully engaged like, 'oh I have to be doing these drugs' or something, but I did kinda partake in those ones that I just mentioned occasionally… …Yeah I was never buying coke or shrooms really. Or like, just like if it was around I might check it out, but it was never like, more hardcore stuff, it wasn't something I went after and tried to do a lot."* –Cameron, AD Army

Clara is the only individual who seriously abused drugs prior to service. Unlike Riley and Ray's experimentation for the social and physical benefits of drug use, Clara's motivation is primarily driven by trying to get a rise out of her parents,

> "*My choices for doing things, albeit trivial and immature, they're not excuses. 'Oohhh I had a horrible upbringing so I'm gonna take drugs to piss my family off.' I wasn't traumatized, I wasn't upset 'cuz daddy left. No, I just wanted to piss them off. I mean, I'm not the normal person." –* Clara, Active Duty (AD) Navy

For Clara, the costs of drug use weren't enough to outweigh the benefit of drawing attention from her parents and also her boyfriend. Clara is the only case I observe of a respondent using hard drugs as a mechanism for responsiveness, and the only veteran that regularly used hard drugs prior to service.

Collectively, the majority of respondents avoid hard and prescription drugs prior to service, primarily due to the social, physical, and psychological costs. Though five did use prescription and/or illicit drugs, it appears to be mostly due to experimentation and social scenarios, rather than drug addiction.

Marijuana Use

For many of the respondents, marijuana use is a different story. The proposed benefits of marijuana use draws 10 of the interviewees to try it initially, but not all of them regularly used. Overall, it is the social benefits that led so many to try marijuana in the first place,

> "*Uh, I tried it a few times, um before military… … I tried it in college. I only went for a year, I don't really worry about it, uh but I made a friend who grew it in her closet [laughing], so whater you gonna do?*" –Wendy, AD Navy
> "*For me it wasn't something that I went out of my way like, I never bought pot it was just like if a friend was like hey let's go smoke pot. And um, usually---and that was all in high school too so, I –I didn't smoke in* college at all…" –Tristan, AD Navy

Similar to Wendy, Tristan, and Cameron, several other interviewees attributed their interest in marijuana to the influence of friends or significant others (social benefits).

In addition to the social benefits, Austin, Riley, and Wendy also mention the physical and/or psychological mechanisms of marijuana as their reasons for using it. Wendy explains that she did try marijuana multiple times, each time trying to, "*see if it would still act wonky"*, and also to calm herself after the death of her father. Austin and Riley explain the physical and psychological benefits they used the marijuana for,

> *"…I definitely smoked more than I drank. But I did have the opinion that I was only going to participate with things that were natural, that were out of the ground, right? If I happened to light this bush on fire and I'm pretty happy, hungry, sleep; cool.*" –Austin, AD Army
> "*Started doing drugs…messing around with like marijuana I recall when I was 12—11 or 12…. … going into a supermarket getting beer, my brother and I. Just lookin' for a way out, looking for some sort of reprieve."* –Riley, AD Marines
> Despite the mostly social reasons for using, seven of the 10 veterans that tried marijuana admit

that overall they weren't that captivated by the social or psychological benefits and didn't continue use for long. The reasons for this lack of continued use varies across the respondents, including just a lack of general interest, physical costs, social costs they observed from other family members, or due to the memories it would dredge up (psychological cost). For example,

> "*Well, the first time I [tried marijuana] I was 17-18, and it made me feel like I was on a tilt-a-whirl and rollercoaster at the same time, okay? … So I'm lying there with my foot hanging off and my hand above my head… and then my mom calls me in the living room [Laughing]… I went back in there, and she, she walked up and said, 'you're high aren't ya,' and I said, 'yeah', she said, 'how do you like it?', I said, 'I don't!'* –Wendy, AD Navy
> *"My brother was really into, like smoking weed every day, like that's all he did. So I think part of that just made me think, like, that's not something I should be doing, 'cuz he was like way off the rails."* –Cameron, AD Army
> *"Marijuana I didn't like. All my friends did marijuana, every time I'd go with them it was like they were all potheads, so we'd go and they'd play videogames and I'd sit and watch 'em… …but it just made me feel really self-conscious in my head and I couldn't deal with that because it brought me back to a place, being back stuck in the trailer and all this abuse and all this crazy shit so, didn't do that, didn't do marijuana more than like on and off for a year, more to experiment."* –Ray, AD Army
> In general, the respondents experiment with marijuana more than any other drug prior to service.

This experiment was prevalent mainly for the social and psychological benefits of marijuana use. For most, use remains experimental in this stage, as the social and psychological costs tend to interfere with continual use. In these ways, the costs of marijuana use seems to outweigh the overall potential benefits, at least enough to decrease or discontinue use for many respondents who experimented, and entirely for those who did not try it in the first place.

Alcohol use

Alcohol consumption is a little more random across the respondents. Like the other types of substances explored, the decision to consume alcohol (and at what rate) is largely determined by the relative costs and benefits associated with use. Overall, social benefits and costs of alcohol trump all other reasons for consumption. I notice several different types of social benefits at play, which I outline below.

First, the influence of family and friends are primary social motivators for many of the respondents, both as a cost and a benefit of alcohol. For those who chose to drink prior to service, it is often because they grew up in a home where alcohol use was normalized. When asked what influenced her to start drinking, Wendy responds,

> *"I was raised in a family where we would drink… they…we'd cook with it and they'd give me a small glass of wine bout that much [gestures], like literally a glass this big at the age of five. So, I've been drinking wine since I was my daughter's age. I think my mom even said she watered it down and gave it to me in my bottle, okay? But as time went on I did have glasses of wine, full glasses of wine with my parents, champagnes. Yeah, so it wasn't, like, ---the whole family drinks beer."* –Wendy, AD Navy.

Tristan also describes how his alcohol use was motivated by socializing with friends,

> "*Uh you know drank a little bit and then I—you know, being exposed to that I just kind of was like…it seemed like that's all anybody wanted to do…"*—Tristan, AD Navy

The second social benefit of alcohol I observe involves friends and socialization, but is instigated by accessibility, often due to college enrollment,

> *"...that's when the drinking started to pick up, because I was twenty but I was able to hang out at this bar even when I wasn't working, um, but it was more of a social thing for me… …like I was isolated in high school and then all of a sudden I had all these friends in college who were active and doing things it was so much fun."* –Riley, AD Marines
>
> "*Well I got to college and I was like alright well, we'll try this and then decide I really liked it and you know joined a fraternity and hung out with a lot of people who were you know heavy drinkers and so that's just sort of what happened…*" –Noah, AD & Reserves Officer
>
> *"And then in college, um, I would go to parties, uh, 'cuz that was kinda the thing to do. Was kinda poor man's entertainment… …Until probably my junior year I moved out, um, lived with a buddy, and then I would drink to get drunk. Um, at least once a week, probably, 'cuz I lived right down the street from the bar. It was too easy."* –Isaac, AD Navy Officer

Despite these social benefits that encourage alcohol consumption prior to service, social *costs* are also relevant in deterring use. In particular, families where alcoholism wreaked havoc were particularly influenced by this social cost,

> "*I think my alcohol thing… My dad plays a* huge *factor in it. But I think it's also my upbringing, because my parents didn't smoke, or my parent's didn't drink at all. My mom didn't, anyway. My dad, he would drink beers… …he'd come home, you know, we'd eat dinner or whatever, and he'd go back downstairs and dial into work, and he'd drink his beers down there. So I think that was something that kinda played into it. I wasn't exposed to any of that growing up, so I didn't think, 'okay, that's the norm, you know? That's what I'm expected to do.*'" –Carolyn, AD Army

While the social costs and benefits are important in understanding patterns of alcohol use prior to service, I also must point out that some individuals take advantage of the psychological benefits of alcohol use. This is most notable for two respondents, Riley and Ray,

> "*I don't know I was just feelin' lonely and I think that's the first time that I started drinking*." –Riley, AD Marines
>
> "*Went back to school, and still kind of dabbled in and out of, not really any hard drugs I think more of just alcohol to cope… …When I got a little older, you know maybe 14-17, I, I drank as much as I could, many black out nights, um, just like waking up the next day getting in my car like, how the hell did I get here? … … I kept doing it to kind of dismiss reality, to kind of get away from maybe dealing with issues or dealing with, where I lived…*" –Ray, AD Army

Generally, it appears that the social factors of alcohol consumption have the greatest influence on whether or not respondents chose to drink or not prior to service. While family and friends, as well as environment like college, could instigate rates of consumption, family also played a protective factor in discouraging use for those with a family history of alcohol addiction. It is also relevant to point out an interesting gender difference in benefits and costs of alcohol use. While the bulk of the sample

experienced some sort of trauma or turmoil in their past, none of the women discuss using alcohol as a way to cope with adverse life experiences prior to service. On the other hand, several of the men do use alcohol as a coping mechanism prior. In fact, for the women it appears that the distress they experienced acts as more of a preventative social factor to drinking, rather than instigator to alcohol as it does for the men prior to service.

Summary of Substance Use before Service

One of the core findings amongst the interviewees is that their general substance use prior to service seems to mimic the general civilian population. In other words, it doesn't appear that a history of substance use (a known "risky behavior", which has often been described as a selective factor into military service) is a precursor to joining the military, at least in the majority of cases I observed. Instead, it appears that it is whether or not the costs outweigh the benefits of use (or vice versa), and this varies from substance to substance. In fact, one male respondent (Aaron) labeled himself an "adrenaline junkie" yet abstained entirely from drugs and mostly from alcohol prior to service. Overall, substance use amongst the respondents is relatively low prior to service, with alcohol use being the most common, followed by marijuana and then illicit and prescription drugs. It appears that a variety of costs outweigh much of the potential benefits of substance use, though some benefits did prevail in specific circumstances (especially in social scenarios), and most notably with alcohol.

*Substance Use during Military Service*

Drug use (including illicit, prescription, and marijuana):

Based on the low rates of illicit, prescription, and marijuana use, and the similar rational behind those that did use any of the three, I've elected to combine all three types of drugs into one section in the "During Service" time period.

To begin, nearly every respondent mentions the economic cost of drug use—the military's "*zero tolerance*" policy--as a key reason to why they chose not to partake, or why they were careful about it if they did. While several emphasize that depending on the drug, the punishment may vary, the overarching perception is that testing positive on one of the random drug screenings will get you kicked out of the

service, landing you with a dishonorable or other-than-honorable discharge which revokes your VA benefits (including the GI Bill) and limits your opportunities of pursuing a career. For example,

> "*Okay, well drug use was definitely a no. It's a no everywhere. Um, if you get caught, you'll get kicked out automatically. "*–Hannah, AD Navy
> "*Well zero-tolerance for anything drug related. I mean we were the first organizations to really crack down on bath salts and spice. Um, you know it's—there's no room for interpretation. You [test positive] on a drug test, you are fucked. There's no like, slap on the wrist, there's no, 'well you made a mistake but you're generally a good Marine, we'll let it go', it's like zero fuckin' tolerance and they'll do random drug tests like where the entire battalion twelve-hundred Marines standin' in line waitin' to see some guy literally watch the pee into the cup and you sign it and initial and everything and they get tested."* –Riley, AD Marines

While Hannah initially stated that drug use would automatically get you kicked out, she changed her statement when asked if testing positive on a urinalysis would get you chaptered right away. She said,

> "*No, they would usually get like a 45-45 which just means like you're confined to the ship, you have extra—we had like, half a month's pay taken away and then you also have like extra duties so you'd be working long hours um yeah and then while they were doing all that paperwork then you would get kicked out so, um yeah that's not good."* –Hannah, AD Navy
> So, regardless of whether or not drug use would *actually* get you kicked out automatically, the perception was that it would, or it would after a brutal sweeping of punishments. Across the board, respondents mention positive urinalysis test (UA) would result in some serious punishment, yet the degree of that punishment would vary depending on when you served and what substance you actually tested positive for. According to Lucy,

> "*If you peed hot, pissed hot, before they really cracked down on it then you could like lose a rank and you're sentenced um, you're subject to UCMJ's so depending on what they do they're gonna knock you down a rank or two, then they're going to take your money so you don't get paid for like, anywhere from one month to three months I think. And um, then after you get off of work you work more, you, it's almost like hard labor I guess?... ... they don't get to do anything, no weekends, no holidays, nothing. Every single day and they don't get paid for it. Depending on, you know, why you pissed hot and why this other stuff, if it's your first offense, that kind of thing. But after they cracked down they were taking rank and chaptering people out like, weren't putting up with it anymore.*" –Lucy, AD Army

Another respondent, Emmy, describes a similar experience where drug use doesn't automatically mean you are kicked out, and she agreed it had to do with the substance being used,

> "*We get randomly drug tested, so if we get caught with it you go, like there were some, when I first got to Alaska there was a guy that like got caught smoking weed and then he tested positive and had to go back, like the next week and he still tested positive [chuckles] and so then they did it one more---like they gave him like three chances though. So I was really surprised. And I don't know if it's just 'cuz it's weed or like..."* –Emmy, AD Air Force

Many of the respondents highlighted the "testability" of substances on a UA or "duration" of drugs in the system as a major barrier to drug use for many, but a tool to take advantage of for those that did want to use. Cody observed individuals taking advantage of the loop-holes in the drug use policy and his personal experience with discouraging drug use among his co-workers. For him, it was an issue of not looking out for one-another and being able to adequately perform your job duties,

> "*I know in like 2010 or 11, I can't remember which one, uh, spice had first come out, and the Coast Guard didn't have a drug test for it, so I knew of some guys who smoked on duty, and I kind of confronted them about it, I was like, what the fuck man, like it's cool and all that you can't get popped for it, but what happens if we get called out at two in the morning and you're high as fuck. You're not gonna have my back. So, uh, eventually they came up with a way to test people and those people I think stopped if they were smart… …There were two guys I was stationed with in, uh, down South who uh, they got kicked out for smoking spice while they were in, so I think they definitely had a problem with it 'cuz people, uh, they were able to tell ahead of time, before the command found out, people tried to tell him like hey man, why are you throwing your career, like career over this.."* –Cody, AD (and Reserves) Coast Guard

For Cody it was the social and economic costs that made him frustrated with drug use in the military. A similar observation of drug use is reported by Isaac and Austin,

> "*When I joined apparently there was a big um, a lot of people were using spice, do you know what that is? 'Cuz it couldn't be tested for at the time. And so, that was pretty rampant, um, so they just started all this training of what spice can do to you, and not to do it, and while they're trying to figure out ways to test for it, so just knock it off. This was in 2009. I'd say they kept the push up until 2011. I think that's when they started being able to test for it. Um, otherwise yeah, no drugs*" –Isaac, AD Navy Officer
>
> "*We never smoked during leave, when we were going home for Christmas. Because we* knew *beyond a shadow of a doubt the day we got back that a 'random drug test' was going to happen. We were very smart about how we did it. Uh, and that went on for probably close to three or four years and nobody ever knew about it."* –Austin, AD Army

For those who did use hard drugs during service, the threat of being kicked out if caught was not off the radar. Lucy notes that drugs that take longer to get out of the system, like marijuana, re less likely to be used because the chance of being caught is much higher than those, say, sleeping pills, that could be eradicated from the system with a shorter amount of time and ample amounts of water. When asked if she used marijuana during her service, Lucy responded,

> "*Ohhh no no no. 'Cuz that comes up on a piss test! Impossible to get rid of! People who risk it in the first maybe week of their leave, then they can drink water and they'll drink like capfuls of bleach and stuff to try and get that out of the system, which I don't even think is a thing? But hey, gonna do it. So yeah, people do the craziest stuff and I was like, maybe just don't smoke pot, like, is it worth it?"* –Lucy, AD Army

It appears that the harshness of the penalty for testing positive or being caught with drugs changes greatly depending on when you served in the military, where you were serving (as the women highlighted the differences during deployment), and potentially the branch you served in. The military appears to be aware of their problem with drugs that are less testable and the alternatives to those that can be identified on a UA. This could explain the variance in policy across time. Lucy describes how rumors were spread about the physical repercussions of using "spice" (synthetic marijuana) in order to deter servicemembers from experimenting,

> "*Spice was really common. But then they found out that it could cause, okay we, they spread a rumor that it could cause seizures. I don't know that that's true, I do know a guy that was smoking spice when he seized, but it turned out he had an epilepsy he was lying about… …so they were saying that like it ended up being toxic 'cuz it's not regulated and so, but a lot of people smoke spice. I know a lot of people that couldn't get away with pot, spice was their preferred drug*." –Lucy, AD Army

Cameron, one of the three respondents who did use drugs regularly, describes another important component related to what year you were serving in the military; the needs of the military,

> "*Some dudes smoked weed, and other guys, you know, did methamphetamines sometimes, like, it wasn't like random like everyone's addicted to drugs, but as we're young, people wanna do shit. And they do it. Um, the culture I was in—it wasn't like, 'don't do this'. Well, it was like 'don't do this", but because the war was going on, the repercussions were a lot less than they would be, like, now with all the reduction in forces… …Another guy pissed—pissed hot, or you know, failed a urinalysis for methamphetamine or something. Uh, nothing happened, -- or, they got in trouble or whatever, they probably would've been kicked out of today's Army, 'Get the hell out', you know what I mean? But back then, if you were warm bodied and could carry a weapon: 'We're keeping you in, off you go." Um, so I mean people kinda, yeah, you weren't supposed to do it, you'd get piss tested at any time, that's how it goes, but uh, with respect to the drugs, they still happened."* –Cameron, AD Army

Cameron, like Lucy, describes the conflicting action vs. policy seen in the military, and also provides the idea that age is a large instigator of wanting to use drugs (that typical young experimentation phase that many referenced prior to serving).

Cameron, Lucy, Austin, and Farrah were the only individuals who tried or regularly used drugs during service. Both Austin and Cameron indicate that the psychological benefits of drug use are what encouraged them to use. For Cameron, it was bureaucratic idiosyncrasies that left him isolated when he returned from deployment,

> "*…when I came back, a lot of the guys got out. So a lot of the guys I was with and went through everything with were gone. And I didn't want to make new friends, you know, I didn't want to talk*

> *to anybody. So I was kind of alone a lot. I hung out with the one dude that I did—you know, the stripper dude, we were smoking weed, drinking, and doing ecstasy or whatever."* –Cameron, AD Army

Even Cody, who didn't use drugs during his service but he caught other people using, attributes their use to the psychological benefits,

> *"…They were kind of going through some shit, so I can kind of understand it, uh, but at the same time I'd tell em like, deal with it in a different way, like not while we're on duty at least*." –Cody, AD (and Reserves) Coast Guard

Austin's hard drug use is more experimental, but he explains that the effects of tripping on hallucinogenic mushrooms changed his outlook and personality for the better, which I would still consider a psychological benefit. For him, it was marijuana in particular that helped ease the stress of military service, and he took advantage of the military testing policies in order to help him continue this use,

> "*So drugs, drugs were a big deal. That didn't stop me [laughs]. You know especially, you know, pot for me was one of those things that allowed me to keep control, but it definitely relaxed me, and if I had any anxiety or anything like that, it definitely, it really does eradicate that very quickly. And so there were moments uh, in the Army where there was a group of us—around 6 or 7 of us—but again, we'd go back to systems. Did we wanna get caught? Absolutely not, because that was a deal breaker. But there was a gap. Because the military has an SOP on drug testing that says, 'You're going to have one a month and they're going to be spaced out X amount of days'. Right, you can't have a drug test right back to back, we knew that. It's on a sliding scale somewhere. WE knew the guy that was doing the drug test. So we said, 'how much notice do you typically have?'. 'Uh, we get about a week before we know something is coming down.' We said okay. So if we have a drug test on the first of the month and we know it's probably not going to come until the next month, the weekend after that test we would all go out and we'd buy a bunch and we would—we'd smoke."* –Austin, AD Army

Marijuana was used by one female interviewee—Farrah, the Army reservist. While she did experiment with marijuana (for social reasons once or twice) while still in the military, she was mindful of the drug testing policy, similar to Lucy. Though, she chose to risk the precarious timeline of drugs-in-the-system that Lucy describes. She used marijuana again while serving, but it was after she was no longer in touch with her unit. For all intents and purposes at this point in time, she was out of the military, and so I include her description of the experience in the "after service" section.

But it isn't just the economic cost of being caught that deter many of the respondents from using marijuana or hard drugs during service. The social costs are also important, as Farrah describes,

> "*Yes, well you have to think 'cuz Washington State marijuana is legal for um, recreational use and medical use. When you're in the military, say you live on post, okay? So that's federal property. It's still not legal on federal land. If you live off post, if your spouse were to smoke it, that wouldn't negatively affect you. But I probably wouldn't want people in the military knowing*

> *if my spouse smoked or anything like that. Because the military, it's like a big high school. Everybody talks… …You don't want people to know those things 'cuz if one person knows, 30 or 100 will know."* –Farrah, Army Reserves

Several of the respondents describe the military as a "high school", which could arguably be applied to the experimentation with substances and the degree of gossip present.

This rules governing drug use also seem to change while deployed, which is the perfect example to emphasize how the choice to use drugs rests heavily on the economic costs. For example, Lucy was deployed to Afghanistan during her service, and explains that drugs aren't allowed, but that the UA tests are non-existent so you can't really get caught either, or at least not in the same way as you would when not on deployment. On deployment, the opportunities to be caught are dramatically decreased, so drug use was more normalized. On the other hand, being caught for alcohol on deployment is a huge problem, the opposite of the attitude toward alcohol use when not deployed. She explains,

> "*Drugs are not tolerated there. At all. Even though they're…they're hard to get but they're easy to get depending on where you're at, um. I know a lot of people get their hands on pot and because they don't drug test in Afghanistan you can do whatever you want! Um, uhh there's no alcohol allowed so, uh. Drugs and alcohol technically aren't allowed so like, for some reason drugs are more hush hush so your NCO's are less likely to find out that you're doing it. Or they're doing it with you so it's not a big deal…usually yeah, 'cuz I mean, new soldiers don't know where to get drugs when they go deploy, it's older soldiers that teach us how to be that way. No you really couldn't [get caught] unless someone else caught you and narc'd you out… … but the drinking was a big huge no no and we…I know a guy who got caught with some bottles in his room and he was a staff sergeant he got knocked down to a specialist like. They weren't playing like, with the alcohol. That's absolutely not tolerated. Neither is the drugs technically but…"* – Lucy, AD Army

Degrees of hard drug, prescription, and marijuana use are low during service. The majority of respondents reference the military's zero-tolerance policy for drug use as a very real consequence, which leads to serious economic costs. Only four respondents admit to using drugs while serving, and all mention having to work-around the testing policies. This work-around involved a variety of tactics, including type of drug to use, knowledge of the duration of the drug in one's system, and reliability on others to know when testing might take place. It is hard to gauge how prevalent drug use is during service for the general population from these interviews. Many of those who did not use drugs express that drug use isn't common because of the severe costs of use. On the other hand, those who did experiment with drugs while serving claim that everyone was doing it. Regardless, the economic and social costs of drug

use during service clearly outweigh the benefits for most of the sample, though for those who did use, the primary benefit of using during service appears to be the social or psychological benefits.

Alcohol Use

Rates of alcohol use during service vary greatly from person to person, similar to patterns prior to service. Respondents abstained from alcohol, drank casually, and/or binge drank regularly during their time in the military. Despite the varied rates of use in my sample, nearly all respondents describe that alcohol is a popular and prevailing piece of military service, and at times explicitly mention the "culture" of drinking in the military. For example,

> "*Oh it was, I mean it was nonstop, talk about let's go get shitty, let's go get shitfaced, get wasted, um, there was very little discussion or anything, it was just part of the culture, that's what it is. I mean, I even, uh, completely illegal, but I mean I even had like a, a bottle of scotch on the ship… …But um, yeah it was completely accepted. Even like one of my best buddies in the Navy, he was Mormon, so of course, he didn't drink coffee or alcohol which, what kind of sailor is that? Um, but he didn't—just anybody—he accepted it as part of the culture."* –Isaac, AD Navy Officer
>
> *"...It was really weird 'cuz it was really strict and everybody knew that you could get in trouble but then on like an unspoken rule it was a rule where like you should get as drunk as possible when like it was seen as a cool thing to be able to drink a lot and stuff so in terms of like culture with it, not like the rules but like the culture within the military*" –Hannah, AD Navy
>
> "*…it was kind of that expectation, everyone's young and drinking and that's just what people do. I don't know if I had really enough forebrain at the time to pick up that it was excessive. Well, by the definition of five drinks at a drink is binge drinking, it was all binge drinking, yeah*." –Laura, AD Navy

The key observation is that the benefits of alcohol use greatly outweigh the costs, and the costs are much lower for alcohol than they are for drugs. The typical reasons for increased alcohol use during service revolve around social benefits of drinking. For example,

> *"I mean, there was more alcohol everywhere and I think there was more pressure to drink, and so you would have to be overt, like I am the DD, or like, if my husband who at the time didn't drink was there, I would have a couple drinks with him. But it was like the beer pong parties and the keg stands and things like that, there was much more pressure to, but I had to basically be like no, I don't feel like it tonight."* –Noelle, AD Air Force Officer
>
> "*For fun. Mostly. Um, and plus I'm not --I don't have a hard time talking to people but then if you put me in the club setting I suddenly become socially awkward… …I'm like, uhh I don't know what to do so you go grab a drink so you don't look like an idiot just standing there and doing nothing. … I was really socially inept and so, started drinking, I was nervous!"* –Lucy, AD Army

In addition to the social benefits of alcohol, the psychological benefits are also highlighted by several of the respondents,

> "*Yeah, everyone drinks. I think just 'cuz it's so stressful…and it's like the only one that they can really use for, like, it's not like they're gonna go to drugs and stuff, so, yeah drinking is very*

> *popular I would say. …In the dorms in Alaska I drank quite a bit 'cuz like, that was the time when I was like coping with my dad, and then I kind of stopped a little bit while I was up there and then in New Mexico when I was there I drank quite a bit… … [because I was] stressed out."* –Emmy, AD Air Force
>
> "*…Um I think I was using it for stress reduction or whatever as a coping mechanism probably, you know especially on deployments and even sometimes when I was at um—at home you know or I'd go out every once in a while, but yeah I would probably drink more than I would say was healthy but yeah—it was definitely to—just kind of decompress and hang out with people that were all, we were all stressed out so everybody was drinking, you know?"* –Tristan, AD Navy
>
> "*…that's when drinkin' started getting—I didn't realize that I was sufferin' from PTSD at the time I mean, I was like drinkin' a bottle of whiskey daily, every other day. Um, my personal relationships were suffering and I didn't realize it."* –Riley, AD Marines

Despite these benefits of alcohol consumption, a lot of the respondents in my sample drank only casually, or not at all. This indicates that several costs are at play in the rate of alcohol used during service as well. These deterrents of alcohol range from physical costs, such as not enjoying the feeling of being drunk, economic costs like not having the time for it or the potential punishments for getting in trouble (i.e. a DUI), and social costs, like trying to be a positive mentor for other individuals. As Ray, who was a chaplain's assistant in the Army, explains,

> "*I never did anything, I pretty much stopped everything. Wasn't at the point where I needed to drink to get blackout drunk anymore. Um, tried to be a good example and I think after the discipline I learned in basic training and all that stuff and realizing the impact of what the human nature of being a chaplain's assistant is just someone to listen and be real with, someone that can actually do and be to people. I realized you know, this is something I need to kind of step into this role, try to set a good example, um, try to take young guys under my wing…"* –Ray, AD Army

The only other reason for abstention of alcohol rests on safety concerns. Several female respondents mention that drinking levels remained under control for them due to a heightened sense of vulnerability while under the influence and fear of the possibility of sexual assault. This was not the case for all females in the sample, but *all* describe that sexual harassment was a regular occurrence in the military, indicating one serious cost to evaluate. Lucy sums the experience up perfectly,

> "*So the rules are different for women just because, um, like everybody talks in the military about this brotherhood like you have this like you know, love for your brothers next to you and to some extent that's true, especially for me, like I loved the people I served with, but if you're not, you know, a man some rules don't apply to you, especially if you're not a white man. Um, so whereas you know you're supposed to be taking care of one another, male soldiers are actually sometimes more predatory towards the women so instead of taking care of us, their goal is to like I don't know, get in your pants or something? So it's almost like they're hunting you really, it's really creepy, it's extremely predatory, they're trying to get you drunk and stuff and so all this stuff they taught you in boot camp about taking care of each other and you know like, you're here for the guy next to you, like you're not really here for the flag or for freedom you're here for the guy next to you, and then you, you leave boot camp and you're in a real unit and you find out that that's*

> *not true for you because you're a woman.. So and like, you just have to be more careful. Like where I'm sure a guy could go into a room full of guys and be fine, um, I wouldn't be able to do that. Like I was actually in a situation where I showed up to a party where I thought other women were going to be and I turned out to be the only one and I had to go home because they just were saying these lewd and disgusting comments. And they outrank me and stuff so I can't talk back. They'd like, you know, fuck me up. So, and it was like a really weird and unsafe feeling and especially with people that I'm supposed to be working with."* –Lucy, AD Army

While none of the women in my sample, thankfully, experienced military sexual trauma themselves, many of them told stories similar to Lucy's about friends, coworkers, or just general statistics about women (and men) who had experienced MST. While this threat doesn't seem to eliminate the choice to drink entirely, it does lead several of the women who did drink to be thoughtful about their alcohol intake. Much unlike the women in the sample, none of the men mention a fear of sexual assault for themselves as a reason to avoid or limit alcohol intake. However, two men do discuss the impact of sexual assault on their drinking habits. For Cody, it was learning of his wife's sexual assault that drove him to heavy drinking as a coping benefit. This went on until he recognized the economic costs of his alcohol abuse, which led him to slow down,

> "*I went through some kind of personal life stuff while I was in Louisiana, and after that period for the next two or three months I got, I went through a lot of alcohol... …my wife was going to school here and uh, got raped and she called me crying in the middle of the night… …I would just drink and drink and drink when I was off and, and it was all by myself too, I wasn't even socially drinking, just drinking by myself to just get drunk, just to deal with what I was dealing with up here, uh, in my head… …It was pretty much I was late to work once or twice and I was like this is not gonna end well for me. I'd seen too many careers ended because of it… …So like after that I'd still like drink with everyone else, and had beer and it was still high amounts of drinking but not nearly to that capacity."* –Cody, AD (and Reserves), Coast Guard

For Isaac, it was learning of a fellow officer's sexual assault on a young 19-year-old enlisted woman that caused him to decrease his use of alcohol,

> *"...long story short he ended up going back to the ship that night, and sexually assaulted an enlisted girl, um, 19 years old. Ruined her career, ruined his career, he ended up in jail… …basically the captain's boss, the commodore, came on board and, and she did a really great job of telling us, you know, obviously this is what happens when you over use alcohol, and there's you don't have folks kind of keeping others in line, um, but it's not your guys' fault, you know, he's a predator, which kinda eased everyone's fears…There's this poor girl that um, her whole life got turned upside down. I definitely saw other people that overused quite a bit. Um, I Just kinda distanced myself from them, especially after that incident, 'cuz, I almost felt culpable, 'cuz I was like, well I was sober, I mean, I probably should've stepped in a little more um, and uh, I've always felt guilty about it, even though, you know, obviously it was my fault. Um, but it's, it's always been in the back of my mind, and so from that point forward I never really abused alcohol*." –Isaac, AD Navy Officer

In general, alcohol consumption is common during service, though not as common in my sample of respondents. The legality of alcohol, along with the social and psychological benefits, make it much more desirable than other types of substances. Despite these benefits, many individuals decide not to drink or drink heavily due to a variety of costs they deem outrank the proposed benefits. These costs include economic, social, personal preference, and psychological. Military Sexual Trauma also plays a role in the rates of consumption for both men and women servicemembers.

Summary of Substance Use during Service

Substance use *during* military service is a bit different than before service. One of the core findings is that the costs of using drugs, both illicit, prescription and marijuana, greatly outweigh the benefits, in *most* scenarios for these respondents, though some individuals did still use while serving. If drugs are used, the drug of choice depends on testability, durability, and availability. On the contrary, the benefits of alcohol (particularly social and psychological) seem to outweigh the costs for most, although with some caveats. The majority of respondents describe or elude to a "culture" of alcohol and drinking within the military. This culture encourages drinking behavior for many, but not for all, as many of the individuals in my sample abstain or only use alcohol at casual rates. The relevant costs of alcohol consumption in these scenarios vary, from economic and physical to social, and psychological. Regardless of gender, Military Sexual Trauma influences rates of consumption for both men and women in the service.

*Substance Use after Exiting the Military*

Illicit & Prescription Drug Use

The trends of illicit and prescription drug use following military service echo much of the experiences prior to service, though some differences do exist. Only one respondent in my sample has used or tried illicit drugs since exiting the service. The reasons are based on maturity and aging for those that did experiment with drugs during or prior to service, and for those that didn't, the reasons are the same as before serving— a general lack of interest and fear of the physical and psychological costs. Lucy, who used drugs during her service explains her changed opinion on them,

> "*Seattle's really free with drugs, like, I was at the pride parade and it was like 'you wanna do 'shrooms? I'm like, 'no thanks!'. Like I'm just gonna stand here sober [laughs]. And I don't mind being that person that's the only one not doing it now, I think that's what really I got out of it, is that I'm mature enough where everybody around me could be doing it and I'm like nah, no thanks!"* –Lucy, AD Army

For Ray, who used hard drugs prior to service, the physical, economic, and social costs deter him from using now. In particular, fear of other people finding out of his use or potentially losing his job at the homeless shelter, along with the health consequences of abuse, lead him to continue to avoid drug use today.

To reiterate, hard drug use after service was not something worth even a conversation for many of the respondents. When I asked them their reasons for not using, it reflected the same reasons for not using prior to service, where the costs of using outweigh the proposed benefits. For Isaac, the same physical and social costs of drug use and addiction that deterred him from using before service apply the same way now,

> "*But then there's stupid, like why are people doing bath salts, or why are people the crazy shit they do. Um, that stuff I don't, I don't understand and never will. I've got sympathy for people that get hooked on opiates, simply 'cuz I saw my brother do it, um, and it was just, uh, it was just a monster for him, that he couldn't beat… …But totally terrified of drugs because he couldn't beat it."* –Isaac, AD Navy Officer

This fear of addiction was reiterated by Aaron,

> "*…I haven't done anything that's like hard, um psychedelics or anything along those lines. It's just one of those things where I happened to [have a certain] personality and if it does something amazing for me then I'll wanna do it more and I have too much that I love and enjoy to bother going down that road."* –Aaron, Activated Navy Reservist

Interestingly, several of the veterans allude to the idea that the military (or the VA in this case) overmedicates them with prescription medication, yet frowns heavily on marijuana use for its medicinal properties. Both Riley and Cameron noted these contradictions. Cameron discusses this contradiction below,

> "*I think it's funny that opiates are legal as far as medical prescriptions and things like that, easy to get for the most part. Um, they gave me 80 fucking pills after my surgery, I only need them for two days…There you go. So it's like those are okay, and they'll willingly help you get addicted to those, but don't you fucking smoke weed!"* –Cameron, AD Army

For Riley, just mentioning the potential healing benefits of CBDs found in marijuana to a VA psychiatrist had him meeting regularly with substance abuse counselors, despite not ever having issues or even having tried hard or illicit drugs *or* marijuana. Austin is the only veteran that uses drugs now, and he used drugs

during service as well. His reasoning has stayed the same, using hallucinogenic mushrooms for its psychological benefits. All other veterans avoided hard drug and prescription misuse, indicating that the costs, even for just experimenting, greatly outweigh the benefits.

Marijuana Use

Marijuana use after service is irregular across the veterans. Regardless, it is much more prevalent than illicit or prescription drug use. The leading benefit of using marijuana rests on the psychological and physical benefits, both for coping and for pain relief. For Farrah, the Reserves Army Veteran, marijuana use became more acceptable for her once she had stopped communication with her unit, prior to being chaptered out. While Farrah did try marijuana while still in touch with her unit at times, I include her insights on this one particular occurrence here, rather than in the "during" section, as she was, for all intents and purposes, out of the service when *this* experience took place. She explains,

> "*Once I wasn't communicating with my unit, um, I was like self-medicating myself… … I was almost self-medicating myself for my mental illness, um, 'cuz I was pretty depressed and you know, it helped me shut off my brain. And I have a lot, like, a broken record of compulsive thoughts in my head when I'm not medicated. And it made- and the only way I could explain it back then, it made me feel less smart… …And so marijuana, I explained, that it helped me feel stupid and I turned off my thoughts. I wasn't completely gone it just like helped bring me down to a normal level that I felt like…maybe other people experience? …Now that I'm actually medicated there's a huge difference, you know. So, I get why I was doing it, I just still at that time did not know."* –Farrah, Army Reserves

Wendy describes a similar occurrence of experimenting with marijuana for the physical and psychological benefits associated with it,

> "*…Here recently I didn't smoke it but I tried an edible. Yes. Um, I tried it because I have chronic pain. Um, it helped with the pain. I did fine while I was on it because it wasn't, it wasn't in smoked I guess. Um, yeah it wasn't fully the same um, now when I was coming back down off of it my anxiety hit. That's when I started having issues [laughs]."* –Wendy, AD Navy

For those who regularly use marijuana after service, it again rests on the physical and psychological benefits. As Cameron and Austin explain,

> *"…I find that weed does relax me. Um, it helps escape a little bit. So I've probably become a little more—probably the same with weed, I guess. I probably haven't changed my opinion on it. I smoke more now than I did before., but you know, I don't smoke before work or when I drive and shit like that."* –Cameron, AD Army
>
> *"Um, it's to relax, it's to unwind, it's to get perspective on things, and it's just, I like that feeling a lot more. So when people would rather come home and drink a six-pack and then go to bed, I'll pass on that. I'd rather, I'd rather smoke… …I know a lot of veterans that smoke weed, too."* –Austin, AD Army

Even if they don't use marijuana themselves, several veterans point to these benefits as the reason other veterans do. For example,

> *"Drug wise, again, I'm not big into that but I don't really mind if other people do it 'cuz I mean, I know a lot of, I have a lot of friends who, you know, smoke recreationally or medicinally for PTSD purposes or whatever else."* –Noah, AD Army

For those who were opposed to using marijuana, the reasons are largely based on two costs—economic and physical/psychological, similar to the reasons prior to service. Despite the psychological and physical benefits that marijuana produced for Wendy, she still chooses not to use it regularly, due to the economic costs. She explains,

> "*Like no, as much as it helps I'd have to be on it 24/7 like this and I can't do that, I can't afford that [laughs]. ...I was thinking about looking into that because you can buy them over in Sequim in mint form. But they're $30 a tin for 30 of them, so I'm like, woo! That $30 can go toward groceries!"* –Wendy, AD Navy

Noelle describes a physical aversion to marijuana and emphasizes that the economic costs of time and money are major deterrents as well,

> "*No, I just, I don't have time for it, um, I went to a Dave Matthews Band concert once and I think it might have made me sick with all the contact high that I got, so I was just like, I really have no desire. And it's expensive and I'm a broke graduate student. I can spend my money on yarn, or the brand new bike I just bought."* –Noelle, AD Air Force, officer

For Farrah, once her tolerance for marijuana increased, it wasn't worth the effort to combat her mental illness (psychological/physical cost). This led to her realization that she should go back on her prescribed medication,

> "*Nope I still don't use it now, nope. No, no that was, um, maybe a couple of months. And then I decided after a while I felt like um, I was having to smoke more my tolerance was much higher, um, and I felt like it wasn't helping as much as it had previously. And since that was the using I was using it, I wasn't—like, if you enjoy as a side effect, for me that's a side effect or a bonus. Like okay, so you get to relax, and that's enjoyable, great. For me, I had a different purpose so once that purpose was not being filled any longer, I knew I had to get back on my medication."* – Farrah, Army Reserves

Several of the veterans mention the legality of marijuana in Washington State. This is an influence for trying marijuana for some of the participants, and more of an afterthought for others. Tristan describes how the legality encouraged him and a friend to experiment with marijuana after exiting the military,

> "*I've smoked pot once after I got out but that's just 'cuz we're in Washington and uh, my friend that got out too was just like, 'let's smoke pot one time.', and I took like one tiny little hit and then—then barely felt a high and that was you know, it was just to do it."* –Tristan, AD Navy

On the other hand, the legality of marijuana in Washington wasn't enough to completely sway some of the other veterans, who attribute other costs of the drug as the reason for their abstention. As Lucy and Isaac describe the physical and social costs,

> "*Yeah, still allergic, but you know what? I don't even have like the drive to be like maybe I should try it one more time. I mean, it's legal here and stuff, but I just…ugh. I mean it's not as bad as San Francisco but it's still…it's starting to get like everywhere in Seattle someone's smoking pot and like, I don't think badly about anybody that does it but I'm like crap, that smells terrible!"* – Lucy, AD Army
>
> *"I think weed for me, in the past I had a mental barrier to it 'cuz it was illegal. 'Cuz I'm like, the rule follower, I'm not gonna do it. Um, but now, whatever. It's legal, I don't care. No never [have I tried it]. Never, um, I'm curious, but I think my wife keeps me from even trying it. She probably thinks I'll like it too much."* –Isaac, AD Navy Officer

Laura has a similar mindset, mentioning the legal state of marijuana, but still the physical costs,

> "*I do think there's also this interesting you know, it's legal in Washington, um, but still it's illegal federally you know. I have, having had that clearance for me I think other people maybe not as much as an issue but even if it was it's still smoking…which is bad for you. Yeah and I mean there's a lot of research that shows like the cannabinoids can be really helpful, um, but the VA is still kind of waffling on whether or not they'll accept that." –Laura, AD Navy*

Comprehensively, marijuana use after service varies greatly from person to person. When marijuana is experimented with, it is often for the potential physical or psychological benefits or just because it is legal in Washington. For those who did regularly use, smoking marijuana to relax or unwind (psychological benefits) seems to be the key motivator. Veterans who opted not to use beyond experimentation, or at all, view the costs, such as social, physical, and economic, as more substantial than the touted benefits.

Alcohol Use

Across all of the veterans sampled, alcohol use following service is common, but the amount consumed at one time seems to have dramatically decreased. Casual drinking trumps binge drinking for the bulk of the sample. Several benefits of alcohol use are at cause for why it is consumed regularly after service, primarily the physical (enjoying the taste), psychological (stress relief or to induce relaxation), and social (bonding with co-workers and friends). For example, Clara, who teaches 5$^{th}$ grade, emphasizes the social benefits of alcohol after exiting the military,

> "*Um, I blame the teachers at the school. Yes, I did actually start drinking again. The staff at the school have what we call "French Club" because we can't send emails about 'hey, let's go to the bar'. So we say let's go to French Club. That sounds official.*" –Clara, AD Navy

Clara's example of social drinking is reinforced by Noah's,

> "*I end up being a stay-at-home parent most of the time. Um, you know I have, so I sing in a choir, a community choir here and so I end up becoming good friends with um, a lot of the other folks in the choice and so like we'll go out and you know like that. And then you know other like, student veterans as well, like there's a handful of folks like, I like to hang out with and um, you know we'll go out for drinks or, yeah, we, we drink a lot. Well I mean, not a lot, but like that's what we do a lot of the time, is going and getting drinks."* –Noah, AD (and Reserves) Navy, Officer

On the other hand, several other veterans use alcohol as a source of relaxation after a stressful day,

> "*I don't know if this is any more or less than when I was in the military, but if it's like a really crappy day I'm gonna go home and drink a beer, you know?"* –Noelle, AD Air Force, officer
> "*Yeah it's a, you know, just kinda nice to relax and have one or two drinks."* –Lucy, AD Army

For many of the veterans who did not drink prior to service, alcohol use has increased now after exiting the military. Two explanations are given for why rates of alcohol consumption increase from the levels *before* service; age, and learned behaviors during military service. Potentially, now that these respondents are no longer in a more heightened state of stress that is present during service, refraining from drinking in order to retain control or cope with anxiety is no longer as much of a primary cost of alcohol use. For example,

> "*Yeah my drinking now is up to like a good healthy like, maybe like a couple beers a week, pretty spread out, you know. Yeah I don't==I was worried a little bit while I was in for about binge drinking, not alcoholism, but um definitely probably binge drinking while I was out on deployment you know, but now absolutely I feel I got a handle on the stress levels and I'm not deploying anymore and so yeah—my drinking has gone down."* –Tristan

The stressful environment is replaced by 'maturity' and habits learned during service for those who continue to drink. When asked if she drinks now after serving, Emmy responds that she does every once in a while. When asked if this is more or less than she drank while serving, Emmy explains,

> "*Less, way less, probably less 'cuz I had just turned 21"* –Emmy, AD Air Force.

Lucy and Cameron clarify that their alcohol use now is determined heavily by her military service, and also by her age. For Lucy, it is a social behavior that she learned in the military, whereas for Cameron it is more of a coping mechanism for the stress he endured during service,

> "*I'm glad now that I'm older I'm like, you really don't have to drink a whole bottle a night, you can just have two and stop! I would say that like, if I hadn't joined the military, I don't think I would drink. I think that drinking is something I do because I learned to like it in the military. And I do know that like, you know if I wanna relax that's what you do, you grab a beer and grab a drink, but before I wouldn't've done that, you know? I probably would've just read a book or something. I'd relax with something different, but now you know I'm like, yeahhhh I'll just grab a glass of wine." –Lucy, AD Army*

> "*I was medically retired in 2008 for Post-Traumatic Stress Disorder and Traumatic Brain Injury. Uh, I had some concussions and head trauma when I was overseas, and obviously some mental health stuff with PTSD, so I came home from the war from '06. I was getting into a lot of fights. I would have really bad mood swings, irritability, you know crying at work and just like couldn't control any of my emotions. There probably was more drinking and things like that… …Um I don't drink much. Like even now, I had two drinks with a buddy from the Marine Corps, buddy of mine, and after I got up from the bar I was like, 'oh'. Like the bubbles or whatever they say gets to you. I think I felt like that. So I feel like I'm getting old in that regard… …Drinking is cool or whatever but I just don't care for it as much as I used to. Like I said, it makes me feel shitty. I don't want to have a huge beer gut and become some slob like that."* –Cameron, AD Army

The aspect of age sparking alcohol use while serving is discussed by Lucy when she rationalizes why she thought drinking was so excessive while she was serving in Germany also,

> "*I think in Germany especially its popular because we can't drink at home at our age? So, we don't have to wait 'til we're 21, we can go out to clubs now, in fact like everybody going clubbing is already our age so. Um, and then you have this new found freedom. Like you didn't have it before but you have it now. Like you're not in your parent's home, nobody's watching you, nobody's making sure that you're in at night, nobody's texting you to see if you got home. You don't have any responsibility really because a cab's going to take you home or you can get on the train home*." –Lucy, AD Army

Several other veterans describe the lack of responsibility felt in the service. This includes Hannah, who was stationed in Guam during her service,

> "*There's like a huge—there's a lot of bars—there's like a night life actually in Guam, and when most people are there they had no, I mean everybody's housing was paid for and food was paid for and all this stuff so nobody, everybody's paychecks just went to like having fun."* –Lucy, AD Navy

Lucy and Hannah's explanations shine light on the idea that the lack of responsibility in the military, in terms of bills, having to secure housing, etc. encourages drinking, similar to how drinking levels rise for new college students. Therefore, it's not hard to assume that the sudden responsibility thrust onto you after *exiting* the service could lead you to prioritize spending money on alcohol at a much lower level than say, housing or groceries. Lucy's description of her transition out of the military reinforces this idea,

> "*I was unprepared, I think that's what made it really hard, like they give you classes and stuff but you're never, not really prepared, and you're not prepared to go out and get a job. I didn't know how to write a resume. And I didn't even know what jobs I was qualified for… …I didn't know where to job hunt, I didn't know how to sign up for my healthcare. I missed my dental period because nobody had told me really that you're supposed to do it right away! I didn't know where the VA Hospital was, I didn't know how to buy a car, I didn't know how to do any of that stuff and I was so unprepared. I was unprepared 'cuz like somebody else had been paying for me to live somewhere and feeding me and stuff… …And I didn't even know how to apply to school, I didn't know how the GI Bill worked, I didn't know how to fill out my forms, I just didn't know anything and…I just was like wellllll, I'm gonna have to figure this out but that was really hard 'cuz I'm like, who do I call?!"* –Lucy, AD Army

For those who did consume ample amounts during service, the social costs of drinking seem to be a primary reason for their lowered use of alcohol now, particularly because of the social, economic, or physical costs. Clara, who drank heavily during her time in the Navy explains how her son has influenced her drinking habits today,

> "*I quit drinking because of my son. I changed my choices. The neighbor and I were hanging out. It was summer time. Between Jessie and I we put down three quarters of a fifth of tequila, half a fifth of vodka, and a case of beer. Everyone else threw up that night. I went home and passed out. The problem was, by three in the morning, my son wanted to go to bed and the problem is I couldn't walk three houses down to tuck him in bed. And he fell asleep in a lawn chair in Jessie's front yard by the fire because he was getting cold. I woke up the next morning and realized my priorities were a little backwards and I quit drinking."* –Clara, AD Navy

For Cody, it is more of the economic and physical costs that have lowered his rates of drinking,

> "*I don't like drinking anymore… …like in Ireland I drank 'cuz we'd go on tours of like Guinness, or like sample a little bit of Jameson, but it's not the type of drinking where's it's drinking to get drunk anymore, it's have a glass of wine. Like my wife and I would socially drink and stuff and we, or like how about we used to uh, like go through five or six bottles of wine per week, and uh, we did, you probably heard of it, the Whole 30, we did that, uh back in January… …and we really liked it… …So I mean we went from drinking five or six bottles a week to we don't even buy wine anymore. Like it's, I mean it saves us like $60 or $70 bucks a week on our grocery bill which is cool."* –Cody, AD (and Reserves) Coast Guard

In addition, some of the veterans have replaced alcohol habits with marijuana, likely due to preferential physical effects, or because they've always preferred marijuana but it wasn't useable during service due to the strict policies.

It appears that alcohol use following service is consistent, but at much lower quantities of consumption for most of the respondents. Binge drinking has been replaced by casual drinking for its social and psychological benefits. The physical and economic costs of binge drinking now outrank the benefits. This change in behavior can be attributed to increased maturity and responsibility, as well as health and familial reasons.

Summary of Substance Use after Service

Hard drug use drops dramatically after service, as only one veteran still uses an illicit drug regularly. Despite the relative non-existence of hard drug use, several veterans use marijuana regularly or have at least tried it; a substantial increase from during service but similar to before. Marijuana is primarily used for its psychological benefits and for experimentation, partly attributable to its legality in

Washington. Alcohol use has increased for veterans after service since before serving, though it is consumed much more casually and in lesser quantities than it was during service for those who did drink heavily while serving. This change from during service to after is accredited to advancing age and maturity, increased responsibility, family, and health-related reasons. In these cases, the costs associated with binge drinking exceed the benefits, yet the benefits of alcohol in lower quantities outweigh the costs for those who continue use.

## SUMMARY AND CONCLUSIONS

Prior to service, substance use appears to mostly mimic civilian trends. In other words, it doesn't appear that a history of substance use is necessarily a precursor to military service, as substance use (across all substances) is relatively low both for the interviewees and the survey respondents prior to service. This implies that individuals entering the military in this era appear similar to other civilians at this point in their life, and are not necessarily "riskier" than anyone else. Instead, it appears that individuals weigh the general costs and benefits associated with substance use in order to determine whether or not to engage, and this varies from person to person depending largely on their family upbringing and life experiences up until this point. Alcohol use is the most common prior to service for the interviewees, and the survey data corroborates this finding. Marijuana use is more common than prescription or hard drug use prior to service, and is used more regularly (again, this is indicative in the interviews and in the survey). Prescription and hard drug use appears to be used primarily for experimentation and social reasons. This is also found amongst the interview responses. Overall, servicemembers of the post-9/11 era appear to be roughly the same as civilian society prior to entering the service.

During service, drug use (prescription, illicit, and marijuana) drops substantially, in both the interviews and the survey data (though not statistically significant for hard drug use, likely due to the low number of respondents using hard drugs). It appears that the costs associated with being caught (or at least the perceived costs) outweighed the proposed benefits for most. Although not all individuals abstained

from drugs during service, marijuana seemed to be the least popular, and drug use that do exist appears to be mostly experimental hard or prescription use. Those who do use drugs are highly mindful of the testing policies in the military. Marijuana use appears to be primarily for social reasons, whereas hard drugs are used primarily for experimentation. The survey reveals that prescription misuse in the military might be more tied to medicinal or psychological coping mechanisms. Alcohol use during service is the opposite of drug use, as many of the respondents explain. According to the interviewees, the apparent "culture of alcohol" encourages many to drink in excess, primarily for social reasons, and this is evidenced by the increase on the alcohol scale for the survey respondents.

After exiting the military, hard drug use drops dramatically amongst the interviewees, and though it increases slightly for the survey respondents, it is not a statistically significant increase. These drugs are primarily used for experimentation. Prescription drug misuse follows the same pattern as hard drug use after service, though it is used for fun and as a coping mechanism primarily, after service. Interestingly, prescription drug use decreases significantly from before service to after service, contrary to what we might expect given the stress and injury many experience while serving. Marijuana use appears to increase after service to a higher rate than prior to service, and this seems apparent in the interview sample as well. It is important to point out that rates of marijuana use after service are no different, however, then rates prior to service according to the survey results. The survey and interview respondents both articulate that marijuana use is for fun and also for the psychological benefits, such as relaxing, reducing stress and anxiety, and helping them fall asleep. Finally, alcohol use after service appears to decrease greatly (and significantly) from during and even before service in both the interviews and the survey. While alcohol is primarily used after service for social reasons, many interviewees attribute their decreased use due to age, maturity, greater personal and familial responsibilities, and health-consciousness.

Despite the strengths of my study, several limitations must be addressed. First, due to the low sample size in my survey, it is hard to draw adequate conclusions regarding the trends in substance use

for marijuana, prescription, and illicit drugs. Although it is possible that rates of drug use are indeed very low, having a larger sample would allow me to extrapolate a more viable conclusion on that point.

Second, in relation to the first point, the survey data collected was not random, and thus it is not generalizable to the entire population of post-9/11 veterans in the United States. It is not even generalizable to post-9/11 veterans living in Washington State. However, the aim of my research is not to apply these concepts to all veterans –it is simply to provide a picture of what substance use may look like for this sample. For that reason, I aimed to gather as diverse of a sample as possible, in order to try and gather a variety of experiences, rather than the most common.

Third, it is important to consider the role of social desirability bias in answers given to the drug and alcohol questions, as well as the mental health and stressful life questions (i.e. sexual assault, homelessness, etc.). It is very possible that an explanation for the low levels of drug use are due to respondents not feeling comfortable discussing their substance use behaviors, either in the interviews or the survey. As the survey and interviews roughly mimic each other in findings, it is possible that some of that bias is reduced, however it is possible that many individuals who do use substances heavily refrained from participating in this study at any level and are thus excluded entirely from the sample.

Fourth, the alcohol and marijuana indices weigh each question equally, assuming that each question in the index is as important in understanding substance use as the next. This may not actually be the case, as some tendencies (such as drinking during school or work) may be more or less indicative of dependency than others.

Fifth, the cross-sectional and retrospective nature of the data make it difficult to draw conclusions about the military life course in the most accurate way possible. As not every question in the survey was asked retrospectively for each time frame, the data are limited in exploring how certain variables (i.e. age, marital status, number of children, etc.) may affect the individual at each stage in the military life course.

In general, substance use in the military is a complicated matter. Rates of use vary greatly from substance to substance and across the military life course. Most importantly, the costs and benefits associated with use provide a great image into why I observe the rates of substance use found in the

survey. Though the military appears to influence the rates of substance use for individuals *during* service (particularly increased rates of alcohol and decreased rates of drug use), it doesn't seem to have a lasting impact on these individuals after they exit the service. In fact, in many cases substance use decreases from rates of use prior to service. The only exceptions are for individuals in the interviews who admitted to heavy drug use prior to service. For these individuals, many re-evaluated their substance use after service and either decreased or stopped use entirely.

This may indicate that while the socialization process of military service creates specific patterns of behavior for individuals while actively involved in the institution, exiting the organization doesn't have strong lasting effects, at least in terms of substance use, on the individuals and their life course outcomes. However, for those who heavily abused drugs prior to service (in the interviews), integration into the military did have a lasting outcome, contributing to decreased rates of use after service. Primarily, it appears that age, maturity, responsibility, and individual experiences are key contributing factors to rates of substance use across the military life course.

Future research should aim to expand upon these data with longitudinal survey data that provide the amount of in-depth detail I was able to include in my survey. I also believe it would be interesting to conduct a similar study examining the effects of higher education on substance use (especially for those entering at 18 and living on-campus) and see how it compares to my data.

Overall my research contributes to the literature on military sociology by providing an in-depth mixed methods analysis that compares rates *and* reasons behind substance use across a variety of substances and across the military life course. The results indicate that the socialization process of the military (and further, other institutions) may be influenced by a variety of factors outside of just indoctrination into the military. Components such as selectivity into the military by the individual (and the military), the changing aspect of the military today, and social forces after exiting the service may all contribute to the way that these post-9/11 era veterans are influenced by their time in the service, particularly in terms of choice to use or not use substances across the life course. Conclusively, it appears that the post-9/11 era is unique in the ways that these service members experience military life (and

subsequent life course trajectories), at least compared to other eras of service. The military makes a great case study for understanding the processes of organizations, particularly total institutions. With these data I am able to provide direct research on the operation of the post-9/11, as well as articulate insights into how behavioral trajectories might be influenced by operation (and socialization) within an organization for many veterans of this era.

# Chapter Four:
# GENDER SUBSTANCE USE, & THE MILTIARY LIFE COURSE: A COSTS AND BENEFITS ANALYSIS

## INTRODUCTION

The study of organizations and institutions has been a cornerstone of sociological research for decades. Notably, the study of total institutions is particularly valued by the discipline. Despite this fascination, sociologists tend to leave out the study of the military, an institution that is considered to be near-total. This is counteracting, as the military can provide an excellent case study of socialization processes, particularly in terms of the effects the institution has on the life course of the individual.

Though research does exist on the theoretical implications of the operations of the military as an organization, little direct research has been conducted. In particular, insights into how behavioral trajectories might be manipulated by operation within these organizations is less known. The military is considered to be a hypermasculine institution; an organization that polarizes gendered characteristics to help foster an institution based on extreme and exaggerated stereotypes of masculinity, including aggression, dominance, and control, as well as the objectification and hypersexualization of women (Anderson & Hysock, 2009; Rosen, Knudson, & Fancher, 2003). As more and more women join the military, research on the effects of military service on the life course outcomes of men and women is essential. In addition, military service typically takes place during the age when individuals' identities are most easily influenced (around 18-25 years) (Teachman & Tedrow, 2007). Consequently, this is also a period when experimentation with drugs and alcohol is most widespread. Understanding how the military influences substance use or abstention, and whether or not these processes vary by gender, is useful in shining light on the mechanisms of total institutions and their effects on individuals.

This study aims to provide awareness into how behavioral pathways might be altered by the processes (particularly of socialization) within institutions. Specifically, I seek to learn how attitudes, opinions, and patterns of substance use are changed by individual involvement in the military, and

whether these transformations vary across gender. To pursue this proposition, I conduct a two-pronged analysis. First, I utilize survey data on 110 respondents in order to analyze basic patterns of substance use (hard drugs, prescription misuse, alcohol, and marijuana) to determine if patterns vary across gender. Second, I evaluate interview data from 18 respondents, nine men and nine women, to understand both the "what" and "why" of substance use – what are patterns of substance use amongst military men and women, do they vary by gender, and why do these patterns exist? In both the survey and interview data I analyze observations across the military life course (before, during, and after service) in order to gain insight on the implications of involvement in a near-total institution and the socialization process within. Finally, in order to understand why individuals' use (or don't use) substances at varying rates across the military life course, and how this may or may not fluctuate by gender, I use a loose Rational Choice framework to assess the relative costs and benefits associated by substance use. Using this theoretical approach, I track how the pros and cons of substance use may lead to increased or decreased rates of use for men and women at each point in the military life course.

Overall I find that men and women's rates of substance use are surprisingly similar, though men tend to use both marijuana and alcohol at slightly higher rates. This is reiterated in both the interview data and regression outputs, though several of the regression coefficients do not show statistically significant gender differences. Despite the similarities in rates of use, the costs and benefits identified across each substance and before, during, and after service vary across gender. This research can be important in helping us better understand the effects that institutions have on the life course trajectories of individuals, and how the effects may differ by gender. Specifically, it can increase our knowledge of the current policies on substance use in and after military service, and how behaviors learned within the institution influence actions after exiting. The results of this study may aid policy-makers in learning how to adequately provide resources to both men and women veterans who are re-entering civilian society.

BACKGROUND

Research on substance use and the military is incomplete, especially when examining the experiences of men and women. However, important findings have been uncovered that, taken together, provide delicate insights into patterns of substance use and how they vary across gender. In the following section I highlight key findings from previous studies that contribute to framing my own research on why observed patterns of substance use differ across gender and the military life course.

**Gender Differences in Rates of Substance Use**

In the general population, previous research has found that men are 2-3 times more likely than women to have a drug use disorder, and women's to men's life time use of drugs is 30% and 40% respectively (Brady & Randall, 1999). In fact, the unsurpassed predictor of substance use in the population (of adults) is being male (Mahalik et al., 2015). Despite these contrasting differences, some similarities do emerge, particularly when age is taken into consideration. Prior literature has found that gender differences in alcohol use and drug use are nearly non-existent in early adolescence (Mahalik et al., 2015; Kuntsche et al., 2015; Nolen-Hoeksema, 2009; Brady & Randall, 1999). In terms of alcohol use, it has been found that men consume alcohol more than women. Men are more likely to be binge drinkers, drink more often, drink greater amounts in one sitting, and are five times more likely to have an alcohol use disorder than women (Mahalik et al., 2015; Brady & Randall, 1999; Nolen-Hoeksema, 2009; Kuntsche et al., 2015). Overwhelmingly it has been shown that women drink at lower rates and have less alcohol related problems than men (Nolen-Hoeksema, 2009; Brady & Randall, 1999). Despite drinking at lower rates, women have been found to be more vulnerable to the effects of alcohol, and the specific biology of women put them at a general increased risk for alcohol-related problems (Hoggat et al., 2015; Kuntsche et al., 2015). This implies that in the civilian population, men and women approach substances in different ways (excluding during adolescence). Yet servicemember and veteran men and women appear to approach different substances in *different* ways (Teachman, Anderson, & Tedrow, 2015; Merklinghaus, Forthcoming).

There is evidence that gendered patterns of alcohol and drug use may be radically different during and immediately following military service. Though infrequent research exists on gender differences in drug use in the military, it has been shown that connections between substance use and military service vary across men and women (Bray, Fairbank, & Marsden, 1999). Male enlistees and veterans are more likely to consume alcohol than their civilian counterparts (Teachman, Anderson, & Tedrow, 2015). Despite the finding that women in the military have a tendency to consume alcohol at lower rates than military men (Teachman, Anderson, & Tedrow, 2015), their rates of illicit drug and cigarette use are comparable to men (Bray, Kroutil, & Marsden, 1995; Merklinghaus, forthcoming), and higher than the general population (Bray, Kroutil, & Marsden, 1995; Hoggat et al., 2015; Merklinghaus, forthcoming).

Noting these differences, several mechanisms may be at work to produce these observed trends. Consistently, it appears that the driving theoretical argument behind the observed gender differences in substance use in the general public stems from gender roles and perceived gender attitudes amongst most men and women. As young men and women transition through society, there are increasing pressures to conform to the expected male and female gender roles, behaviors, and attitudes (Mahalik et al., 2015). For men, this tends to include increasing risky activities, including substance use (Mahalik et al., 2015), though this isn't necessarily the case for women.

In the military the picture is different. The military's social role, historically, has been to change "boys to men" in a rite of passage that emphasizes traditionally masculine traits and devalues traditionally feminine traits (Segal 1999). Servicemen (and women) learn to conceal and devalue the feminine traits they possess in order to more aptly socialize to their environment. This extreme polarization of gendered characteristics can help sustain a hypermasculine culture; contributing to the prohibition of women from becoming fully socialized into the organization (Anderson & Hysock, 2009; Rosen, Knudson, & Fancher, 2003). Hypothetically, these processes could encourage more "masculinized" women to use substances at rates similar to the men in order to "fit in", or discourage more feminine women from substance use (particularly alcohol) due to social isolation.

Despite some research on the general patterns of substance use across men and women throughout the military life course, few studies have addressed *why* some substances are used at low rates, while others are being used at much higher rates. This information is valuable, as it may provide greater understanding into the socialization process of the military and how it may differ for men and women. Understanding the reasoning that goes into substance use or abstention can help inform us of the greater implications for the operation of institutions in general, how these processes change the behaviors of its participants, and whether or not men and women are treated equally in this socialization process.

Sociologists have begun to move more toward the acceptance of Rational Choice theory as a useful theory in explaining social behaviors. In sum, Rational Choice Theory assumes that all individual actions are rational and guided by the psychological conditioning components of rewards and punishments (Scott, 2009; Ogu, 2013; Hechter & Kanazawa, 1997). These benefits and costs allow the individual to evaluate the possible outcomes of a scenario, interaction, or decision, and behave in the manner most inclined to benefit their self-interest (Scott, 2009; Ogu, 2013; Hecter & Kanazawa, 1997). As Scott points out, it is important to highlight that the implied cost or benefit can be just as influential as the actual reward or punishment; unlike psychological conditioning, which relies on the actual punishment/reward taking place in order for the individual to learn the appropriate behavior (2009). Additionally, though Rational Choice Theory focuses primarily on individual actions, it can be used to explain the processes of structures and societies as well (Ogu, 2013; Scott, 2009; Hechter & Kanazawa, 1997). While several assumptions are important to Rational Choice Theory, the most critical to this study is the over-arching assumption of rationality, which suggests that individuals act in ways that will provide them with the utmost benefit (Ogu, 2013).

With this framework in mind, I propose that Rational Choice Theory can be easily applied to understanding patterns of substance use amongst individuals. In addition, it is possible that the underlying costs and benefits associated with substance use vary across gender. In this study I argue that both rates of substance use and selection of which substance *to* use are together influenced by the virtual costs and benefits of using. More specifically, I argue that the benefits and costs of substance use may vary across

gender, and across the stages of the military life course. The following section outlines previous literature and limitations on 1) potential benefits of substances that may encourage use (and gender implications), and 2) potential costs of substances that may discourage use (including gender implications).

**Benefits of Substance Use**

*Psychological –Substance Use as a Coping Mechanism*

It's no surprise that military service often exposes its servicemembers to a variety of negative and even traumatic experiences; more than the average civilian would experience. Service members are also exposed to a variety of stressors associated with being a part of an active duty military, such as combat, the threat of sexual assault and harassment, and even boredom, all of which can increase the propensity to consume alcohol or use substances as a coping mechanism (Suh et al., 2008; Wallace, Sheehan, & Young-Xu, 2009; Teachman, Anderson, & Tedrow, 2015). In general, self-medication is found to be one of the highest motivations for alcohol and marijuana use among adolescents (Boys, Marsden, & Strong, 2001; Newcomb et al., 1988). Those veterans who have experienced combat exposure or trauma during their service may suffer from Post-Traumatic Stress Disorder or Traumatic Brain injury. Since those with mental health disorders, particularly depression and anxiety, are at an increased risk for drug addiction (Robinson et al., 2017), it is possible that those with PTSD or TBI from their time in the service may be more likely to abuse drugs.

When it comes to deployment (regardless of combat exposure), service members who have been deployed are at a higher risk for alcohol dependence and/or binge drinking (Kline et al., 2010) and are more likely to have received treatment for some sort of substance abuse problem (Kline et al., 2010; Shen et al., 2012. Research uncovers that prescription drug use and heavy alcohol use, among other factors, are found to have increased among combat veterans (Bray et al., 2010); however little other information exists, including a direct comparison with veterans who have not seen combat. I aimed to improve upon this shortcoming with my Master's Thesis, finding that there is no decrease or increase in drug use after exiting the service, even after controlling for combat status (Merklinghaus, forthcoming). The major

shortcoming to this finding again lies in the construction of the combat variable from the NLSY-97, which asks if an individual has "*ever served in a combat/war zone*" and not if they have actually *experienced* combat. In addition, few other studies consider combat exposure and its effect on substance use, let alone with direct comparisons across various types of substances and across life course transitions. Those that do focus on combat exposure and substance use tend to focus on the Vietnam era of service or earlier, missing our most recent era of servicemembers. For example, men who served in the Vietnam War report greater rates of marijuana use compared to those of the same era who did not serve in Vietnam or were civilians at that time (MacLean & Elder, 2007). One can assume that the increased rates of marijuana use for servicemembers stationed in Vietnam are related to heightened stress and, likely, availability of the drug. Although this study makes comparisons to the general civilian population, its relevance is limited, as it only analyzes data for Vietnam era veterans and not those of more recent periods. Since women are largely barred from combat positions (at least until very recently), it is less likely that they have experienced direct combat. This may decrease the propensity for women to use substances as a coping mechanism for this specific type of experience. As men are more exposed to combat than women, it is likely that their rates of substance use will be much higher, at least based on this benefit of substance use alone.

How might these experiences and effects vary by gender? Starting with men, it appears that males use alcohol and other substances as a way of solidifying and reaffirming a male-typical or heavily masculine identity to themselves, as well as others (Mahalik et al., 2015). Alcohol use is viewed as a symbol of masculinity in US society (Mahalik et al., 2015). Not only does the mainstream media reinforce this concept, but it is also socially reinforced with friends and even relatives, promoting the idea of a boy's first drink as a rite of passage into becoming a man (Mahalik et al., 2015; Teachman, Anderson, & Tedrow, 2015). In addition, specific characteristics, including aggression and hyper-vigilant control of emotions, are associated both with alcohol use and with masculinity (Nolen-Hoeksema, 2009). In addition, alcohol use is often perceived to be a way of avoidant coping, or denying one's emotions. It is

possible that since men are more likely to partake in avoiding emotions in general, they may perceive alcohol as a viable and socially acceptable mechanism to cope (Nolen-Hoeksema, 2009).

Men are also more likely to experience direct combat than women, at least for now. While women have recently been allowed to start serving in combat positions, the post 9/11 era of combat veterans is currently a majority of men. If the men are more exposed to combat than women, it is likely that their rates of substance use will be much higher, at least based on this benefit of substance use alone.

On the other side of the coin, women are less exposed to combat, but that doesn't mean they have less stressors in their lives during military service. Women have other stressors during service that are explicit to their gender (Bray, Fairbank, & Marsden, 1999). These stresses may include sexual aggression/assault (Nolen-Hoeksema, 2009)**.** In addition, females who choose to join the military are predisposed to a variety of risk factors that are linked with increased substance use (possibly as a coping mechanism), including increased likelihood of childhood trauma, domestic violence, history of sexual assault, and poor mental health (Hoggat et al., 2015). In fact, it has been found that while men tend to drink more for fun or to be social, women tend to drink *more* as a coping mechanism (Kuntsche et al., 2015).

*Social –Bonding and Camaraderie, or a Lack Thereof*

The institution of the military is a particularly unique environment, in that it is a near-total institution that isolates recruits from family and friends and re-socializes them to a military environment (Wallace, Sheehan, & Young-Xu, 2009; Wilmoth & London, 2013; Sampson & Laub, 1996; Teachman & Tedrow, Forthcoming; Overdale, 2012). According to the cultural transmission theory, drug and alcohol use are learned behaviors that are acquired through socialization to a particular culture, in this case, the military (Henslin, 2011). The value of alcohol for the military as an institution is in its capability to boost connection and camaraderie amongst the troops, heighten morale, and ease the transition from deployment to returning home (Jones & Fear, 2011). In addition, alcohol has been, historically, a simple-to-acquire commodity within the military, and its use has even been motivated through the use of military policies, including the easy access of alcohol on base and at a subsidized price (Teachman, Anderson, &

Tedrow, 2015; Wallace, Sheehan, & Young-Xu 2009; Jones & Fear, 2011). This barefaced support of alcohol by the military, coupled with the resocialization process within the military including removal from family and friends, *and* at a critical time period in the life course, could lead to amplified levels of use compared to the civilian population, and even the formation of habits that could even persist following service (Mahalik et al., 2015; Teachman, Anderson, & Tedrow, 2015).

Similar to alcohol, other substances could hypothetically be used to increase bonding and sociability as well, particularly in isolating situations like basic training and deployment. For instance, in the general population, use of hallucinogens and stimulants are found to be associated with dance events and to enhance social interactions, while alcohol and marijuana are used primarily to relax or "feel better" (Boys, Marsden, & Strang, 2001). The same study finds that when drugs with certain properties are unattainable, other drugs with similar highs may be substituted instead (Boys, Marsden, & Strang, 2001). Therefore, if the military's attitudes toward one substance are more restrictive than another, individuals may substitute other substances in its place that can do the same job.

Social learning theory describes the process of observing the interactions of others and modeling those behaviors that exhibit positive rewards (Akers, 1973). This process may be particularly influential for instigating drug and alcohol use (Akers, 1973), in fact, peer-motivation is found to be one of the highest incentives for alcohol and marijuana use amongst adolescents (Boys, Marsden, & Strang, 2001), and many choose to experiment with drugs or alcohol because their friends are (Robinson et al., 2017). Since military service typically occurs at a young age (18-25), it is likely that recruits are easily influenced by their friends and peers around them as well (Teachman, Anderson, & Tedrow, 2015). After exiting the service, servicemembers are no longer exposed to the stressful qualities intrinsic to the military. Therefore, veterans might not require the use of substances to encourage sociability to the same degree that they did whilst serving.

While discouraging the use of drugs, the military's encouragement of the use of alcohol as a bonding mechanism (Teachman, Anderson, & Tedrow, 2015; Wallace, Sheehan, & Young-Xu, 2009; Jones & Fear, 2011) may play a major role in the development of problems with alcohol. Since military

service typically occurs during late adolescence and young adulthood, a time when identity formation is at its peak, it is possible and predictable that behaviors learned while in the service may solidify into habits that persist following service (Mahalik et al., 2015; Teachman, Anderson, & Tedrow, 2015). This supports the finding that alcohol use is positively associated with military service, with male enlistees and veterans at a higher propensity to consume alcohol than their civilian counterparts (Teachman, Anderson, & Tedrow, 2015).

To understand the effects of socialization in the military on substance use for the men, it might be more useful to look at the women. Women are a serious minority in the population of the military. In fact, only 15.5% of the active-duty military is female (DoD Personnel, Workforce Reports & Publications, 2015). It is possible that women are less exposed to the culture of masculinity, which encourages alcohol use, that is strongly present in the military, be it that there are less women in the service than men (Teachman, Anderson, & Tedrow, 2015; Merklinghaus, Forthcoming). This is evidenced by the fact that hypermasculine cultures tend to promote negative and/or sexualized stereotypes of women, thus potentially excluding women from the culture entirely (Rosen, Knudson, & Fancher, 2003). Women, in this instance, may feel pressure to fit into a male-dominant military culture and also experience feelings of isolation resulting from the small number of women enlisted alongside them. Women in this case might be encouraged to drink or use substances in order to fit in, or prove that they're the type of girl that can handle their liquor and "hang" with the men. On the other hand, the men may be thriving off the hypermasculine culture, thus encouraging them to drink at higher rates in order to bond and socialize with "the boys". In both cases, these processes may be more applicable with alcohol rather than drugs, as alcohol is seen as more of a "social" substance.

Despite these gender differences, there is some evidence for why gender differences barely exist in the rate of drinking during *adolescence*. Excessive drinking during adolescence may be seen as culturally acceptable, despite the conflicting nature of gender roles with alcohol use (Hingson, Heeren, & Winter, 2006). The more alcohol is perceived as socially normative or expected, such as viewing friends or family members partake, the greater the individual begins to view the behavior as acceptable (Mahalik

et al., 2015). Problem drinking emerges when normative drinking behaviors are coupled with the previously discussed cultural norms of drunkenness and excessive drinking. As individuals move through adolescence, they begin to embrace or castoff particular genders norms that they see fit, thus resulting in gender differences in substance use later on in the life course (Mahalik et al., 2015). Although there are more similar patterns of substance use in adolescence, gender differences do emerge in *motivations* for drinking. As mentioned before, men have been found to drink more for social reasons like bonding and camaraderie, whereas women are more likely to drink as a coping mechanism or to fit in with the group (Kuntsche et al., 2015). Taken together, it appears that both men and women experiment with substances while in the military, but their reasons for doing so may vary by gender. This variance may be related to the differing ways that men and women are socialized into the institution of the military, thus affecting their behavioral trajectories during and after serving.

*Physical—Effects of Substance Use*

Most people use substances, at the very least, for the physical effects they have on the body. Aside from enhancing social situations and bonding with friends, many would argue that using alcohol or drugs is simply *fun* (Robinson et al., 2017).

Other physical effects of substances may encourage their use. For example, hallucinogens and stimulants have been found to assist with weight loss, and other illicit drugs have been used for enhanced sexual experiences or improved energy and motivation to work (Brecht et al., 2004; Boys, Marsden, & Strang, 2001). Some substances (alcohol and marijuana) have even been found to alleviate the effects of other drugs (Boys, Marsden, & Strang, 2001).

The adrenaline rush of experimenting with drugs and alcohol is a motivating factor for many (Cherpitel, Meyers, & Perrine, 1998). When applying this concept to servicemembers, the aspect of selectivity into the military must also be taken into account as well. It has been found that individuals with a propensity for risk taking may be at a predisposition to join the military (Teachman, Anderson, & Tedrow, 2015; Mahalik et al., 2015). This includes an inclination toward risky health behaviors like drug and alcohol use as well (Teachman, Anderson, & Tedrow, 2015; Mahalik et al., 2015). Taken together,

the background characteristics of servicemembers may be an important precursor to substance use within the military.

According to the "precarious manhood" theory, men further increase their risk-taking behavior when they feel that their masculine status has been challenged or lost (Mahalik et al., 2015). Predictably, men who are very "macho" will be more likely to endorse in the protection of their manliness, resulting in higher levels of risk-taking (especially throughout adolescence), including alcohol and/or drug use (Nolen-Hoeskema, 2009; Mahalik et al., 2015). Therefore, military men may be more likely to experiment with drugs and alcohol because those choosing to join the military are more likely to be risk-takers, and the environment of the military may encourage risky behavior beyond that.

Women who enter the military are likely to be different from the general population of women as well. They may be more inclined to participate in risky activities and so the same logic for why risk-taking men may use substances more can be applied to the women, especially for drug/marijuana use.

**Costs of Substance Use**

In addition to the relative benefits of substance use, there are important costs that must be considered as well. Below I detail the consequences of substance use, broken down into three key costs; economic, psychological and physical, and social.

*Economic Costs*

One of the most obvious costs of substance use in the military is the threat of being caught using, or using excessively (in the case of alcohol). Since the 1980s, the military has worked hard to decrease the amount of substance use during and after military service within its ranks (Wallace, Sheehan, & Young-Xu, 2009; Bachman et al., 1999). Various new policies, including urinalysis tests, serious punishments for testing positive or being found to be in the possession of drugs, raising the US military base drinking age to 21, and increasing early prevention and intervention programs have all greatly reduced the amount of drug and alcohol use amongst service members, especially while enlisted (Wallace, Sheehan, & Young-Xu, 2009; Bachman et al., 1999). Generally, there is a decrease in drug use while in the military from

37% in 1980 to six percent in 1998 (Ames, Cunradi, & Moore, 2002). In spite of decreases in overall drug use, however, there is evidence of increased prescription drug misuse while serving on active duty and after exiting the service, and even higher than civilians (Bray et al. 2010; Miech et al., 2013; Golub & Bennett, 2014; Vazan, Golub & Bennett, 2013; Drug Facts: Substance Abuse in the Military, 2013). In addition, alcohol use still appears to be a significant problem. Although there is an overall decrease in the number of individuals seeking treatment for alcohol use disorder or testing positive for drug use, it is possible that many individuals are avoiding treatment because of the stigma associated with using (Kelsall et al., 2015; Eisen et al., 2012; Bray et al., 2010).

Fear of expulsion from the military, court marshalling and jail time (if a crime was committed in joint with the substance use, such as Driving Under the Influence), and a dishonorable (or other-than-honorable) discharge status are all real threats to individuals using while serving, particularly for illicit drugs, marijuana, and excessive alcohol use (Kelsall et al., 2015; Eisen et al., 2012; Bray et al., 2010). Discharge statuses can influence whether or not a veteran is able to collect VA benefits, such as the GI bill for schooling (Wilmoth & London, 2013) or healthcare. It can also affect the likelihood of being hired after exiting the service (Chakrabarti, 2013), and addiction in general increases the likelihood of absenteeism, workplace accidents, and being fired (Henslin, 2011). The penalties of illicit substance use or excessive alcohol use while serving can lead to severe economic loss (including the cost of the substances themselves) and even criminal consequences, however the benefits of alcohol use (and the legality of alcohol) may still encourage its use. Similarly, the legality of marijuana in Washington State (though not in the military) may promote its use following service as well.

The consequences associated with being caught for excessive alcohol or drug use in the military are theoretically equal across the board for both men and women. However, some gender differences have been observed in actual sentencing for crimes in the general public, especially for drug offenses (Rodriguez, Curry, & Lee, 2006), so it is feasible that servicewomen could be “let off easy” in comparison to men. In this sense, the economic consequences may be less severe for women than for men, which could suppress substance use for men and increase rates for women. In addition, as women

are typically responsible for childcare the economic costs of substance use could make it especially difficult for single mothers, especially if one cannot find a job, or if jail time is a potential punishment.

*Psychological & Physical – Addiction*

The psychological deterrents of substance use are two-fold. On one hand, excessive use of alcohol or even just a one-time experience with illicit drugs can lead to a life-long addiction (Robinson et al., 2017). On the other hand, using substances as a coping mechanism or to self-medicate can provide users with relief. Repression of stress and traumatic events like those experienced in the military (isolation, loneliness, combat exposure, sexual trauma, etc.) could lead to an unhealthy mental state, and could perpetuate a cycle of addiction if left unexplored. The military's encouragement of alcohol use to promote socialization could inadvertently reinforce unsafe drinking behaviors like binge-drinking and consumption before or during school or work, assault, and unwanted sexual contact (Wechsler et al., 1994, Henslin, 2011). The consequences of addiction are endless, but some examples include economic loss, psychological and physical dependence, and even death (Henslin, 2011).

The dangers associated with drug and alcohol use may also discourage their use. Individuals with a history of addiction in their family may be more likely to avoid alcohol or drugs for fear of the disease or simply because of the devastation it may have caused with a family member or friend (Robinson et al., 2017). The negative physical side-effects of drinking (hangovers) and drug use (withdrawal) may also discourage high levels of use or experimentation with substances. In addition, increased exposure to a host of diseases, such as HIV and Hepatitis may also deter individuals from using drugs (Stein, 1999).

The physical and psychological sensations associated with drug or alcohol use may also discourage servicemembers from using. Some individuals may just not be interested in alcohol or drugs due to the loss of control, or disliking the feeling of the "high" or "buzz". Some may avoid simply because they don't like the taste of alcohol. In addition, if addicted, maintaining the addiction would be extraordinarily challenging while serving, as it would both be hard to hide their addiction (particularly the physical side-effects), and complete necessary military functions, such as their daily job duties (Henslin, 2011).

Interestingly, while alcohol use is a pillar of the male gender role (as discussed previously), which may encourage male drinking, it does not appear to be a part of the female identity (Nolen-Hoeksema, 2009). Particularly, women who are highly feminine or value femininity as a part of their gender identity are likely to consume less alcohol and do so less frequently (Nolen-Hoeksema, 2009). This mismatch in the masculine symbolism of alcohol with the feminine gender identity is perceived and internalized by women, thus resulting in decreased alcohol use in the general population. Negative stereotypes about women using alcohol exist, regardless of their validity, and are perceived to be real by women. A recent study found that 50% of women disapproved of the concept of a woman getting drunk at a party, compared to only 30% disapproving of a man getting drunk (Nolen-Hoeksema, 2009). In the same way that the male gender role tends to be associated with traits that increase drinking, such as hostility, risk-taking, and anti-sociality, the female gender role is the opposite, where particular feminine traits might actually be a protectant factor against drinking (Nolen-Hoeksema, 2009).

In addition, it has been found that the physical consequences of drinking may be more severe for women than for men, thus discouraging women to drink. Such consequences include increased illness at similar levels of alcohol use, increased cognitive impairment, increased risk of sexual assault, and increased reproductive problems (Nolen-Hoeksema, 2009). In addition, studies have found that women drinkers are perceived by others to be more aggressive and "easy", but this standard did not exist for male drinkers (Nolen-Hoeksema, 2009).

Despite all of these findings, it is still possible that these traits may not apply to women who enter the military. As noted before, women choosing to serve are different from the civilian population of women. They may hold less stereotypically "feminine" traits, which may exclude the protective factors of femininity from applying to them in this case.

Regardless, it has been found that women (in general) perceive alcohol will interfere with their ability to cope with adverse situations, which may lead them to avoid alcohol when they are under a duration of stress (Nolen-Hoekema, 2009), something that is persistent while serving in the military. It is possible that women are acutely aware of the threat and danger of sexual assault and harassment while in

the service, and the aforementioned links between alcohol and sexual violence, thus they avoid alcohol as a protective factor (Teachman, Anderson, & Tedrow, 2015).

*Social –loss of family/friends, isolation*

Finally, there are plenty of social losses associated with substance use. Choosing to use substances may isolate the individual from family members and friends who don't approve (Robinson et al., 2017). Continued use or addiction can lead to collateral consequences, such as stealing to acquire money for substances and jail time (Henslin, 2011), and could further isolate users from their previous social spheres. In addition, drug abuse increases the likelihood of divorce or separation from a spouse, as well as the likelihood of spousal abuse (Henslin, 2011). Individuals with family members who had problems with substance abuse might not want to follow in their footsteps. Drug abuse can even stop social development and lead users to experience a loss of interest in hobbies that used to bring them joy (Robinson et al., 2017). For these reasons, and given the stance of drugs vs. alcohol within the military institution, it is possible that servicemembers may be more inclined to use alcohol while serving, and avoid drugs, at least until after exiting the service.

When taking gender into consideration, women and men with children may be less likely to choose to use drugs or keep alcohol around the home, due to its negative influence on their own personality, behavior, and/or the likelihood of children trying it themselves. Since women tend to be primarily responsible for childcare, and are more likely to be single-parents, they may be put in this position more often and thus may be more likely to abstain if they have children to care for. If the individual is addicted and faces some of the collateral consequences of substance abuse mentioned previously, loss of custody over children may be a serious cost for both men and women.

**Summary of Shortcomings of Prior Literature**

To summarize, perceptions on the workings of the military specifically as an institution have been theorized on in the past, but are lacking in terms of direct research. Furthermore, understanding of behavioral pathways while serving, and how they may be altered by the socialization into or functions of

the military are relatively understudied, especially when it comes to differences across gender. Although there is some research about the general degree of substance use in the military and gendered patterns of use, most of these studies face several challenges.

First, of the literature focusing on drug use in the military, it tends to overlook comparisons within a single study to other stages of the life course (i.e. civilian to active duty to veteran). Although there is obvious importance in focusing on veterans as the subject of military research, limiting analyses and questions to their experiences during or after service may lead to inadequate tests of crucial theoretical arguments. By only targeting the effects of service after exiting the military, studies may be missing important controls for selectivity into the military (in that civilians with a higher propensity for risk-taking may join the military, and that riskiness is associated with increased rates of drug and/or alcohol use in the first place, or other characteristics like age or personality traits). In addition, looking only at the tail end of service may make light of the overall effects of service on the life-course.

Second, the majority of analyses look just at marijuana use or prescription drug misuse and tend to group any reference of illicit drugs into one ambiguous category. Generally, these studies tend to lack direct comparison across these different categories of substance, and there have been few that include alcohol in the comparison with other drugs. This makes it challenging to unpack the specific mechanisms driving individuals to use specific substances. For example, the NLSY-97 question on "hard" drug use asks, "*Excluding marijuana and alcohol, since the date of last interview, have you used any drugs like cocaine or crack or heroin, or any other substance not prescribed by a doctor, in order to get high or to achieve an altered state*". While this question is useful in a generic sense, it doesn't provide enough detail in terms of understanding patterns of usage across specific substances (i.e. cocaine, heroin, prescription drugs, etc.). In addition, many studies miss direct comparisons to other substances, like alcohol and marijuana. Without straightforward comparisons it is challenging to compare/contrast the various mechanisms driving usage for one particular substance over another.

Third, there are relatively little data pertaining to differences according to gender, both in patterns of use and in reasons for using (or abstaining). This is important for understanding how organizations

operate, particularly in terms of their socialization practices and the effects of these processes. Additionally, most research focuses on older eras of veterans, with few touching on the post- 9/11 era.

Finally, and most importantly, there are little to no studies that explore *why* service members are using some substances at one rate, and others at another, why gender differences exist across substances used, and how the military affects the variability of use for each substance.

**Current Study**

I intend to expand upon the highlighted challenges in the literature by comparing cross-sectional interview and survey data on the behaviors and experiences of substance use for both male and female veterans in order to try to uncover the theoretical mechanisms behind the previously observed gendered patterns of substance use, and across a variety of substances (including a variety of illicit drugs, prescription misuse, alcohol use, and marijuana use). I focus on the current, post-9/11 era of veterans to provide a current picture of substance use and the United States military. I believe that with this exploratory data I will be able to provide more understanding into how behavioral pathways might be transformed by membership in specific organizations (in this case the military) and how participation may affect the trajectory of life course outcomes for the individual.

DATA & METHODS

**Survey Methodology**

I created an online[34] survey of American veterans of the post-9/11 era that are currently residing in Washington State. This survey is critical in order to explore detailed rates of substance use throughout

[34] With the assistance of my research partner, Daniel Nolan. The survey is hosted by Google Forms. Respondents were able to access the survey via a link provided on the recruitment materials. The survey is organized into four distinct sections (each a separate page); demographic data, experiences prior to military service, experiences during military service, and experience after military service. Demographic information is only collected once on the survey, so it is assumed that all data is taken in the "present" time; after service (i.e. number of kids, highest education achieved, etc.). Respondents had to answer all questions in order to move on to the next page, though "Prefer Not to Answer" was an option on every question for those who were not interested in disclosing information on a particular indicator. The final page provides interested individuals with a link to a separate Google Form that

the military life course across a variety of socio-demographic characteristics. It is important to highlight that this sample is not random nor generalizable to the general population of veterans in Washington or the United States. My aim in conducting this research is not to apply these concepts to all veterans –it is simply to provide a picture of what substance use may look like for this sample. For this reason, I aimed to collect as diverse of a sample as possible, in order to try and gather a *variety* of experiences, rather than the most common.

I use a targeted recruitment model. I sought out a wide variety of veterans' organizations, including Veterans Affairs offices, campus veteran organizations[35], and local veteran outreach newsletters. Simply reaching out to veteran outreach programs is not enough, however, as not all veterans are adequately represented at veteran outreach organizations. For this exploratory study, it is important to gather a wide representation of veterans, not just those who are savvy at using veteran outreach organizations. In addition, those using the organizations may be the least likely to have had or currently have substance abuse problems. Therefore, I also recruited from locations that may include veterans with health issues or who may be struggling financially, such as VA clinics and hospitals, Department of State Health Services offices, and substance abuse clinics.

In addition to specific veteran organizations, I aimed to make my study available to the widest audience possible. For these reasons, I also recruited from local grocery stores, feed & seed/hardware stores that typically have community bulletin boards, businesses that are known for employing veterans (i.e. Walmart and Home Depot), and libraries.

Overall, the list of eligible business/organizations were determined based on the following criteria; clientele (veteran facilities, student veteran centers, substance use offices), publicity (libraries,

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collects first name and email in order to enter them into a drawing to win an iPad Mini. The raffle survey is not and cannot be linked in any way to the military survey. Respondents are also provided with the study email for any questions as well as a way to reach out if interested in participating in an interview.

[35] Daniel and I chose not to reach out to American Legion or the Veterans of Foreign Wars, as both organizations are typically geared toward older eras of veterans, and have been found to be scarcely used by younger, post-9/11 veterans (Klimas, 2014).

DSHS, grocery stores, hardware stores), variety (different types of grocery stores), potential for homeless veterans (libraries, DSHS offices), and high number of veteran hires (Walmart and Home Depot[36]).

In order to recruit the most possible veterans, but also being mindful of limitations on time and money, I located a map (US Department of Veteran Affairs, 2015) that indicates the counties in Washington State with the densest populations of veterans (although not controlled for general population[37]). In each of the selected counties, I then created a spreadsheet of all target organizations and businesses that were in that county, organized by town/city. If a town in the selected county had at least two identified organizations or businesses, then it was added to a separate spreadsheet of locations to visit or contact[38].

The final spreadsheet contains a list of 21 counties in Washington, with a total of 104 towns/cities to contact[39]. We contacted all locations by phone first then email, excluding the grocery stores/hardware stores, which we found were more successful if contacted in person[40].

When contacting the aforementioned locations, I asked if it would be possible to leave flyers, business cards, or email them a pre-formatted email/Facebook announcement that they could advertise for us. The flyers and business cards all contain links to our survey, as well as a contact email for those interested in participating in an in-depth interview. Therefore, the interview and survey samples are roughly from the same pool of respondents.

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[36] After the first recruitment trip to Eastern Washington Daniel and I had to revise our list of businesses to accommodate changes in policies at Walmart and Home Depot, neither of which could reliably distribute our materials. We replaced the Walmarts with Fred Meyer grocery stores who did have community bulletin boards, and replaced the Home Depots with local feed and seed stores that had community boards for posting flyers. We found that many Safeway grocery stores no longer have community boards either, but most were happy to post our materials in their employee break room when requested, so we maintained Safeways in our list of outreach locations.

[37] In addition to these counties I added several that were less dense but were near to key veteran resources or were close to military bases in the state.

[38] For the sake of saving resources, there was one exception to this rule – if one of the two locations in the town were places that could not be reached via phone/email (i.e. a grocery store), then the town was deemed too small and not worth commuting to just for two in-person locations. In addition, due to the vast number of substance use disorder clinics in the state, we chose to include a randomly selected 20% of clinics in cities that had more than 10 clinics total, or 2 clinics in towns that had less than 10 total.

[39] Responsibility over specific counties were split across myself, Daniel, and a small team of sociology undergraduate research students.

[40] For locations that were designated in-person and those who did not answer their phone/email Daniel and I drove to directly.

In addition, I also sought out individuals via digital resources, including Facebook groups and Craigslist. I located Facebook buy/sell, event, or veteran groups by county and town using the search group function on Facebook and adding all relevant groups. Once accepted by the group administrators I was able to post a copy of our recruitment information, survey link, and contact email for individuals to access[41]. A similar process was used for Craigslist as well[42].

I believe that creating and fielding my own survey, rather than using a currently existing database, is essential to this research. As I was able to pull interview respondents from roughly the same pool of survey respondents, I am able to identify any major social desirability bias in the interviews (by comparing substance use rates in the interviews to the rates in the survey). While I could have drawn on a pre-existing survey, I believe that significant flaws exist in the current most reliable database that warrants the creation of my own survey. Previous research on substance use in the military has relied heavily on the National Longitudinal Survey of Youth, 1997. While this database is exceptional in many ways (such as the longitudinal nature of the data, and the large sample size), it has several critical shortcomings that can easily be improved upon with the administration of my own survey. [43] The final survey includes 110 eligible respondents.

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[41] Individuals who were members of the groups were able to freely share our information with other friends and veterans who might be interested.

[42] I posted our information under the categories of "community/general", "community/volunteers" and "community/gigs/domestic work", since we compensated our recruits. All survey participants were compensated for their time by being entered into a raffle to win an iPad Mini.

[43]The first problem in the NLSY97 lies in the wording of the question to assess combat status among veterans. The question asks if the respondent has ever served in a combat/war zone. The flaw here is that it doesn't specifically ask if the individual has actually *experienced* combat. While deployment to a combat zone regardless of whether or not combat was experienced can have obvious effects on the wellbeing of the individual (such as stress of being in a new environment, isolation from family/friends, fear of experiencing combat, etc.), *actually* experiencing combat (such as having to fire your weapon, being injured in combat, or witnessing friends/fellow servicemembers experience combat, injury, or death) will have greater negative consequences on the individual. By not specifying whether or not the respondent experienced combat while deployed, the NLSY97 effectively underestimates the effect of combat on servicemembers. The second problem in the NLSY97 is with the question on hard drug use (there are separate questions for marijuana use and drug use). The question asks, "Excluding marijuana and alcohol, since the date of last interview, have you used any drugs like cocaine or crack or heroin, or any other substance not prescribed by a doctor, in order to get high or to achieve an altered state?" While this question is useful in a generic sense, it doesn't provide a sufficient amount of detail in terms of understanding motivations to use varying substances. I believe that the motivation of an individual to use a hard drug, such as heroin, may be very different from the motivation of a respondent to use an alternative drug, such as psychedelics (like LSD, MDMA, etc.), therefore lumping them together (and biasing the question by only mentioning heroin, crack, and cocaine) makes it

My survey corrects for the limitations in the versatility of important NLSY97 indicators. First, I include several questions on combat status rather than one. For example, one question indicates whether or not the individual was deployed, and a second asks whether or not combat was *experienced* while deployed. I also include several other questions pertaining to the nature of combat, such as if they were ever exposed to any hazardous materials or if they ever saw a dead body while in combat.

In order to remedy the shortcomings of the drug use question from the NLSY97, I include several questions on our survey that ask specifically what drugs the respondent has used at each point in time (before, during, and after service) as well as an option to indicate their reasons for using these drugs on the same timeline, and whether or not they had ever just "tried" one of these illicit drugs. I provide a detailed list of drugs for respondents to identify from, rather than just lumping them all into the category of "illicit" or "hard" (i.e. cocaine, LSD, MDMA, spice, etc.). Aside from the drug use questions, I provide the same set of questions in separate subsections for alcohol, marijuana, and prescription drug misuse.

In order to create meaningful descriptive data, I chose to create several indices from the variables, as outlined below[44].

The first is an index from the alcohol use variables. The Alcohol Index is an adequate measure of alcohol use for the respondent, based on the following five questions:

11. *Have you ever consumed alcohol (more than just a "sip")?*
12. *About how much alcohol do you drink per week? One drink is considered to be one beer, one glass of wine, or one single-shot mixed drink.*
13. *About how much alcohol do you typically drink in one setting?*
14. *How often do you do you drink alcohol before or during school or work?*
15. *How often in the average month do you drink to get drunk?*

Respondents were assigned a value based on their responses (weighted by degree of problematic behavior), which was added together for each question to create the index. The final index ranges on a continuous scale from 0 to 5, with five indicating the heaviest degree of alcohol use. The index was created for each stage as well; before service, during service, and after service. I use Cronbach's Alpha in

difficult to determine whether or not motivations vary by type of drug. In addition, this NLSY97 question is also worded in a convoluted way that makes it difficult to determine whether or not it captures prescription drug misuse.

[44] All data analyses were conducted with the assistance and guidance of my research partner, Alice Lazzar-Atwood

order to measure internal consistency. The Alcohol Index prior to service has a Cronbach's Alpha value of 0.78; during service has a value of 0.76, and after has a value of 0.75.

I also create a Marijuana Index in order to measure participation and frequency of marijuana use for each respondent. This index is based on the following questions:

5. *Have you ever used marijuana?*
6. *How often do you use marijuana?*

These questions were asked for each stage of the military life course; before, during, and after service. The scale ranges from 0 to 6, with a score of 6 indicating the heaviest degree of marijuana use. For readability, and as there are only two questions to create this range from, we chose to multiply the index value by three so that the scale ranges from 0 to 6 rather from 1 to 2.

Using the majority of combat questions, I create a Combat Exposure index in order to combine all combat questions into one useful index. The Combat Exposure index is constructed using the following questions:

15. *Have you ever been deployed?*
16. *Have you ever been deployed to a combat zone?*
17. *How many times have you been deployed to a combat zone?*
18. *Did you experience combat?*
19. *Were you exposed to wounded, dead, or dying people?*
20. *Were you ever physically injured due to combat or exposure to combat?*
21. *Were you ever exposed to environmental hazards, chemical warfare agents, ionizing radiation, or other potentially toxic substances?*

This index has a scale of 0 to 7, with 0 indicating no exposure to combat and 7 indicating consistent and high levels of combat exposure. The Combat Index has a Cronbach's Alpha value of 0.74.

The final index I create is a Transitionability Index, which tracks the ease at which respondents transitioned back into civilian life after military service. The Transitionability Index is based on the following questions:

27. *After your service, how difficult was it for you to find a job?*
28. *Do you feel that the job skills you learned while in the service are applicable to civilian life?*
29. *It was very easy for me to transition into the civilian job market (on a scale from 0-7)*
30. *There are plenty of transitional programs offered to help me adapt to the civilian job market (on a scale from 0-7).*

31. *There should be more transitional programs to help me adapt to the civilian job market (on a scale from 0-7)*
32. *It was very easy for me to emotionally transition into civilian life (on a scale from 0-7)*
33. *There are plenty of transitional programs to help me adapt to civilian life (on a scale from 0-7)*
34. *I fully take advantage of transitional programs offered to help me adapt to civilian life (on a scale from 0-7)*
35. *There should be more transitional programs to help me transition to civilian life (on a scale from 0 to 7).*
36. *There are plenty of programs available to help me address any adverse effects of military service (on a scale from 0-7)*
37. *My military service helped me achieve things I couldn't have achieved without it (on a scale from 0-7)*
38. *My military service has made life more difficult for me than it was before service (on a scale from 0-7).*
39. *My military service has been a positive influence on my life (on a scale from 0-7).*

The final scale ranges from 0 to 14, with 14 indicating the easiest transition from the military to civilian life. Questions were corrected as necessary for directionality. The Transitionability Index has a Cronbach's Alpha value of 0.59

I also include a variety of descriptive variables in order to adequately assess the scope of our data. These include general demographic questions (such as gender, sexual orientation, marital status, whether or not they have children, region lived at age 16[45], and age), military-related demographic questions (branch of service, age of enlistment, deployments, military job and rank, active duty vs. reserves/national guard), and difficult questions on homelessness, anxiety, Post-Traumatic Stress Disorder, Traumatic Brain Injury, and sexual assault. Due to the retrospective nature of the data, and because I did not ask each question at each point in time, some of the data is more truly cross-sectional in nature (i.e. number of children, marital status, etc.), valid at the time of survey which is in the "after service" stage of the life

[45] Respondents were asked to provide the city and state they lived in at age 16. From the state data, Daniel and I were able to create a "region" variable, based on the following regions: Northeast - ME, VT, NH, NY, MA, CT, RI, NJ, PA, DE, MD, South - FL, GA, AL, MS, LA, AR, TN, KY, SC, NC, VA, WV, TX, OK, Midwest - OH, MI, IN, IL, MO, IO, WI, MN, ND, SD, NE, KS, Rocky Mountains - MT, WY, CO, UT, ID, NV, West Coast - CA, OR, WA, AK, HI, Southwest - NM, AZ

course. Only the time-varying questions (most of the mental health questions, all substance use questions) are able to track across each stage in the military life course.

In order to analyze patterns of substance use, I conduct tests of significance to identify if differences exist in rates of use before, during, and after service in the descriptive portion of my analysis, as well as across gender. I analyze cross-tabulations to assist in the understanding of these trends. I also employ multiple linear regression analyses to analyze gender differences in rates of use before, during, and after service.

Although my study has clear strengths, it isn't immune to weaknesses of its own. Clearly, conducting a cross-sectional study to gather longitudinal data is an obvious flaw[46], however I believe that the strengths of our own survey outweigh the costs of its limitations. Studies have already been conducted using the NLSY97 in order to understand rates of drug and alcohol use in the military. By providing more detailed questions in our own survey, I am able to answer questions that these previous studies have not. Mainly, with this survey sample I am able to gain preliminary insight into patterns of drug and alcohol use across the military life course. However, a survey is not enough to answer these questions, regardless of how detailed the questions are. Therefore, I also conducted in-depth interviews to supplement the survey data.

[46] It is important to note some aspects of data-cleaning that were taken into consideration when constructing the final data set. First, any respondents that answered a question with "Prefer Not to Answer" or "N/A" was excluded from the analysis for that question. Because of this, the total number of respondents for each question varies from question to question. Second, only one individual in the survey indicates that they identify as a transman. Due to low sample size, I chose to exclude them from gender comparisons later in this paper. This decision is difficult, however one respondent is not enough to make large conclusions about transgender individuals in the military, and the experience of a transman will most likely vary greatly from that of an individual identifying as a man or woman. In addition, any respondents who did not meet the eligibility criteria were removed from the sample. This includes those who state they do not live in Washington currently, if they are still in the military, and if they enlisted prior to 9/11/2001. Finally, for several of the questions (especially on type of drug-use questions) respondents were allowed to select more than one answer. When analyzing these questions, each response was counted as a separate. For example, if a respondent provided three types of drug experimented with prior to service, they would count as one answer toward each type of drug, rather than one combined individual with all three options. Due to this caveat, several of the calculations include N values higher than the total number of respondents in the sample.

**Interview Methodology**

In order to provide insight into how behavior trajectories might be altered by the processes within organizations, I conduct a mixed-methods study which utilizes both quantitative and qualitative data. These qualitative data help provide evidence of the causal mechanisms through which the quantitative patterns are observed (both in my own data and in the general literature). In other words, the interview data help solve the puzzle of *how* individuals evaluate the pros and cons of substance use and then use these steps to inform their subsequent behavior. This provides data on the mechanisms of substance use across the military life course that have not yet been observed in this discipline.

The interview recruitment process follows that of the survey previously described. The flyers and business cards left at various veteran organizations, clinics, businesses, outreach newsletters, and online resources all contained an email address that interested veterans were able to respond to in order to sign up for an in-depth interview[47].

To reduce bias and to encourage rapport with our respondents, I decided to keep the gender of the interviewer consistent with the gender of the respondent. So, in this vein, my research partner Daniel Nolan interviewed all male respondents and I interviewed all female respondents. I felt that the respondents might be more receptive to this arrangement, and might be more willing to disclose opinions that might be less socially-desirable to the opposite sex if this was maintained (Padfield & Procter, 1996).

Interviews took place between May 2017 and February 2018 and lasted anywhere from 45 minutes to four hours. Together, Daniel and I interviewed a total of 18 veterans, nine men and nine women. Interviews were conducted in person or over Skype video conferencing. To protect their privacy, each respondent was assigned a random pseudonym. Respondents were compensated for their time with a $15 Amazon gift card. By conducting in-depth interviews, I aim to uncover the costs and benefits that individuals use to evaluate substance use at each stage in the military life course. I am aware that asking individuals to recall their patterns of use in the past may be difficult, and subject to recall bias. However, I

[47] After conducting an interview, Danny and I also gave a copy of our study business card and emailed a follow up to the respondent to pass on our information to veteran friends who might be interested (snowball-sampling).

incorporate a variety of time-lining[48] techniques into the interview protocol in order to help provide respondents reference points during the interview process that can be used to help them recall substance use patterns in the past. While this does not eliminate recall bias, it does help minimize it.

I organized the interview protocol around three key themes – identity, gendered experiences (if any), and substance use, in addition to basic demographic and background questions. My goal in asking these types of questions are threefold; 1) to gather the deeper motivations and reasons behind substance use that a survey cannot capture, 2) to provide a greater context for my survey results, and 3) to provide a better picture of the experience of military service and the effects it has on the individual. Typical identity questions included, "*When did you make the decision to join the military, what made you want to join?*", "*Was there ever a time when you finally felt that you had become a soldier/sailor/airman/marine?*", and, "*How do you feel about being a veteran?*" Typical gender-experience questions included, "*Do you think your experience in the military was affected by your gender?*", and "*What do you think about women serving in the military?*" Finally, typical substance use questions included, "*What were the rules, official or unofficial, about smoking/drinking/drug use in the military? How were they enforced?*", "*Did you use any kind of substance (prescription/marijuana/alcohol/tobacco) before/during/after service? Why?*", and "*What was your opinion about alcohol or drug use before you were in the military? While you were in? After?*"

Completed interviews were transcribed and coded by topic using an open-coding method. The first round of coding was to observe general patterns, important ideas, or useful quotations. The second round of coding was more analytical. Here I analyzed the transcriptions primarily for themes or subthemes, such as "cost of alcohol use" or "benefit of marijuana". Though the interviews are qualitative data, I treat them in a quasi-quantitative manner when trying to assess comparisons across gender, or to

[48] This includes asking interview questions in a chronological order and guiding the respondent to follow that timeline. The interview was divided into three sections; before service, during, and after. Daniel and I included several timeline questions throughout each section, such as, "what was your first job?", or "when did you enlist?" in order to help respondents pinpoint a precise moment in time as we were interviewing. These questions were followed by the vaguer questions (such as, "what were your drinking habits like") that were repeated in each section, in order to help the respondent mentally code them with a specific time period and respond accordingly.

the rates of substance use reflected in the survey. Despite this particular treatment of the data, all interviews are primarily used to descriptively understand *why* veterans used or did not use substances at various stages in their lives.

I believe that conducting this research on eligible veterans in Washington State is useful for several reasons. First, veterans living in Washington may represent a wider picture of the United States than civilians living in Washington State would, as many of them were likely stationed in Washington from other parts of the country originally, and then chose to continue to reside in state after exiting the military. Second, Washington (especially Seattle) has fairly liberal drug policies, including legalized recreational marijuana, clean needle exchanges, and is currently proposing the country's first safe-injection sites for heroin users (Greenstone, 2017). With this background, it may be easier to get veterans talking about drug use, since they may feel like they are in more of a safe space to discuss it (decreasing social desirability bias). Finally, Washington is home to seven military bases, including Joint Base Lewis-McCord in the south Sound (Army/Air Force), NAS Whidbey Island (Navy), and Fairchild (Air Force), making it a prime location to study military personnel (Bases in the State of Washington, 2018).

In total, Daniel Nolan and I interviewed 18 veterans. I interviewed nine women; seven in person and two via Skype video-calling. Daniel interviewed the remaining nine men, all in person. Each interviewee was administered a brief demographic survey following the interview to complete. All respondents completed the demographic survey except for one, Wendy. Based on the data from the 17 veterans who elected to complete the survey, the following demographic information is obtained.

*Female Interview Demographics*

I interview a total of nine female veterans; seven in person and two via Skype video-calling. All female veterans completed the demographic survey except for one, Wendy. Based on the data from the eight who elected to complete the survey, the following demographics are obtained. The average age of the female interviewees is about 31 years old, with the oldest woman being 36 and the youngest being 26. Four of the female veterans were born on the west coast of the US (two in Washington State), two on the east coast, one in the Rocky Mountain region, and one was born outside the US (Taiwan). Four of the

women are White/Caucasian, one is East Asian, one is Hispanic/Latina, and two are of mixed descent (one is Native American and White, the other is East Asian and White). All eight women identify as heterosexual.

When asked about their class (based on income and education) growing up, one is self-described as upper-middle class, three are middle-class, two are working class, one is low-middle class, and one wrote in "poor people". Two are unemployed and not searching for work, one is unemployed and searching but also a student, three are students, and two are employed. Three identify that they are employed full time (one of whom denoted student in the employment section). In terms of household income, one interviewee marked less than $15,000 per year, two indicate $15-34,000, two indicated $65-79,000, one marked $80-99,000, and one marked above $99,000 per year. The sample of women is well-educated, with only two women not holding a college degree, though they both have completed some college. Two women completed 2-year or Associates degrees, three completed four-year degrees, and one has a Master's degree.

Of the eight women who completed the demographic survey, four are currently married, two are divorced, one has never been married, and one is currently cohabiting with her boyfriend. Half the sample has children. Two women self-identify as "very liberal", two as "liberal, two as "neither liberal nor conservative", and one wrote in "common sense". Interestingly, based on the interviews themselves, all nine women except one have had some sort of history of trauma in their past – four have parents who passed away prior to or immediately following their entrance into the military (one after she exited the service), two experienced homelessness prior to service, two indicated that their mother's suffered from mental health issues (some respondents suffering verbal abuse as children), three expressed that their fathers are alcoholics, and four spent significant time taking care of seriously ill family members. One interviewee's father was in and out of prison, one grew up with a single mother, and one had her home burned down immediately before leaving for basic training.

Male Interview Demographics

Daniel Nolan interviewed a total of nine male veterans, all in person. The average age of the male interviewees is about 31 and half years old, with the oldest man 37 years old and the youngest is 27, similar to the women. Four of the male veterans were born on the west coast of the United States (two in Washington State), four in the Midwest, and one in the Rocky Mountain range. The male sample is less racially diverse than the female sample. All but one male veteran is White, with the remaining veteran being mixed White and Hispanic/Latino. Eight men identify as heterosexual, and one identifies as bisexual.

When asked to report their class growing up, two marked low-middle class, three marked working class three selected middle class, and one marked upper-middle. One man marked unemployed but not searching for work, three report that they are employed full time, two describe themselves as self-employed full time, one marked employed full time and a student, and two indicate that they are part-time employed. The household income levels vary from $$35-49,000 per year to over $99,000 per year. Two men report in the $35-49,000 range, two in the $50-64,000 range, two in the $65-79,000 range, one in the $80-99,000 range, and two above $99,000 per year. The education of the male veterans is quite similar to that of the women, with three completing some college, two completing a two-year or AA degree, two completing a four-year degree, and two graduating with Master's degrees.

Of the nine male veterans, six of them are currently married, one is divorced, and two are cohabiting with their significant others'. Five have children (one has two step-children and a biological child), and the other four do not have kids. The political orientations of the men are much more diverse than the women in the sample. One man identifies as very liberal, two as liberal, one as slightly liberal, two as neither liberal nor conservative, one as slightly conservative, one as conservative, and one as neither liberal nor conservative and slightly conservative. Just like the women, the majority of the men experience some sort of history of trauma in their past –one experienced homelessness prior to service, one indicated that their mother suffered from mental health issues, one expressed that his father is an alcoholic, and two had brothers that were addicted to drugs, both of whom later died (one committed

suicide). One male veteran's father has anger problems, several grew up with divorced parents, two have abusive fathers (one was a step-father), and one respondent's brother was in and out of prison.

## RESULTS & DISCUSSION

### Descriptive Statistics

The purpose of the quantitative data for this article is to paint a descriptive picture of substance use in the military, using retrospective data from a survey that I created. In order to achieve this goal, I have created several descriptive tables and charts[49]. Each table assesses a variety of important characteristics of the sample, including basic demographic information, stress variables, military descriptive variables, and of course, substance use variables. As the interview data is drawn from roughly the same pool as the survey respondents, I believe it is essential to be able to compare and contrast the data from both the quantitative and qualitative portions of this study. This comparison will allow me to address some aspects of social desirability bias, and address to some degree if the sample of interviewees is similar or much different from those taking the survey.

The survey captures the presented demographic information at one point in time—when the respondent elected to take the survey, which is after they have exited the military. Table 1 presents the basic demographics of the survey respondents.

Table 1: Descriptive Statistics for Basic Demographics

| **Variable** | **Reported at Time of Survey (After Service)** | | |
|---|---|---|---|
| | *Percent* | *Mean (median if mean is not calculable)* | *S.D.* |
| **Age at time of Survey** | -- | 31.45 | 4.98 |
| **Gender** (N=110) | | | |
| *Man* | 69.09 | -- | -- |
| *Woman* | 30.00 | -- | -- |
| *Transman* | .91 | -- | -- |
| **Race** (N=109) | | | |
| *White* | 75.45 | -- | -- |

[49] With the assistance of my research partner, Alice Lazzar-Atwood

| | | | |
|---|---|---|---|
| *Non-White* | 23.64 | -- | -- |
| **Sexual Orientation** (N=110) | | | |
| *Homosexual* | 1.82 | -- | -- |
| *Bisexual* | 4.55 | -- | -- |
| **Marital Status** (N=110) | | | |
| *Never Married* | 11.82 | -- | -- |
| *Never Married but Cohabiting* | 9.09 | -- | -- |
| *Married* | 56.36 | -- | -- |
| *Separated* | 4.55 | -- | -- |
| *Divorced* | 18.18 | -- | -- |
| **Employment** (N=109) | | | |
| *Employed* | 59.63 | -- | -- |
| *Unemployed* | 40.37 | -- | -- |
| **Status of Employment** (N=65)* | | | |
| *Full Time* | 75.38 | -- | -- |
| *Part time* | 24.61 | -- | -- |
| **Highest Degree Achieved** (N=110) | | AA/2-year degree | |
| *High School Graduate* | 3.64 | -- | -- |
| *GED* | 2.73 | -- | -- |
| *Some College* | 30 | -- | -- |
| *AA or 2-year Degree* | 26.36 | -- | -- |
| *4-year Degree* | 28.18 | -- | -- |
| *Graduate or Professional School* | 9.09 | -- | -- |
| **Currently Enrolled in College** (N=110) | 52.73 | -- | -- |
| **Children** (N=110) | 58.18 | 1 | -- |
| **Household Income (per year)** (N=107) | | 30,000 to 79,000 | -- |
| *$29,000 and Under* | 21.50 | -- | -- |
| *$30-79,000* | 49.53 | -- | -- |
| *$80,000 and Over* | 28.97 | -- | -- |
| **Region Lived when 16** (N=107) | | | |
| *West Coast* | 62.62 | -- | -- |
| *Southwest* | .93 | --- | -- |
| *Rocky Mountains* | 4.67 | -- | -- |
| *Midwest* | 12.15 | -- | -- |
| *South* | 11.21 | -- | -- |
| *Northeast* | 6.54 | -- | -- |
| *Germany* | .93 | -- | -- |

*Unemployed respondents are responsible for the low N here

At the time that the survey is administered, the mean age of respondent is 31.45 with a standard deviation of 4.98. About 69% of my sample identify as men, 30% as women, and .91% identifies as Transmen. The majority of the sample identifies as heterosexual, however 1.82% identify as homosexual and 4.55% identify as bisexual. While the bulk of the respondents are White, 23.64% identify as a race/ethnicity other than white, including Native American, Hispanic/Latinx, Asian, African-American,

and mixed race. The survey asks the respondents to identify where they lived at age 16 to get an idea of cultural norms they may have been brought up amongst during a key point in their life course. The bulk of the sample were living on the west coast at age 16 (62.62%), followed by the Midwest (12.15%), South (11.21%), Northeast (6.54%), Rocky Mountains (4.67%), and Southwest (.93%). Finally, one respondent lived in Germany when they were 16 (.93%).

Over half of the sample are employed (59.63%) while 40.37% are unemployed (though it is important to note that some of these individuals are not actively seeking work). Three-quarters of the working respondents are full time with the remaining 25% working part time. Over half of the respondents are currently enrolled in a college program. The sample is highly educated, with the median highest education achieved being an AA or other 2-year degree (26.36%). Graduate or professional degrees have been completed by 9.09% of the respondents, 30%% have an AA or two-year degree, and 28.18% have a four-year degree. Merely 3.64% only obtained a high school diploma, and 2.73% have completed the GED. The average household income range is diverse, but the majority of respondents' report that their household earns above $30-79,000 annually (49.53%). The next most prevalent income range is $80,000 and greater (28.97%), with the lowest number of respondents reporting in the $29,000 and under range (21.50%).

The majority of survey respondents are married (56.35%), but 18.18% are divorced, 4.55% are separated, 11.82% are never married, and 9.09% are cohabiting and have never married. Over half of the respondents have children (58.18%), with the mean number of kids being one.

Table 2 is characterized by general stress-related variables. These questions are asked, retrospectively, across the three time frames (excluding arrests); before service, during service, and after service. I also include T tests of the difference between each life course stage (for relevant variables), in order to evaluate if the observed differences are statistically significant for this sample. As the sample size is low (110 respondents in the survey), it is likely that observed statistically significant differences are significant for the greater population.

Table 2: Descriptive Statistics for Stress Variables

| Variable | Prior to Service (Civilian) | T Test of difference between Prior and During | During Service | T Test of difference between During and After | After Service (Veteran) | T Test of difference between Prior and After |
|---|---|---|---|---|---|---|
| | *Percent* | | *Percent* | | *Percent* | |
| **Arrests** | (N=109) | | | | (N=110) | -1.9083 (ANOVA value) |
| *Never* | 82.73 | -- | -- | -- | 90.91 | |
| *Once* | 10.91 | -- | -- | -- | 5.45 | |
| *2-3 times* | 2.73 | -- | -- | -- | 2.73 | |
| *4-5 times* | 1.82 | -- | -- | -- | .91 | |
| *6+* | .91 | -- | -- | -- | -- | |
| **Military Discipline** | | | (N=109) | | | |
| *Never* | -- | -- | 66.36 | -- | -- | -- |
| *Once* | -- | -- | 23.64 | -- | -- | -- |
| *2-3 times* | -- | -- | 9.09 | -- | -- | -- |
| Was Sexually Harassed | N=106 21.82 | 0 | N=106 21.82 | -3.4671** | N=106 9.09 | -3.2705** |
| Was Sexually Assaulted | N=106 13.64 | -2.0298** | N=106 6.36 | -1.9139 | N=106 1.82 | -3.5375** |
| Was Diagnosed with Anxiety | N=108 5.45 | 5.4824** | N=108 32.73 | 1.1222 | N=108 39.09 | 6.4777** |
| Was Diagnosed with Depression | N=109 5.45 | 4.9087** | N=109 29.09 | 1.3776 | N=109 36.36 | 6.2423** |
| Was Diagnosed with PTSD | N=108 .91 | 3.8265** | N=108 12.73 | 4.1744** | N=108 32.73 | 6.8777** |
| Was Diagnosed with TBI Ever | -- | -- | -- | -- | N=109 19.09 | -- |
| Was Homeless (N=109) | 10.91 | -- | -- | -- | 15.45 | 1.043 |

*p<0.05, **p<0.01

Looking at the data in Table 2, it appears that number of arrests decreases from before service to after, as 82.73% report never having been arrested prior to service and 90.91% report no arrests after exiting, though this was not found to be a statistically significant difference at p<.05. Almost 11% of the sample was arrested once prior to service, while only 5.45% have been arrested once after. Comparing

any arrests to never arrested, 15.46% had been arrested prior to serving, while only 9.09% have been arrested after serving.

Military discipline rate is asked in place of arrests for the during-service time period. While the majority of the sample has never experienced military discipline during their service (66.36%), 32.73% have. It is interesting to see that military discipline was much higher than arrest rates before or after service. As military discipline can encompass a wide variety and degree of discipline, it's hard to assess the precise meaning of this relatively high rate of discipline.

Sexual harassment prior to service is 21.82%, and remains at that level during service, with a sharp decrease after service (9.09%); the difference between during service and after being a statistically significant decrease at $p< 0.01$. This is interesting, as it is assumed that sexual harassment is high, at least for women, during service, yet the percentage is the same as prior to service. The decrease in sexual harassment between before service and after is also a statistically significant decrease at $p<0.01$. Sexual assault is also higher prior to service (13.64%), decreases during service (6.36%) (at a statistically significant level) and then drops substantially after service (1.82%), also at a highly significant level. Given the current media coverage on the high levels of sexual assault in the military, it is interesting to find that it appears lower than before service. It is possible that individuals before service were also in environments more-prone to sexual assault, including college campuses, which could lead to the increased rate before. The significant drop after service may represent removal from more previously threatening environments and a new, more stable, home life after exiting the military.

Diagnoses of anxiety and depression change considerably over the life course. Only 5.45% of individuals were diagnosed with anxiety prior to service, compared to a staggering 32.73% during service and 39.09% after service. These numbers may be an underestimate as well, as often anxiety goes undiagnosed. The increase from before service to during service is statistically significant, though the difference between during and after is not. The increase in anxiety from before service to after service is found to be significant at $p<0.01$. Depression follows a similar pattern to anxiety, though the increase after service is larger. Prior to service diagnosed depression rests at 5.45%, with an increase to 29.09%

during service (significant) and 36.36% after service (not significant). The change from before service to after service is a statistically significant increase as well. While less than one percent of individuals were diagnosed with Post-Traumatic Stress Disorder (PTSD) prior to service, almost 13% were diagnosed during (a significant increase) and almost 33% (also significant) were diagnosed after exiting the service. These increased rates of depression, anxiety, and PTSD may indicate the high degree of mental stress placed on individuals during service, and how this bleeds over into life after exiting the military. The survey only asks respondents if they were ever diagnosed with Traumatic Brain Injury once, rather than across the life course. Overall, 19.09% of respondents have been diagnosed with TBI at some point in their life.

The final variable represented in Table 2 is whether or not the respondent was ever homeless before or after service. Interestingly, rate of homeless seems to increase after service, with 10.91% indicating homelessness prior to service and 15.45% indicating homelessness after exiting the service, however this is not found to be a statistically significant increase, indicating that there is no change in rates of homelessness from before to after service.

Table 3 portrays the military-specific variables. These questions are asked retrospectively, but only at one point in time.

Table 3: Descriptive Statistics for Military Variables

| Variable | Percent | Mean | S.D. |
|---|---|---|---|
| **Age Enlisted (N=108)** | -- | 20.82 | 4.04 |
| **Age Exited Service (N=106)** | -- | 27.08 | 5.06 |
| **Branch of Service** (N=110) | | | -- |
| *Army* | 43.65 | -- | -- |
| *Navy* | 23.02 | -- | -- |
| *Marines* | 5.56 | -- | -- |
| *Air Force* | 10.32 | -- | -- |
| *Coast Guard* | 4.76 | -- | -- |
| *Reserves or National Guard* | 12.7 | | |
| **Mobilized from Reserves (N=109)** | 16.36 | -- | -- |
| **Enlisted (N=110)** | 87.27 | -- | -- |
| **Length of Service (N=107)** | | 6.38 | 3.01 |
| *Under 5 Years* | 36.45 | | |
| *More than 5 years* | 63.55 | | |
| **Deployed (N=108)** | 71.82 | -- | -- |
| **Deployed to Combat Zone (N=108)** | 66.36 | -- | -- |
| **Combat Exposure Index (N=105)** | -- | 3.50 | 2.10 |
| **Discharge Status (N=109)** | | | |
| *Honorable or Under Honorable Conditions* | 88.52 | -- | -- |
| *Medical Discharge* | 2.46 | -- | -- |
| *Other-than-Honorable Discharge* | .8197 | -- | -- |
| *Miscellaneous/Other* | 8.21 | -- | -- |
| **Transition Index (N=106)** | -- | 7.44 | 2.38 |

The mean age of enlistment for this sample is 20.82 years. The mean age exiting the service is 27.08 years old. The most common branch of service in the sample is the Army (43.65%), followed by the Navy (23.03%), Air Force (10.32%), Marines (5.56%), and Coast Guard (4.76%). In addition, 7.14% served in the Reserves and 5.56% served in the National Guard. The branch make up for these individuals is .91% Air Force Reserves, .91% Air National Guard, 8.18% Army National Guard, 10.91% Army Reserves, .91% Coast Guard Reserves, and 5.45% Navy Reserves. Of the Reserves and National Guard components, 16.36% were mobilized to active duty during their service. Just over 12% of the sample served in the military as an officer. Length of service averages just over 6 years (with 63.55% serving more than 5 years), and 71.82% of the sample has been deployed. Sixty-six percent of those surveyed were deployed to a combat zone, and the mean score on the Combat Exposure Index is 3.503. The

majority of the sample received an Honorable discharge status (88.52%), 2.47% received a medical discharge, .8197% have an Other-Than-Honorable status, and the remaining 8.21% have miscellaneous other statuses. No veterans in the sample received a Dishonorable Discharge status. In terms of the transition scale, which identifies ease of transition into the civilian world from military service, the mean score is 7.444 on a scale of 0-14, indicating that the transition process is neither hard nor easy for most veterans.

The final table, Table 4 is comprised of all the substance use variables. These questions were asked retrospectively across all three stages of the military life course. I also include T tests of the difference between each life course stage (for relevant variables), in order to evaluate if the observed differences are statistically significant for this sample. Again, since the sample size is low (110 respondents in the survey), it is likely that observed statistically significant differences are significant for the greater population.

Table 4: Descriptive Statistics for Substance Use Variables

| Variable | Prior to Service (Civilian) | | T Test between Prior & During | During Service | | T Test between During & After | After Service (Veteran) | | T Test between Prior and After |
|---|---|---|---|---|---|---|---|---|---|
| | % / N | Mean/ St. D | | % / N | Mean/St. D | | % / N | Mean/St. D | |
| **Alcohol Index** | -- / 109 | 1.81/1.14 | 5.8965** | -- / 110 | 2.51/1.09 | -14.499** | -- / 110 | 1.40/.078 | -3.5214** |
| **Marijuana Index** | -- / 107 | 1.93/2.16 | -8.9308** | --/ 108 | .150/.78 | 8.4324** | --/ 110 | 1.97/2.33 | 0.26678 |
| **Ever Tried Hard Drugs** | 12.73 / 107 | -- | -1.8272 | 6.36/ 109 | -- | 1 | 9.09/ 109 | -- | -0.94232 |
| **Type Hard Drugs Tried** | -- / 106 | | | --/ 110 | | | --/ 108 | | |
| *Cocaine* | 6.25 | -- | | .86 | -- | | 4.84 | -- | |
| *Crack* | 2.35 | -- | | -- | -- | | -- | -- | |
| *Ecstasy/MDMA/Molly* | 4.69 | -- | | 1.72 | -- | | 1.61 | -- | |
| *LSD/Acid* | 4.69 | -- | | -- | -- | | .81 | -- | |
| *Meth* | .78 | -- | | .86 | -- | | -- | -- | |
| *Mushrooms* | 8.59 | -- | | 2.58 | -- | | 6.45 | -- | |
| *Opium* | .78 | | | -- | -- | | -- | -- | |
| *Spice* | .78 | -- | | -- | -- | | .81 | -- | |
| *Salvia* | -- | -- | | .86 | -- | | -- | -- | |
| *Heroin* | -- | -- | | .86 | -- | | .81 | -- | |
| **Type Hard Drugs Regl.** | --/ 107 | -- | | --/ 110 | | | --/108 | | |
| *Cocaine* | 1.81 | -- | | -- | -- | | -- | -- | |
| *Mushrooms* | .91 | -- | | -- | -- | | .91 | -- | |
| *Ecstasy/MDMA/Molly* | .91 | -- | | .91 | -- | | -- | -- | |
| *Meth* | -- | -- | | .91 | -- | | -- | -- | |
| *Spice* | -- | -- | | -- | -- | | .91 | -- | |
| **Prescription Drugs Tried** | 15.45/ 108 | -- | -2.7476** | 5.45/ 110 | -- | 0.33197 | 6.36/ 109 | -- | -2.7528** |
| **Prescription Drugs Regl.** | 3.64 / 107 | -- | 1 | 1.82/ 110 | -- | 0.57558 | 2.73/ 109 | -- | -0.44554 |

*p<0.05, **p<0.01

The changing scores on the alcohol index provide interesting insight into attitudes toward alcohol and the military. Prior to service the average score is 1.81 out of 5 (with the highest meaning high rates of use), indicating relatively low levels of alcohol use. During service this increases to 2.51 (a statistically significant increase), and after drops down below use before service, with a score of 1.40 (also significant). Overall, I find that the decrease in alcohol use from before service and after service to be statistically significant at $p<0.01$. This supports the idea that alcohol use increases during service, and once removed from the environment (be it stress, the culture, etc.), decreases substantially, and to lower amounts than even before service.

The marijuana index is on a scale from 0-6, with the highest score indicating high rates of marijuana use. Prior to service marijuana use is about 1.93, which drops substantially (and significantly) during service to .150. This is most likely due to the military's zero-tolerance policies on drug use. After service, marijuana use increases significantly back to about the same rate prior to service, 1.97. In fact, I find that there is no statistically significant difference between rates of marijuana use before and after service. This may imply that veterans are either resuming a habit they enjoyed prior to service, or are perhaps they are using marijuana as a mechanism to handle stress after having left the service (as indicated by the high levels of depression, PTSD, and anxiety after service in Table 2).

Based on the descriptive statistics in the table, it appears that hard drug use is more prevalent before service (12.73%), dips during service (6.36%), and increases after service (9.09%), although not to the level it is prior to joining the military. Despite these observations, none of the differences were found to be statistically significant. These trends may be influenced by a variety of factors, including age, the military's zero-tolerance policy on drug use while serving, and stress, though it is likely that the extremely low number of individuals using hard drugs is contributing to the lack of significant differences. When taking *type* of hard drug use into account, it appears the majority of individuals experimented with cocaine prior to service (6.25%), followed by several psychedelic drugs; Ecstasy/Molly/MDMA (4.69%), LSD/Acid (4.69%), and Mushrooms (8.59%). Experimentation with more serious drugs like opium (.78%), crack-cocaine (2.35%) and meth (.78%) are very low. One

individual also experimented with spice, also known as synthetic marijuana, prior to service (.78%). As for hard drugs *regularly* used prior to service, cocaine (1.81%), mushrooms (.91%) and Ecstasy/Molly/MDMA (.91%) were the only drugs used, and at very low rates. It appears that drug use prior to service, is low and primarily experimental. The experimental drugs of choice seem to be psychedelic in nature.

Hard drug use during service is even slighter than before. Again, the primary drugs tried and regularly used are psychedelics, with 1.72% trying Ecstasy/MDMA/Molly and .91% regularly using it, 2.58% trying mushrooms, and .86% trying salvia. Cocaine was tried at .86% during service, along with Meth, and Heroin. Meth was the only drug other than Ecstasy/MDMA/Molly used regularly during service, at .91%. Despite current news coverage on the spice epidemic in the military, none of the respondents in this sample used spice during their service.

After exiting the military, the primary drugs tried are cocaine (4.84%) and psychedelic drugs (mushrooms at 6.45%, ecstasy/MDMA/molly at 1.61%, an LSD/Acid at .81%). One individual tried spice (.81%), and only one tried heroin (.81%). In terms of regular use, mushrooms are used regularly at .91% and spice is used regularly at .91%. Despite the image of drug use being rampant among veterans, my sample continues to have relatively low drug use after service, and the drugs being used seem to be for experimentation and are primarily party and/or social drugs. This implies that veterans who are heavily using drugs may be from different eras of service other than the post-9/11 era, which this study examines.

Recreational use and abuse of prescription narcotics is another area in which the media has painted a picture of rampant drug use amongst veterans. In this sample, 15.45% of respondents have tried prescription drugs prior to service, with 3.64% regularly abusing them. During service the numbers drop to 5.45% trying prescription narcotics recreationally (a statistically significant difference) and only 1.82% regularly abusing them (not significant). Finally, after service the numbers increase from during (not significant), but are lower than prior to service, with only 6.46% trying (a statistically significant difference compared to before service) and 2.73% regularly abusing prescription drugs (not significant). Again, these findings are surprising. While prescription abuse does exist, it is much lower than many may

have expected. It is important to once again point out that the very low numbers of prescription drug abuse, particularly for regular use, may be contributing to the lack of statistical significance in differences across the life course.

*Explaining Substance Use*

Not pictured in the tables, our survey also asked the respondents about their reasoning for trying or regularly using the various substances. Individuals were asked to check all that apply for these questions. The results can be visualized in the following charts.

Figure 1: Reasons for Alcohol Use Across the Life Course

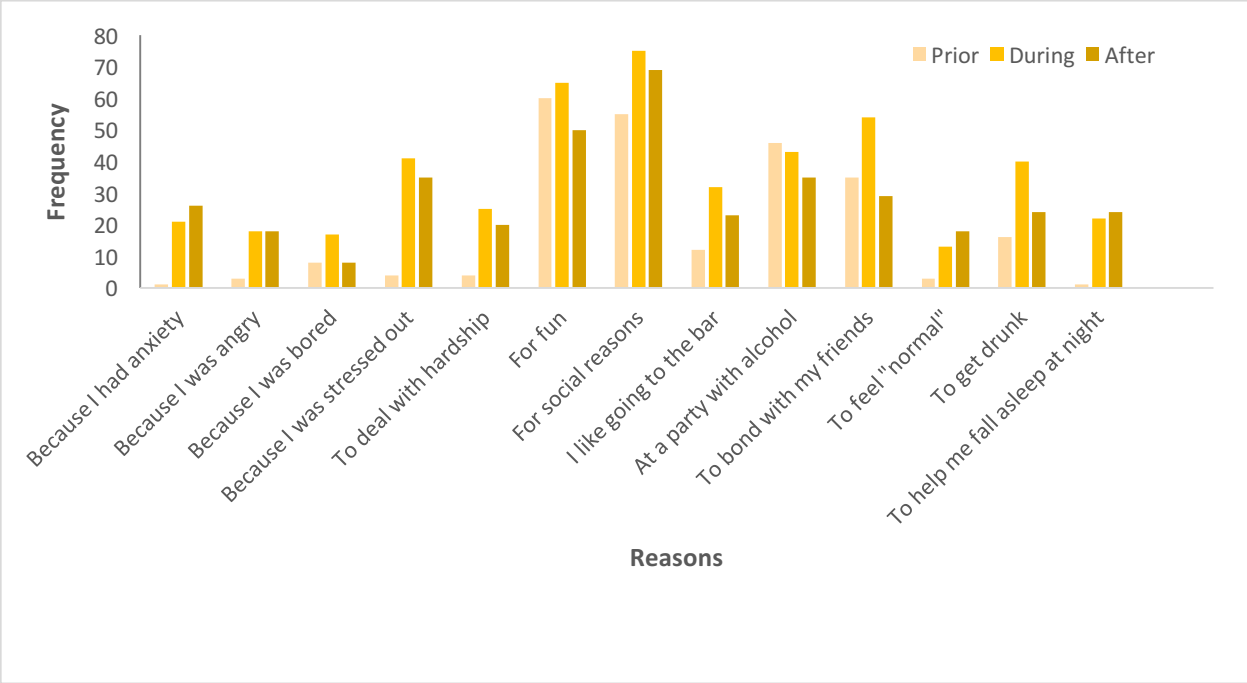


Figure 2: Reasons for Marijuana Use Across the Life Course

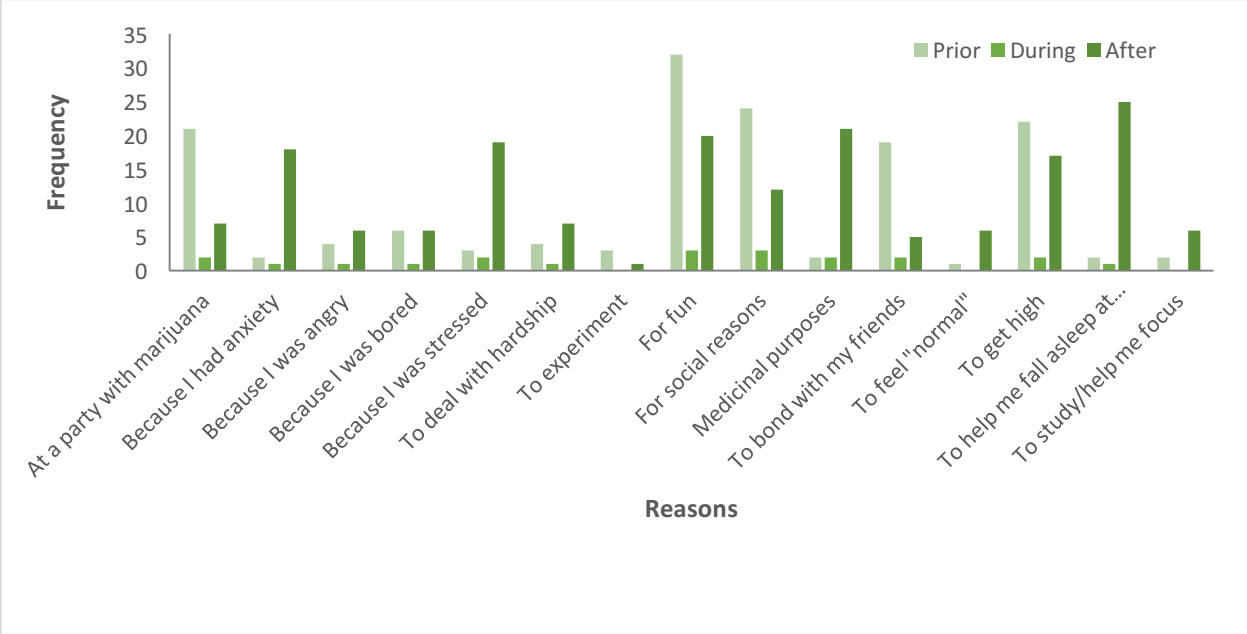



Figure 3: Reasons for Hard Drug Use Across the Life Course

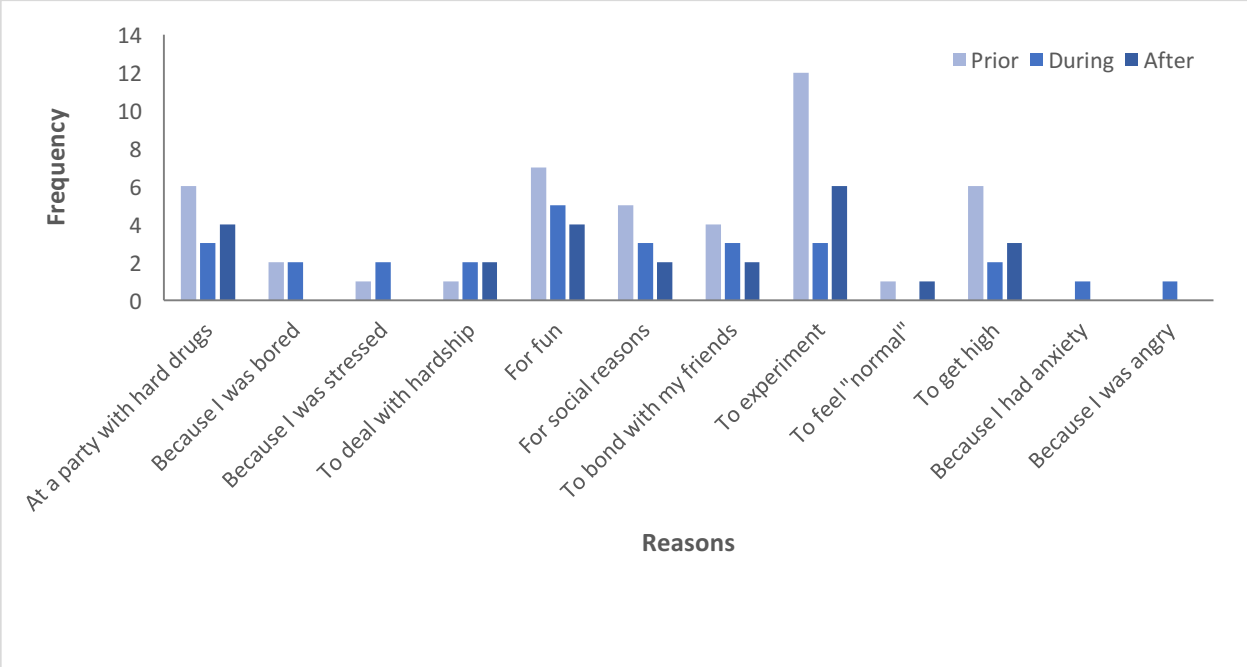
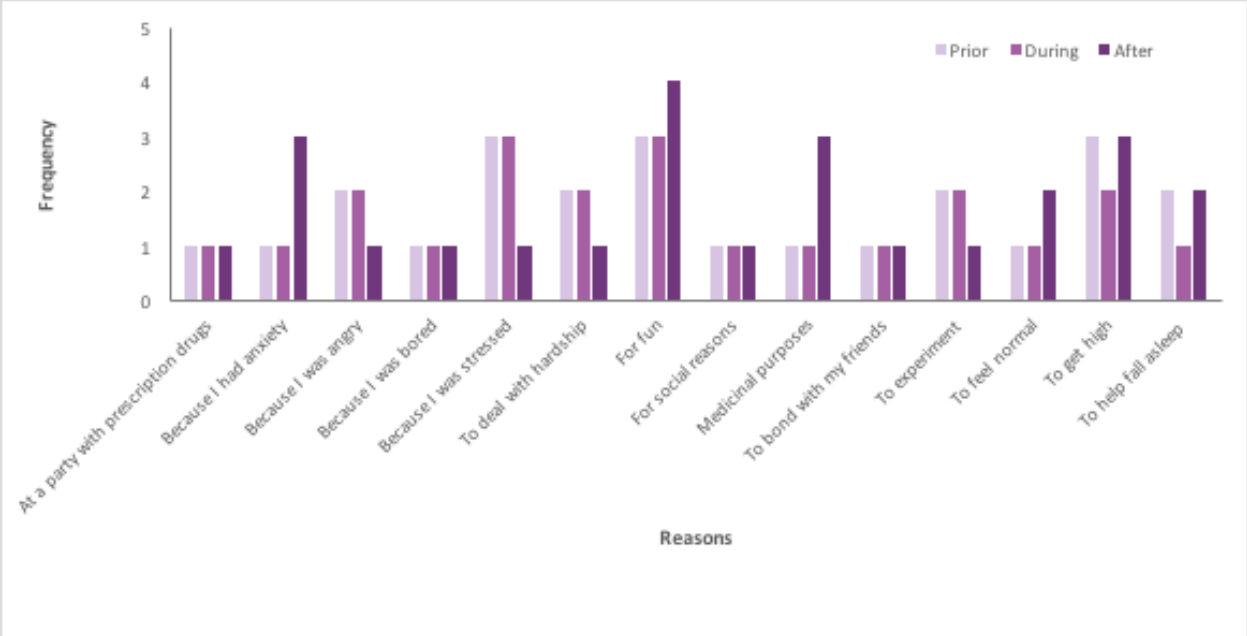


Figure 4: Reasons for Prescription Drug Misuse Across the Life Course




As seen in the charts, the primary reasons for using alcohol prior to service are primarily social; "for fun" (18.35%), "for social reasons, visiting with friends" (16.21%), accessibility in "being at a party where alcohol was served" (14.07%), and "to bond with friends" (10.40%). During service these reasons were maintained; "for fun" dropping to 11.64%, "for social reasons, visiting with friends" landing at 13.64%, and, "to bond with my friends" coming in at 9.82%. Last, alcohol use after service mimicked the reasons prior to service, with "for fun" representing 18.29%, "for social reasons, visiting with friends", at 16.16%, "being at a party where alcohol was served" at 14.02%, and "to bond with my friends" at 10.67%. Answers that were not popular across any stage are the stress-related reasons, like drinking due to anxiety, stress, boredom, or because life is difficult. While these reasons did increase during service, they dropped back down after, and were always under 4.5%, though "because I was stressed out" hit 7.45% during service.

Reasons for using marijuana prior to service were identical to the reasons for using alcohol – "for fun" (13.48%), "for social reasons, visiting people" (10.43%)-- although "to get high" also scored high, at

9.57%. During service marijuana use is very low (81.54% said they never used), however the reasons for use are across the board. The most common reasons re still “for fun” (2.31%), and “for social reasons, visiting with people” (2.31%), followed by “to get high” (1.54%), “to bond with my friends” (1.54%), “at a party where marijuana was used” (1.54%), and “because I was stressed” (1.54%). After service some more unique trends appear. The most common reasons for using marijuana is “to help me fall asleep at night”, with 8.40%, followed by “for fun” at 8%, “medicinal purposes” at 7.20%, and “because I was stressed” at 6%. “Because I had anxiety” also ranks toward the top of reasons, with 5.40%. It seems that marijuana, rather than alcohol, is used as more of a coping mechanism after service.

As assumed, the primary reason behind hard drug use prior to service is, “to experiment” (7.64%), followed by, “for fun” (4.86%) and accessibility; being at a party where hard drugs were present (4.17%). During service the primary reasons for use are “for fun” (3.70%), followed by “social reasons, visiting with people”, “to bond with my friends”, “To experiment”, and “at a party where drugs were present”, all at 2.22%. Finally, after service, hard drug use is primarily used “to experiment” once again (4.72%). “For fun”, and “at a party where drugs were present” were also noteworthy, at 3.15% each. Overall, hard drug use is low throughout the military life course, and is primarily attributed to experimentation or social reasons.

Last are the reasons behind prescription drug abuse. For those that abused prescription narcotics prior to service, the key reasons are, “for fun” (6.47%), “to get high” (5.04%), and “at a party where prescription drugs were being abused” (4.32%). During service it is hard to find a real trend in reasons behind use. “To get high”, “medicinal purposes beyond my prescription”, “for fun”, and “because I was stressed”, are all at 2.27%. These reasons are followed by, “because I was angry”, “because my life is hard and I’ve experienced hardships”, “to experiment”, and “to help me fall asleep at night”, each at 1.52%. After exiting the military, prescription drug abuse is primarily used “for fun” (3.03%), “to get high” (2.27%), “medicinal purposes beyond my prescription” (2.27%), and “because I had anxiety” (2.27%). Though rates of use are low, it appears that prescription drug abuse is primarily used for

fun/experimentation before service, for fun and coping during service, and for fun and coping with psychological or physical ailments after service.

*Gender Comparisons*

In addition to the basic demographics, I analyze several cross-tabulations with tests of significance in order to compare gender across the different types of substances. Due to extremely low numbers of respondents *regularly* using hard and prescription drugs I have chosen to exclude these categories from the analyses.

Alcohol

Cross-Tab 1.1: Gender & Alcohol Index Before Service

| **Alcohol Index/ Gender*** | Man $\bar{X}$=1.84 | Woman $\bar{X}$=1.81 | Total |
|---|---|---|---|
| 0-.99 | 24.00% | 15.15% | 21.29% |
| 1-1.99 | 20.00% | 36.36% | 25.00% |
| 2-2.99 | 46.67% | 45.45% | 45.47% |
| 3-3.99 | 6.67% | 3.03% | 5.56% |
| 4-4.99 | 4.00% | 0.00% | 2.78% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=108) | 100.00% | 100.00% | 100.00% |

*T test value of 0.104

Cross-Tab 1.2: Gender & Alcohol Index During Service

| **Alcohol Index/ Gender*** | Man $\bar{X}$=2.60 | Woman $\bar{X}$=2.30 | Total |
|---|---|---|---|
| 0-.99 | 7.89% | 9.09% | 8.26% |
| 1-1.99 | 21.05% | 24.24% | 22.02% |
| 2-2.99 | 30.26% | 45.45% | 34.86% |
| 3-3.99 | 32.89% | 15.15% | 27.525 |
| 4-4.99 | 7.89% | 6.06% | 7.34% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 1.347

Cross-Tab 1.3: Gender & Alcohol Index After Service

| **Alcohol Index/ Gender*** | Man $\bar{X}$=1.43 | Woman $\bar{X}$=1.30 | Total |
|---|---|---|---|
| 0-.99 | 19.74% | 36.36% | 24.77% |
| 1-1.99 | 55.26% | 45.45% | 52.29% |
| 2-2.99 | 25.00% | 15.15% | 22.02% |
| 3-3.99 | 0.00% | 3.03% | 0.92% |
| 4-4.99 | 0.00% | 0.00% | 0.00% |
| 5 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 0.746

Cross-Tabs 1.1-1.3 shows rates of alcohol use (using the alcohol index) for men and women before, during, and after military service. In order to increase read-ability of the graphs, the alcohol index has been grouped into ranges of scores. In this sense, a score of "0" means any score between 0 and .999 on the scale. Based on the graph for alcohol use, it is apparent that the majority of both men and women scored in the 0-2.999 range. In general, it appears that men's and women's alcohol use prior to service are quite similar. More men (24%) scored in the 0-.99 range than women (15.15%), but over 10% of men scored from 3.0-4.99 range, which indicates heavier alcohol use. I conducted a T test to analyze statistical significance for the difference between men's alcohol use and women's alcohol use prior to service. The results of the T test indicate that there is no statistically significant difference between men and women's rates of alcohol use prior to service (value of 0.104). This can likely be explained by age, as previous literature highlighted that adolescent rates of substance use are similar across gender.

During service, similar gendered patterns are present for alcohol use, with men appearing to drink more heavily than women. While 21.22% of women score above a three on the alcohol index, 40.78% of men scored above this level. However, both men and women seem to drink at higher rates during service than they do prior to service. The results of the T test indicate, again, that there is no statistically significant difference between men and women's rates of alcohol use during service (value of 1.347).

After exiting the military, 81.81% of women drink at a level below 2.0, compared to 75% of men. Though men still appear to drink more than women, one women does score higher on the alcohol index than any of the men after service (3.03% compared to 0%, respectively). It is apparent that men drink

more heavily than women both before, during, and after service, but there is great variety across the individuals who are drinking. Looking at the mean score on the alcohol index for men and women, men continually score *slightly* above the women for each stage in the life course; before (1.84 to 1.81, respectively), during (2.60 to 2.30, respectively), and after (1.43 to 1.30, respectively). These means are more visually useful in showing that alcohol intake, across gender, appears to increase greatly during service, and after service it drops much lower than even before service. Once again the T test specifies that the subtle difference between men and women's alcohol use after service that is apparent in the cross-tabulation is not statistically significant (value of 0.746). This indicates that men and women are roughly similar in their alcohol behaviors across the military life course, though the lack of statistical significance may be due to low sample size. It is possible that a larger sample size would reinforce the subtle increase in men's drinking habits compared to women's during and after service.

Marijuana

Cross-Tab 1.4: Gender & Marijuana Index Before Service

| **Marijuana Index/Gender*** | Man $\bar{X}$=2.12 | Woman $\bar{X}$=1.55 | Total |
|---|---|---|---|
| 0-.99 | 50.00% | 62.50% | 53.77% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 27.03% | 15.63% | 23.58% |
| 4-4.99 | 10.81% | 21.88% | 14.15% |
| 5-5.99 | 10.81% | 0.00% | 7.55% |
| 6 | 1.35% | 0.00% | 0.94% |
| Total (N=106) | 100.00% | 100.00% | 100.00% |

*T test value of 1.303

Cross-Tab 1.5: Gender & Marijuana Index During Service

| **Marijuana Index/Gender*** | Man $\bar{X}$=0.22 | Woman $\bar{X}$=0 | Total |
|---|---|---|---|
| 0-.99 | 94.74% | 100.00% | 96.33% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 2.63% | 0.00% | 1.83% |
| 4-4.99 | 2.63% | 0.00% | 1.83% |
| 5-5.99 | 0.00% | 0.00% | 0.00% |
| 6 | 0.00% | 0.00% | 0.00% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*T test value of 2.0279, significant at $p<.05$

Cross-Tab 1.6: Gender & Marijuana Index After Service

| **Marijuana Index/Gender*** | Man $\bar{X}$=1.97 | Woman $\bar{X}$=2.05 | Total |
|---|---|---|---|
| **0-.99** | 56.76% | 54.55% | 56.07% |
| 1-1.99 | 0.00% | 0.00% | 0.00% |
| 2-2.99 | 0.00% | 0.00% | 0.00% |
| 3-3.99 | 17.57% | 21.21% | 18.69% |
| 4-4.99 | 9.46% | 9.09% | 9.35% |
| 5-5.99 | 10.81% | 12.12% | 11.21% |
| 6 | 5.41% | 3.03% | 4.67% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*T test value of -0.161

Cross-Tabs 2.1-2.3 show rates of marijuana use (using the marijuana index) for men and women before, during, and after military service. Just like the alcohol index, the marijuana scores have been categorized into ranges in the same manner (with a score of "0" indicating an index score of below 1, a score of 2 indicating a score below 2 but no lower than 1, etc.).

Prior to joining the military, men's and women's marijuana use is very similar. About 23% of men score a four or above on the marijuana index compared to 22% of women. Despite this similarity, more men score higher on the index overall, with 12.16% scoring a five or above compared to 0 women scoring above a 4.99. The results of the T test indicate that there is no significant difference between men's and women's marijuana use prior to service (value of 1.303). It is possible that the subtle increase for men may become significant with a larger sample size.

During service it is interesting to observe that 100% of women in the sample abstain from marijuana use, compared to 94.74% of men. It's appears that a handful of men are more willing to risk the zero-tolerance policy than women, with 4 men using marijuana. The value of the T test indicates that this is a significant difference (value of 2.0279 at $p<.05$), indicating that men indeed use marijuana at higher rates than women during service.

Finally, marijuana patterns after service are similar for men and women. 56.76% of men compared to 54.54% of women score between a 0 and .99 on the marijuana index. While 94.35% of men fall in the 5.99 and below range, 96.97% of women fall below 5.99. To reiterate, men's and women's marijuana use seems relatively similar before and after service. During service some men were willing to

risk marijuana use, but not many, compared to zero women trying marijuana while enlisted. Looking at the mean score on the marijuana index for men and women, men tend to score much higher than the women for each stage in the life course except for after; before (2.12 to 1.55), during (.22 to 0), and after (1.97 to 2.04). After service men and women score nearly the same. The T test reveals that the difference between men's and women's marijuana use after service is not statistically significant (value of -0.161), reinforcing that men's and women's marijuana use is similar before and after service.

Hard Drug Experimentation

Cross Tab 1.7: Gender & Hard Drugs Tried Before Service

| **Hard Drugs Tried/Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, never tried | 68.89% | 90.32% | 74.38% |
| Yes, tried | 31.11% | 9.68% | 25.62% |
| Total (N=121) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 2.173

Cross Tab 1.8: Gender & Hard Drugs Tried During Service

| **Hard Drugs Tried/Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, never tried | 88.46% | 100.00% | 91.89% |
| Yes, tried | 11.54% | 0.00% | 8.11% |
| Total (N=111) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 3.344

Cross Tab 1.9: Gender & Hard Drugs Tried After Service

| **Hard Drugs Tried/Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, never tried | 81.61% | 80.00% | 81.15% |
| Yes, tried | 18.39% | 20.00% | 18.85% |
| Total (N=122) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 11.38, significant at $p<0.01$

Cross-Tabs 3.1-3.3 show rates of hard drugs *tried* for men and women, before, during, and after military service. For the men, 68.89% abstained from hard drugs prior to service, compared to 90.32% of women. Mushrooms (8.89%) and Cocaine (7.78%) are the most prevalent drugs tried, along with Ecstasy/MDMA/Molly (4.44%), LSD/Acid (5.56%), Crack-cocaine (3.33%) and Spice (1.11%). Only three women tried hard drugs prior to service, with 1 (3.23%) trying cocaine and two trying mushrooms (6.45%). In general, experimentation with hard drugs is more prevalent among the men in the sample than

the women prior to service. I employ the use of chi-squares in order to assess significance in the differences between rates of hard drug experimentation for men and women. The results of the chi-square analysis indicate that there is no statistically significant relationship between gender and hard drug experimentation (value of 2.173).

During service, all 33 women indicate that they abstain from trying hard drugs, compared to 88.46% of men. Of the nine men that did experiment with hard drugs, the majority tried mushrooms (3.85%), followed by Ecstasy/MDMA/Molly (2.56%). Cocaine, Meth, Salvia, and Spice were each tried by one male respondent (1.28%). For both men and women, drug experimentation is a low priority during service, though more men were willing to try than women. Despite these differences, the results of the chi-square analysis indicate that the relationship is not statistically significant (value of 3.344), signifying that indeed drug experimentation during service is low and does not vary across gender.

After service, many more women are willing to experiment with hard drugs than they were prior to or during service (five women compared to three before and zero during). Despite this increase from before service, men still outnumber women in drug experimentation (18.39% compared to 14.29%, respectively). The majority of men try mushrooms (8.05%), followed by Ecstasy/MDMA/Molly (3.35%), Cocaine (3.35%), LSD/Acid (2.3%), and Spice (1.12%). For the women, the majority experiment with cocaine (8.57%), followed by Mushrooms (5.71%). In general, men appear to experiment with hard drugs at higher rates than women, though women's experimentation increases after exiting the military. Interestingly, the results of the chi-square analysis indicate that there is indeed a relationship between gender and hard drug experimentation (value of 11.38 at $p<0.01$). Thus, it is apparent from these data that men are more likely to experiment with drugs after service than women.

Prescription Drug Use

Cross Tab 1.10: Gender & Prescription Drugs Tried Before Service

| **$R_x$ /Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, Never | 81.33% | 90.63% | 84.11% |
| Yes, Tried | 18.67% | 9.38% | 15.89% |
| Total (N=107) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 1.649

Cross Tab 1.11: Gender & Prescription Drugs Tried During Service

| **$R_x$ /Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, Never | 96.05% | 90.91% | 94.50% |
| Yes, Tried | 3.95% | 9.09% | 5.50% |
| Total (N=109) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 1.239

Cross Tab 1.12: Gender & Prescription Drugs Tried After Service

| **$R_x$ /Gender*** | Man | Woman | Total |
|---|---|---|---|
| No, Never | 93.42% | 96.88% | 94.44% |
| Yes, Tried | 6.58% | 3.13% | 5.56% |
| Total (N=108) | 100.00% | 100.00% | 100.00% |

*Chi-square value of 15.153, significant at $p<0.01$

Cross-Tabs 4.1-4.3 show prescription drugs recreationally *tried* for men and women, before, during, and after service. Prior to joining the military, 18.67% of men tried prescription drugs recreationally, compared to 9.38% of women. Despite this apparent difference, according to the chi-square analysis the difference is not statistically significant (value of 1.649), indicating no relationship between gender and prescription drug experimentation. This is likely due to the low sample size and low numbers of respondents actually experimenting with prescription narcotics.

During service rates of prescription drug misuse decreases for men during service, to only 3.95%, but remains at the same level for the women. Again, the chi-square analysis finds no statistically significant relationship (value of 1.239).

Finally, after exiting the service experimentation increases for men, but is still lower than prior to service (6.58%). Only one women experimented with prescription narcotics after exiting the military. It appears men are generally more experimental than women when it comes to prescription drug abuse, though both abuse at relatively low rates. This finding is reinforced by the results of the chi-square test, indicating that a relationship between gender and prescription drug experimentation does indeed exist (value of 15.153 at $p<0.01$).

**Statistical Analysis**

I conduct multiple linear regression on the survey data, using three models for each substance examined that vary across the life course. Each model is constrained by the timing of the variables. Therefore, Model 1 presents all non-time-varying demographic variables (i.e. race) and all retrospective variables in the "prior to service" timeframe. Model 2 presents all variables from Model 1 but adds all retrospective variables in the "during service" timeframe, as well as any military-specific variables like branch of service or the Combat Index. Model 3 includes all variables from Model 1 and 2 but also adds all present-time demographic variables (i.e. number of kids) and the "after service" variables. I also include a number of interaction variables in each model (relevant to the time frame), including Women and Sexual Assault, Women and Sexual Harassment, Women and the Combat Index, Women and PTSD, and Women and Children. Each table additionally controls for substance use variables other than the dependent variable in each model (i.e. in the alcohol use regressions I control for marijuana use, hard drugs tried, and prescription drugs tried). Due to the small number of respondents regularly using hard and prescription drugs I have excluded those two variables from all regression analyses. Results are presented in the tables below.

*Regressions on Alcohol Use*

Table 5.1: Regression Analysis of Alcohol Use across the Life Course

| Independent Variable | Model 1: Prior to Service | Model 2: During Service | Model 3: After Service |
|---|---|---|---|
| Male (omitted Female) | 0.041 | **1.143 | 0.076 |
| White (omitted Nonwhite) | 0.113 | **-0.579 | *-0.609 |
| BEFORE VARIABLES | | | |
| Stress Variables (Prior) | | | |
| *Anxiety Prior* | 0.396 | 0.614 | 1.045 |
| *Depression Prior* | *-1.607 | -1.216 | -0.948 |
| *PTSD Prior* | 0.320 | 0.172 | 2.795 |
| *Sexual Harassment Prior* | -0.216 | -0.119 | -0.087 |
| *Sexual Assault Prior* | 0.822 | 1.088 | -0.319 |
| *Homeless Prior* | 0.503 | 0.448 | 0.473 |
| *Arrests Prior* | 0.494 | 0.571 | 0.433 |
| *Women*Sexual Assault Prior* | -0.771 | 0.048 | 2.109 |
| *Women*Sexual Harassment Prior* | 0.525 | 0.255 | -0.844 |
| Substance Use Variables (Prior) | | | |
| *Marijuana use Prior* | **0.161 | *0.131 | *0.139 |
| *Hard Drugs Tried Prior* | -0.390 | *-1.105 | -0.621 |
| *Prescription Tried Prior* | **0.995 | *0.878 | 0.392 |
| DURING VARIABLES | | | |
| Military Variables | | | |
| *Enlistment Age* | -- | **-0.079 | 0.017 |
| *Combat Index* | -- | -0.055 | -0.011 |
| *Service Length* | -- | 0.012 | 0.051 |
| *Never Mobilized* | -- | -0.196 | 0.163 |
| *Marines* | -- | 0.691 | *1.039 |
| *Navy* | -- | *0.559 | 0.470 |
| *Other (omitted Army)* | -- | 0.165 | *0.639 |
| *Military Discharge Status* | -- | -0.107 | -0.108 |
| Substance Use Variables (During) | | | |
| *Marijuana During* | -- | **-0.328 | -0.157 |
| *Hard drugs tried during* | -- | **1.194 | -0.008 |
| *Prescription tried during* | -- | 0.056 | -0.674 |
| Stress Variables (During) | | | |
| *Anxiety during* | -- | -0.198 | -0.076 |
| *Depression during* | -- | 0.004 | -0.119 |
| *PTSD during* | -- | 0.470 | 0.480 |
| *Sexual assault during* | -- | -0.826 | -0.801 |
| *Sexual harassment During* | -- | 0.288 | -0.209 |
| *Women*Assault During* | -- | NA | NA |
| *Women*Sexual Harassment During* | -- | -0.778 | 0.539 |
| *Women*Combat* | -- | *0.415 | 0.088 |
| *Women*PTSD During* | -- | -0.562 | **-6.306 |
| *TBI* | -- | -- | 0.091 |
| AFTER VARIABLES | | | |
| Demographic Variables (After) | | | |

| | | | |
|---|---|---|---|
| *Age* | -- | -- | 0.026 |
| *Employed* | -- | -- | -0.140 |
| *Student* | -- | -- | 0.346 |
| *Highest education* | -- | -- | -0.438 |
| *Number of Children* | -- | -- | -0.109 |
| *Married* | -- | -- | -0.220 |
| *Never Married* | -- | -- | -0.221 |
| *Cohabiting* | -- | -- | -0.039 |
| *Separated (omitted Divorce)* | -- | -- | 0.347 |
| *Transition Index* | -- | -- | -0.024 |
| *Income 80,000 +* | -- | -- | 0.262 |
| *Income Under $29,000 (omitted 30,000-79,000)* | -- | -- | -0.243 |
| Women*Children | -- | -- | -0.187 |
| Stress Variables (After) | | | |
| *Anxiety After* | -- | -- | -0.482 |
| *Depression After* | -- | -- | -0.263 |
| *PTSD after* | -- | -- | 0.444 |
| *Homeless after* | -- | -- | -0.212 |
| *Arrests after* | -- | -- | 0.024 |
| *Sexual Assault After* | -- | -- | 0.909 |
| *Sexual Harassment After* | -- | -- | 0.821 |
| *Women*Sexual Assault After* | -- | -- | NA |
| *Women*Sexual Harassment After* | -- | -- | 0.978 |
| *Women*PTSD after* | -- | -- | -0.286 |
| Substance Use Variables (After) | | | |
| *Marijuana After* | -- | -- | -0.024 |
| *Hard drugs tried After* | -- | -- | *1.379 |
| *Prescription tried After* | | | 0.902 |

--Not Applicable *** p<.01**p<.05 *p<.10

Tables 5.1 shows the regression coefficients for alcohol use before, during, and after military service. Similar to the patterns observed in the cross-tabulations, women drink less than men. However this is only a statistically significant difference in the During Service model. This is essentially what is observed in the cross-tabulations, where it is identified that men and women drink at roughly similar rates for the most part, though men may be slightly more influenced by the culture of masculinity while serving, thus increasing their rates of alcohol consumption compared to women. The cross-tabulations show that women drink at slightly lower rates than men across service, which is supported by the regression coefficients (aside from their lack of statistical significance). I argue that statistical significance would likely be present with a larger sample size.

It is notable to point out several variables that *are* statistically significant in this analysis. First, marijuana use and experimentation with prescription drugs prior to service are both positively correlated with higher alcohol use. It is likely that those willing to experiment with marijuana and prescription drugs are open to the idea of alcohol consumption as well (social or psychological benefits). Interestingly, a diagnosis of depression prior to service decreases alcohol use. This may be due to the social nature of alcohol.

During service, nonwhite individuals, those serving in the Navy, and those who enlisted at a younger age are more likely to consume alcohol. The increase of alcohol during service for nonwhite individuals could be a coping mechanism (psychological benefit), or to increase bonding amongst the other members (social benefit), while those at younger ages may be more willing to participate in risky behaviors. It is also possible that there is a stronger culture of drinking in the Navy which could encourage alcohol use. Interestingly while marijuana and prescription drug misuse prior to service is positively associated with alcohol consumption during service, hard drug use experimentation prior to service is negatively associated with alcohol. This could indicate that those who experimented with heavier substances prior to service are following the "knifing off" pattern of military service, using the opportunity to get themselves clean and refrain from substance use (where the economic costs are outweighing the benefits). Interestingly, marijuana use *during* service is negatively correlated with alcohol consumption, though hard drug experimentation during service is positively correlated. This could indicate a particular preference for one substance over another. Finally, the interaction variable of women and the Combat Index is significantly positive, indicating that women who have scored higher on the Combat Index are more likely to consume alcohol. This may indicate the use of alcohol as a coping mechanism for women.

Finally, after service the statistically significant variables are nonwhite respondents (positive correlation), marijuana use prior to service, service in the Marines and other branches excluding the Navy and Army, and hard drug experimentation after service. It is possible that the nonwhite respondents are using alcohol as a coping mechanism for hardships experienced due to discrimination or isolation felt

during service (psychological benefits). Those who served in the Marines may have had a greater exposure to combat which could lead to increased rates of alcohol consumption for coping, though this doesn't explain why the Army doesn't have increased rates and why the Other category (Coast Guard, Air Force, and Reserves) has increased rates. It is possible that the lack of statistical significance for the Army is due to low sample size. Last, the interaction variable between women and PTSD diagnosis *during* service is negatively correlated with alcohol consumption—starkly contrasting the finding from model two that women and increased combat lead to increased alcohol consumption. It is a possibility that women who were diagnosed with PTSD during service are medicated and cannot use alcohol with their medication, leading to decreased rates of use.

*Regressions on Marijuana Use*

Table 5.2: Regression Analysis on Marijuana Use across the Life Course

| **Independent Variable** | **Prior to Service** | **During Service** | **After Service** |
|---|---|---|---|
| Male (omitted Female) | 0.559 | 0.345 | 1.496 |
| White (omitted Nonwhite) | 0.727 | 0.010 | -0.961 |
| BEFORE VARIABLES | | | |
| Stress Variables (Prior) | | | |
| *Anxiety Prior* | -0.560 | *0.748 | 0.023 |
| *Depression Prior* | **3.547 | 0.716 | -3.127 |
| *PTSD Prior* | 0.506 | 0.450 | 3.261 |
| *Sexual Harassment Prior* | -0.411 | -0.672 | -0.233 |
| *Sexual Assault Prior* | -0.951 | 0.161 | 1.594 |
| *Homeless Prior* | 0.564 | 0.051 | *-2.663 |
| *Arrests Prior* | 0.233 | -0.024 | 1.013 |
| *Women*Sexual Assault Prior* | 2.013 | 0.360 | -1.600 |
| *Women*Sexual Harassment Prior* | -0.709 | 0.258 | 0.994 |
| Substance Use Variables (Prior) | | | |
| *Alcohol use Prior* | **0.444 | 0.132 | 0.320 |
| *Hard Drugs Tried Prior* | ***3.387 | -0.009 | -0.103 |
| *Prescription Tried Prior* | -0.478 | 0.157 | -1.570 |
| DURING VARIABLES | | | |
| Military Variables | | | |
| *Enlistment Age* | -- | -0.030 | -0.046 |
| *Combat Index* | -- | 0.015 | -0.293 |
| *Service Length* | -- | -0.032 | 0.086 |
| *Never Mobilized* | -- | 0.176 | 0.546 |
| *Marines* | -- | -0.093 | 1.126 |
| *Navy* | -- | -0.039 | -0.068 |

| | | | |
|---|---|---|---|
| *Other (omitted Army)* | -- | -0.126 | -0.313 |
| *Military Discharge Status* | -- | 0.334 | 0.092 |
| Substance Use Variables (During) | | | |
| *Alcohol During* | -- | **-0.252 | -0.166 |
| *Hard drugs tried during* | -- | ***1.421 | 1.652 |
| *Prescription tried during* | -- | 0.183 | -0.826 |
| Stress Variables (During) | | | |
| *Anxiety during* | -- | *0.487 | 1.147 |
| *Depression during* | -- | -0.493 | -0.766 |
| *PTSD during* | -- | 0.451 | -0.244 |
| *Sexual assault during* | -- | -0.010 | 0.071 |
| *Sexual harassment During* | -- | -0.099 | *2.433 |
| *Women*Assault During* | -- | NA | NA |
| *Women*Sexual Harassment During* | -- | -0.025 | **-5.255 |
| *Women*Combat* | -- | 0.108 | **1.443 |
| *Women*PTSD During* | -- | -1.923 | 8.350 |
| *TBI* | -- | -- | *1.201* |
| AFTER VARIABLES | | | |
| Demographic Variables (After) | | | |
| *Age* | -- | -- | -0.255 |
| *Employed* | -- | -- | *1.793 |
| *Student* | -- | -- | **0.386 |
| *Highest education* | -- | -- | -0.850 |
| *Number of Children* | -- | -- | -0.559 |
| *Married* | -- | -- | -1.645 |
| *Never Married* | -- | -- | *-2.250 |
| *Cohabiting* | -- | -- | -0.964 |
| *Separated (omitted Divorce)* | -- | -- | 0.599 |
| *Transition Index* | -- | -- | 0.122 |
| *Income 80,000 +* | -- | -- | -0.700 |
| *Income Under $29,000 (omitted 30,000-79,000)* | -- | -- | *-1.555 |
| *Women*Children* | -- | -- | *0.286* |
| Stress Variables (After) | | | |
| *Anxiety After* | -- | -- | -0.614 |
| *Depression After* | -- | -- | 1.197 |
| *PTSD after* | -- | -- | -1.905 |
| *Homeless after* | -- | -- | ***3.229 |
| *Arrests after* | -- | -- | 1.598 |
| *Sexual Assault After* | -- | -- | -3.486 |
| *Sexual Harassment After* | -- | -- | 2.055 |
| *Women*Sexual Assault After* | -- | -- | *NA* |
| *Women*Sexual Harassment After* | -- | -- | **-5.171* |
| *Women*PTSD after* | -- | -- | *2.083* |
| Substance Use Variables (After) | | | |
| Alcohol After | -- | -- | 0.212 |
| Hard drugs tried After | -- | -- | -0.436 |
| Prescription tried After | | | *4.038 |

--Not Applicable *** p<.01**p<.05  *p<.10

Tables 5.2 shows regression coefficients for marijuana use before, during, and after service. Throughout each stage men are more likely to use marijuana, however this difference is not statistically significant. This is comparable to the findings in the cross-tabulations –that men and women's use of marijuana is roughly similar, with men using at slightly higher rates than the women. Once again, it is possible that these coefficients could become significant with a larger sample size.

It is useful to point out the variables that are statistically significant for the marijuana regressions. Prior to service, depression prior to service is positively associated with marijuana use. This may indicate the use of marijuana as a coping mechanism for depression, whereas alcohol (likely due to its social nature) is less preferred (psychological benefits). Alcohol use prior to service and hard drugs experimented with prior to service (a large magnitude and at a high level of significance, p<.01) are also associated with increased rates of marijuana use.

During service, anxiety prior to and during service is positively associated with marijuana, as is hard drug experimentation during service. It is possible that this increase is due to the stress associated with military service, and that marijuana is used as a coping mechanism. Experimentation with one type of drug may encourage use of other substances as well. On the other hand, alcohol use during service is negatively associated with marijuana use.  This could be due to indoctrination to the military's ideologies, along with the zero-tolerance policy for marijuana during service (economic costs).

After service, several variables are found to be significant. Homelessness prior to service is negatively associated with marijuana use after service. This may also be related to the knifing-off hypothesis previous mentioned, where individuals coming from challenging backgrounds may use the military as a turning point to get them back on track. Refraining from substance use, such as marijuana, may be one such step in promoting a healthy lifestyle. In addition, sexual harassment during service is positively associated with marijuana use, though the interaction between women and sexual harassment during is negative. It is possible that women are less likely to use marijuana as a coping mechanism for this specific type of stressor. On the other hand, the interaction between women and combat is positive,

indicating that marijuana use may be used for coping with other types of trauma. Interestingly, employment and enrollment in school are both positively correlated with marijuana use. This could be due to increased acceptance of marijuana (especially as medication) in Washington State, due to its legality. Enrollment in college could immerse veterans in an environment where marijuana is readily available and frequently used (social benefits). Last, those who have never been married are less likely to use marijuana.

*Regressions on Hard Drug Experimentation*

Table 5.3: Regression Analysis on Hard Drugs Tried across the Life Course

| **Independent Variable** | **Prior to Service** | **During Service** | **After Service** |
|---|---|---|---|
| Male (omitted Female) | -0.011 | -0.164 | -0.067 |
| White (omitted Nonwhite) | *-0.114 | 0.030 | **0.222 |
| BEFORE VARIABLES | | | |
| Stress Variables (Prior) | | | |
| *Anxiety Prior* | 0.112 | -0.021 | **-0.442 |
| *Depression Prior* | ***-0.634 | -0.023 | 0.093 |
| *PTSD Prior* | -0.214 | -0.181 | -0.600 |
| *Sexual Harassment Prior* | **0.283 | 0.198 | 0.030 |
| *Sexual Assault Prior* | 0.032 | *-0.291 | 0.158 |
| *Homeless Prior* | 0.014 | -0.154 | -0.148 |
| *Arrests Prior* | 0.005 | 0.033 | -0.067 |
| *Women*Sexual Assault Prior* | -0.052 | -0.002 | ***-0.936 |
| *Women*Sexual Harassment Prior* | -0.184 | -0.002 | **0.686 |
| Substance Use Variables (Prior) | | | |
| *Alcohol use Prior* | -0.018 | -0.023 | -0.012 |
| *Marijuana use Prior* | ***0.057 | **0.035 | -0.028 |
| *Prescription Tried Prior* | ***0.507 | 0.019 | 0.032 |
| DURING VARIABLES | | | |
| Military Variables | | | |
| *Enlistment Age* | -- | 0.008 | 0.007 |
| *Combat Index* | -- | *0.034 | 0.027 |
| *Service Length* | -- | -0.015 | 0.006 |
| *Never Mobilized* | -- | -0.038 | 0.025 |
| *Marines* | -- | *-0.200 | -0.255 |
| *Navy* | -- | 0.091 | -0.064 |
| *Other (omitted Army)* | -- | 0.012 | -0.166 |
| *Military Discharge Status* | -- | 0.002 | 0.028 |
| Substance Use Variables (During) | | | |
| *Alcohol During* | -- | *0.061 | -0.051 |
| *Marijuana Use During* | -- | ***0.113 | 0.021 |
| *Prescription tried during* | -- | 0.078 | 0.142 |
| Stress Variables (During) | | | |
| *Anxiety during* | -- | -0.054 | -0.012 |
| *Depression during* | -- | 0.039 | 0.069 |
| *PTSD during* | -- | 0.002 | -0.007 |
| *Sexual assault during* | -- | 0.209 | -0.094 |
| *Sexual harassment During* | -- | 0.093 | 0.135 |
| *Women*Assault During* | -- | NA | NA |
| *Women*Sexual Harassment During* | -- | 0.030 | -0.058 |
| *Women*Combat* | -- | **-0.108 | -0.006 |
| *Women*PTSD During* | -- | -0.233 | ***2.300 |
| *TBI* | -- | -- | -0.203 |
| AFTER VARIABLES | | | |
| Demographic Variables (After) | | | |

| | | | |
|---|---|---|---|
| *Age* | -- | -- | -0.006 |
| *Employed* | -- | -- | 0.063 |
| *Student* | -- | -- | -0.122 |
| *Highest education* | -- | -- | 0.026 |
| *Number of Children* | -- | -- | -0.009 |
| *Married* | -- | -- | -0.057 |
| *Never Married* | -- | -- | 0.153 |
| *Cohabiting* | -- | -- | 0.087 |
| *Separated (omitted Divorce)* | -- | -- | -0.171 |
| *Transition Index* | -- | -- | 0.024 |
| *Income 80,000 +* | -- | -- | -0.041 |
| *Income Under $29,000 (omitted 30,000-79,000)* | -- | -- | 0.040 |
| *Women*Children* | -- | -- | 0.105 |
| Stress Variables (After) | | | |
| *Anxiety After* | -- | -- | 0.125 |
| *Depression After* | -- | -- | -0.186 |
| *PTSD after* | -- | -- | 0.230 |
| *Homeless after* | -- | -- | 0.203 |
| *Arrests after* | -- | -- | -0.151 |
| *Sexual Assault After* | -- | -- | 0.824 |
| *Sexual Harassment After* | -- | -- | -0.167 |
| *Women*Sexual Assault After* | -- | -- | NA |
| *Women*Sexual Harassment After* | -- | -- | -0.748 |
| *Women*PTSD After* | -- | -- | *-0.474 |
| Substance Use Variables (After) | | | |
| *Alcohol After* | -- | -- | **0.173 |
| *Marijuana Use After* | -- | -- | 0.013 |
| *Prescription tried After* | -- | | 0.332 |

--Not Applicable *** p<.01**p<.05 *p<.10

Table 5.3 shows the regression analysis for hard drugs tried across the life course. Throughout the military life course men are actually very slightly less likely to experiment with hard drugs than women, though none of the coefficients are statistically significant. Therefore, similar to the cross-tabulation findings, men and women's experimental hard drug use are likely similar. A larger sample size could help provide greater understanding into this finding.

There are several variables that I find statistically significant that are worth pointing out. Prior to service, nonwhite individual are more likely to experiment with hard drugs. Again, this could be due to hardships specific to nonwhite people (i.e. discrimination). A diagnosis of depression prior to service is negatively correlated with hard drug experimentation. As much of the hard drug use in this sample is with

"party" or "social" drugs, and depression is often associated with isolation, it is possible that these individuals are not in situations where hard drugs are readily available to experiment with. Sexual harassment, marijuana use, and prescription drug experimentation are all positively associated with hard drug experimentation.

During service several variables are statistically significant. First, sexual assault prior to service is negatively associated with trying hard drugs during service. It is possible that these individuals are trying to avoid states of vulnerability due to prior trauma (psychological and physical costs of drug use). Serving in the marines is also negatively associated with hard drug experimentation. It's possible that Marines experience more combat deployments, which could limit accessibility to hard drugs to try. Marijuana use during and prior to service, scoring high on the Combat Index, and scoring high on the Alcohol Index during service are all positively associated with hard drug experimentation. It is likely that individuals interested in experimenting with marijuana and heavy alcohol use are more-inclined to risky behaviors, thus increasing rates of hard drug experimentation. Combat exposure could encourage drug experimentation upon return as a coping mechanism, though this counteracts my argument as to why Marines may be less likely to experiment. Thus, it is also possible that the culture of the Marines is less accepting of drug experimentation than other branches of service (social costs). Last, the interaction between women and the Combat Index indicates lower levels of hard drug experimentation. It is possible that women who have experienced combat react to combat in different ways than men who have experienced combat, and therefore are less likely to experiment with drugs as a coping mechanism.

After service white veterans are more likely to experiment with hard drugs. It is plausible that white veterans are more exposed to the culture of party drugs than nonwhite veterans, as the nature of hard drug experimentation in this sample appears to be primarily psychedelic (social benefits). The interactions between women and PTSD diagnosis during service and women and sexual harassment prior to service are also positively associated with hard drug experimentation. It is possible that these women use hard drugs as a coping mechanism, but not until after service when they can more easily experiment without risk of being caught. On the other hand, anxiety prior to service and the interaction between

women and sexual assault prior to service both decrease the propensity to experiment with hard drugs. Again, this could be due to veterans avoiding scenarios that could increase their vulnerability or anxiety.

*Regressions on Prescription Drug Experimentation*

Table 5.4: Regression Analysis on Prescription Drugs Tried across the Life Course

| **Independent Variable** | **Prior to Service** | **During Service** | **After Service** |
|---|---|---|---|
| Male (omitted Female) | 0.083 | 0.100 | -0.095 |
| White (omitted Nonwhite) | 0.039 | -0.035 | -0.049 |
| BEFORE VARIABLES | | | |
| Stress Variables (Prior) | | | |
| *Anxiety Prior* | 0.166 | 0.152 | 0.033 |
| *Depression Prior* | **0.555 | -0.324 | **0.671 |
| *PTSD Prior* | 0.371 | ***1.119 | -0.662 |
| *Sexual Harassment Prior* | -0.015 | 0.483 | -0.065 |
| *Sexual Assault Prior* | -0.094 | ***-0.258 | *-0.335 |
| *Homeless Prior* | 0.100 | 0.167 | *0.254 |
| *Arrests Prior* | 0.038 | **0.202 | -0.019 |
| *Women*Sexual Assault Prior* | 0.043 | 0.313 | **0.657 |
| *Women*Sexual Harassment Prior* | 0.094 | **-0.514 | -0.374 |
| Substance Use Variables (Prior) | | | |
| *Alcohol use Prior* | **0.062 | 0.012 | 0.031 |
| *Marijuana use Prior* | -0.011 | -0.008 | -0.002 |
| *Hard Drugs Tried Prior* | ***0.676 | -0.044 | **0.305 |
| DURING VARIABLES | | | |
| Military Variables | | | |
| *Enlistment Age* | -- | -0.013 | -0.021 |
| *Combat Index* | -- | -0.015 | 0.034 |
| *Service Length* | -- | 0.002 | -0.028 |
| *Never Mobilized* | -- | 0.014 | -0.134 |
| *Marines* | -- | 0.027 | -0.127 |
| *Navy* | -- | 0.056 | 0.045 |
| *Other (omitted Army)* | -- | -0.043 | 0.075 |
| *Military Discharge Status* | -- | -0.059 | 0.023 |
| Substance Use Variables (During) | | | |
| *Alcohol During* | -- | 0.004 | 0.020 |
| *Marijuana Use During* | -- | 0.022 | 0.049 |
| *Hard Drugs tried during* | -- | 0.094 | -0.082 |
| Stress Variables (During) | | | |
| *Anxiety during* | -- | 0.040 | -0.038 |
| *Depression during* | -- | 0.004 | -0.030 |
| *PTSD during* | -- | 0.017 | -0.047 |
| *Sexual assault during* | -- | -0.154 | 0.236 |
| *Sexual harassment During* | -- | -0.149 | -0.202 |
| *Women*Assault During* | -- | NA | NA |
| *Women*Sexual Harassment During* | -- | 0.050 | 0.136 |

| | | | |
|---|---|---|---|
| *Women*Combat* | -- | 0.087 | -0.098 |
| *Women*PTSD During* | -- | 0.198 | -0.444 |
| *TBI* | -- | -- | 0.067 |
| AFTER VARIABLES | | | |
| Demographic Variables (After) | | | |
| *Age* | -- | -- | 0.019 |
| *Employed* | -- | -- | -0.110 |
| *Student* | -- | -- | -0.011 |
| *Highest education* | -- | -- | 0.048 |
| *Number of Children* | -- | -- | *0.0722 |
| *Married* | -- | -- | 0.146 |
| *Never Married* | -- | -- | 0.113 |
| *Cohabiting* | -- | -- | -0.067 |
| *Separated (omitted Divorce)* | -- | -- | -0.078 |
| *Transition Index* | -- | -- | **-0.031 |
| *Income $80,000 +* | -- | -- | 0.060 |
| *Income Under $29,000 (omitted 30,000-79,000)* | -- | -- | 0.055 |
| *Women*Children* | -- | -- | -0.067 |
| Stress Variables (After) | | | |
| *Anxiety After* | -- | -- | 0.053 |
| *Depression After* | -- | -- | 0.131 |
| *PTSD after* | -- | -- | -0.163 |
| *Homeless after* | -- | -- | ***-0.327 |
| *Arrests after* | -- | -- | -0.077 |
| *Sexual Assault After* | -- | -- | -0.272 |
| *Sexual Harassment After* | -- | -- | 0.005 |
| *Women*Sexual Assault After* | -- | -- | *NA* |
| *Women*Sexual Harassment After* | -- | -- | *0.559* |
| *Women*PTSD after* | -- | -- | *0.164* |
| Substance Use Variables (After) | | | |
| *Alcohol After* | -- | -- | 0.010 |
| *Marijuana Use After* | -- | -- | 0.030 |
| *Hard Drugs tried After* | -- | | *0.316 |

--Not Applicable *** p<.01**p<.05 *p<.10

Table 5.4 shows the regression coefficients for prescription drug experimentation across the life course. Before and during military service women are slightly less likely than men to experiment with prescription narcotics, though after they are slightly more likely. Regardless, all three coefficients are not statistically significant. It is likely that men and women have similar rates of prescription drug experimentation. A larger sample size could provide more insight into these trends.

Several variables are found to be statistically significant for prescription drug experimentation. Prior to service, depression, alcohol use, and hard drug use are all positively associated with prescription drug misuse. Those diagnosed with depression may abuse their prescription or seek out un-prescribed pills if they avoid professional diagnosis. Those using alcohol or experimenting with hard drugs may be risk-takers that are more inclined to experiment with other types of substances, such as prescription painkillers.

During service, PTSD diagnosis prior to service and arrests both increase the likelihood of prescription drug experimentation. This could be due to self-medication or a higher propensity for risk-taking. Sexual assault prior to service and the interaction between women and sexual harassment prior to service both decrease the likelihood of prescription drug experimentation. This could be caused by individuals actively avoiding states of vulnerability, which prescription narcotic abuse could heighten.

After service depression prior to service, homelessness prior to service, hard drug use prior to service, and increased numbers of children are all positively correlated with prescription drug experimentation. Risky-behavior like hard drug experimentation may encourage experimentation of prescription drugs. Depression may increase the propensity to self-medicate, but experimentation could also be due to accessibility of pills. It is hard to propose why homelessness prior to service and children may increase rates of prescription drug misuse. Due to the low numbers of individuals using prescription pills recreationally, it is possible that these relationships are spurious in nature. The interaction between women and sexual assault prior to service is also positively associated with prescription drug misuse, possibly as a coping mechanism. Increased difficulty on the Transition Index and sexual assault prior to service are both negatively associated with prescription drug abuse. Perhaps veterans who are having a hard time transitioning are trying to stay clean in order to increase likelihood of acquiring or maintaining a job. Those who have experienced sexual assault prior to service may simply be avoiding states of susceptibility.

**Qualitative Analysis**

It is important to note some of the unique aspects of service for each individual interviewed. Please keep in mind that all of the respondent's names (and the names of their friends and family members) have been changed to pseudonyms in order to protect their identities.

Of the female respondents, two of the women, Lucy and Carolyn, served in the Active Duty Army. Farrah served in the Army Reserves, but was chaptered out after she had her first child and stopped checking in regularly. She has an Other-Than-Honorable discharge status. Emmy and Noelle served in the Active Duty Air Force, and Noelle served as an officer. Laura, Clara, Hannah, and Wendy served in the Active Duty Navy, although due to injury Wendy received an "erroneous" discharge after completing basic training. All of the women who participated in the interview were deployed, excluding Farrah, Carolyn, and Wendy. Laura, Clara, and Lucy were deployed to combat zones (Iraq and Afghanistan), though they never experienced fire fight or direct combat.

Of the nine male respondents, three served actively in the Army; Ray, Cameron, and Austin. Four served in the Navy; Noah, Tristan, Isaac, and Aaron. Riley served in the Marines, and Cody served in the Coast Guard. All nine interviewees were deployed, but only Riley, Isaac, Austin, and Cameron experienced direct combat. Aaron joined the Navy Reserves, but was activated for his deployments. Cody joined the Active Duty Coast Guard, but served in the Reserves toward the end of his service. Noah served in the Active Duty Navy, but currently is in the Reserves. He is the only participant who is currently still serving in the military. All male interviewees were enlisted while they were in the military, excluding Noah and Isaac who were officers. Both Riley and Cameron are diagnosed with Post-Traumatic Stress Disorder (PTSD), and Cameron is also diagnosed with Traumatic Brain Injury (TBI).

*Substance Use Prior to Military Service*

Illicit or Prescription Drug Abuse

***Women***

Beginning with hard drug use and recreational prescription drug abuse for women (drug use other than marijuana), for most of the respondents the costs, particularly the physical and psychological costs of fear and loss of control, as well as economic costs, prevent them from trying or *regularly* using any illicit drugs prior to service. For example, for the women, many expressed that "fear" is a key reason why they abstain from hard drug use prior to service,

> "*I'm cautious about certain things in terms of like, I don't want to die or be in any physical pain or anything so, um, and I also don't like anything that alters the way I can think so, I was just never into it*." –Hannah, AD Navy

Aside from fear or loss of control, several female respondents claimed that it was the literal cost of drugs that deterred them from using,

> "*I just, I never felt the need or the urge to do it. I guess it was just, you know, growing up we lived kind of frugally, so it's one of those, why spend the money on it, when you're only gonna feel good for a little while, when you can spend that money, you know, and get a movie, or get something that's gonna last you longer and you're gonna be able to enjoy it a lot longer than that, you know, however long you're high or whatever feel, how long that lasts."* –Carolyn, AD Army

Of all nine female interviewees, only one seriously used drugs prior to service, Clara, who describes her history with first marijuana, then methamphetamines, and later abusing prescription narcotics, as a consequence of wanting to get a rise out of her parents,

> "*My choices for doing things, albeit trivial and immature, they're not excuses. 'Oohhh I had a horrible upbringing so I'm gonna take drugs to piss my family off.' I wasn't traumatized, I wasn't upset 'cuz daddy left. No, I just wanted to piss them off. I mean, I'm not the normal person."* Clara, Active Duty (AD) Navy

For Clara, the costs of drug use weren't enough to outweigh the benefit of drawing attention from her parents and also her boyfriend. Clara is the only case I observe of a female respondent using hard drugs as a mechanism for responsiveness, and the only female veteran that regularly used hard drugs prior to service.

Only one other female veteran tried an illicit drug prior to service; Emmy, an AD Air Force veteran. Unlike Clara, and similar to the other women in the sample, the costs of drug use outweighed the potential benefits,

> "*I tried salvia, was it, before it was illegal, like you could still buy it at the headshop. AndI did that once and I just never did it again 'cuz it scared me."* –Emmy, AD Air Force

For Emmy, fear of the physical effects (cost) deter her from experimenting greater with illicit drugs.

Overall, the majority of women abstained from hard or prescription drug abuse prior to service. This indicates that the costs of drug use, particularly physical and/or economic, outweigh the potential benefits.

***Men***

The use of illicit drugs among the male respondents prior to service is relatively similar to the females, in that for the most part these types of drugs were avoided. In addition, like the female respondents only three tried or regularly used hard or prescription drugs prior to service. However, rather than primarily physical or psychological costs being the prime deterrent, it was the social costs that were more relevant for the men. Although Riley did abuse prescription drugs prior to service, he mentions his brother as a prime reason for his aversion to hard drug use,

> "*Jackson* self-medicated, um, I mean I don't think there was much that he didn't self-medicate with. And then he went to rehab, cleaned himself up his junior year of high school, senior year he signed up for the Marine Corp but because he had missed that three months his junior year to go to rehab they told him like right before they were supposed to graduate like, 'you're not graduating. You missed three months last year'. Relapsed, suicide. And I think that's one of the number one reason's why I never went that route. I never went…I would love to go sit in the woods in a camping site and do shrooms, I think that sounds like a fantastic time. But I'm not going to." –Riley, AD Marines*

Similarly, Aaron describes his friends and his brother as the reasons why he didn't go down the road of hard drug use,

> "*It was a lot of fun growing up there and I'm definitely very fortunate to have friends that had like the same kind of mentality that me and my brother did of like, 'okay, let's not be stupid with drugs and alcohol in our lives', and um let's still try and have a lot of fun."* –Aaron, Navy Reserve

Despite the social costs of hard drug use acting as a preventative measure against substance use for the majority of the men, three did experiment with hard or prescription drugs–Riley, who tried prescription narcotics, and Ray, who experimented with a variety of illicit drugs including possibly cocaine, meth, hallucinogenic mushrooms, and LSD. Though Ray tried a variety of hard drugs, he didn't articulate that he was addicted to any of them, and that the primary motivation to use was the physical and social enjoyment,

> "*…so I think we found like some cocaine in a package that he [a friend] had left in our tree fort that we had up in the hills… …so he left some of that and my brother and I got it and we did it and we're just like, 'oh this is fun, let's see if we can do some more'. And that, between the ages of maybe 14 and 17 tried cocaine, tried maybe some meth, you know marijuana obviously, alcohol. I think we tried mushrooms and possibly acid, um, but then, that was pretty much it. Never shot up." –Ray, AD Army*

A similar explanation is given by Riley for his experimentation with prescription narcotic, though he attributes the costs of *regular* drug abuse as his reason for never going beyond experimenting,

> "*I took Vicodin and Percocet a couple times—this is before the OxyContin explosion, which lead directly to the heroin explosion um, but it was like if you smoked pot at a party you're a burnout, but if you took a couple Percocet it was like an acceptable thing… …there was a group of guys that I was very tight with that continued down that path and then you know they went through taken 'em to chewin' 'em to snortin' 'em to smokin' 'em to injectin' 'em to heroin to their lives went to hell. And then I was part of the rest of us that were kind of like, 'you know what? This is where I draw the line.'"*—Riley, AD Marines

Overall it appears that none of the men in the sample regularly used prescription or illicit drugs prior to service. Those that did try either of the two did so primarily for experimentation, in the typical way that many teenagers do (for fun, social reasons). Cameron was the only male respondent who experimented with prescription drugs for the physical qualities specifically, but even that was combined with the social influence of drug use,

> "*I had tried—I had done some cocaine once or twice. Um didn't like it. I had taken mushrooms. Um, Adderall, I think I did that a couple of times 'cuz some kids around me were doing it and, like, it helped you stay focused on your homework or whatever. Um I never was like, fully engaged like, 'oh I have to be doing these drugs' or something, but I did kinda partake in those ones that I just mentioned occasionally… …Yeah I was never buying coke or shrooms really. Or like, just like if it was around I might check it out, but it was never like, more hardcore stuff, it wasn't something I went after and tried to do a lot."* –Cameron, AD Army

Collectively, the majority of men avoid hard drug use, primarily due to the social costs associated with addiction. Though three did try hard or prescription drugs, it appears to be mostly due to experimentation, rather than drug addiction.

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In the end, it appears that the costs of hard or prescription drug abuse outweighs the possible benefits, for both the majority of the men and women in the sample, prior to service. Although some men and women did experiment with these types of drugs, only one, Clara, admits to an addiction to illicit drugs. All other drug-using respondents describe it more as ideally experimentation. Family influence and upbringing coupled with a general lack of interest (largely attributed to the physical costs) seem to be the

major preventative factors against hard drug use for both men and women prior to service. For the women, the physical and psychological costs are more preventative, whereas the social costs are more influential in deterring the men.

Marijuana Use

***Women***

For many of the women, marijuana use is a different story. The proposed benefits of marijuana use draws five of the female respondents to try it initially, but not all of them regularly used. Overall, it is the social benefits that led so many of the women to try marijuana in the first place,

> "*Uh, I tried it a few times, um before military… … I tried it in college. I only went for a year, I don't really worry about it, uh but I made a friend who grew it in her closet [laughing], so whater you gonna do?*" –Wendy, AD Navy
> "*I did try weed a few times. Ummm I think my closest friend at the time smoked once or twice and so we tried it with her brother and her mom…*" –Farrah, Army Reserves

Similar to Wendy and Farrah, two other female interviewees attributed their interest in marijuana to the influence of friends or boyfriends (social benefits). Although five women tried marijuana prior to service, only two (Emmy and Clara) used it regularly. The physical cost was the key reason for discontinuing use of marijuana,

> "*Well, the first time I [tried marijuana] I was 17-18, and it made me feel like I was on a tilt-a-whirl and rollercoaster at the same time, okay? … So I'm lying there with my foot hanging off and my hand above my head… and then my mom calls me in the living room [laughing]. I walk in there and I'm leaning against the wall, and –have you ever watched That 70s Show, and the back wall is doing this thing [gestures, waving]? It's not a lie! I was sittin' there going, yeah mama? [laughing] I went back in there, and she, she walked up and said, 'you're high aren't ya,' and I said, 'yeah', she said, 'how do you like it?', I said, 'I don't!'* –Wendy, AD Navy

Wendy explained that she did try marijuana a couple more times prior to her service, each time trying to, "*see if it would still act wonky"*, and also to calm herself after the death of her father, yet the physical effects of the drug still outweighed the potential benefits, in her eyes,

> "*...My cousin who I told you about. I called her I said, 'I don't think I'm doing real good.' She came down she said, 'honey you're stoned'. I mean, I was not feelin' real good at all. I mean, I could feel my heartbeat in my ears, whole nine yards, I was just, I'm goin' to sleep I don't feel good! And then, I didn't do any of that for a long time.*" –Wendy, AD Navy

For Lucy, it was her allergy to marijuana (a physical cost) that deterred her from using marijuana regularly,

> "*I had smoked [marijuana] a couple times but I think I'm actually allergic to it, I never have a good time, I always throw up, so, like once or twice [I've tried it]*." –Lucy, AD Army

Taken as a whole, experimentation with marijuana is more typical for the women prior to service than any other types of drug. This is primarily due to the social benefits, though in the end the physical costs tend to outweigh enough to discourage continual or regular use.

***Men***

Similar to the women respondents, five of the nine male interviewees either tried or regularly used marijuana prior to joining the military, Riley, Tristan, Ray, Cameron, and Austin. Also like the women, the men primarily attributed their marijuana use to the social benefits,

> "*For me it wasn't something that I went out of my way like, I never bought pot it was just like if a friend was like hey let's go smoke pot. And um, usually---and that was all in high school too so, I –I didn't smoke in* college at all…" –Tristan, AD Navy
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> *"We'd get together, skate around looking for drugs, looking for something to steal, you know just complete delinquent, just, not didn't really have a solid foundational friendship that wasn't really just based around what can I get, what can we do. Let's go up in the hills and do a little, you know, pack some lunch and go plant some marijuana seeds and like, stupid, you know stupid shit you do when* you're young." –Ray, AD Army
>
> *"I hung out with some shitheads I think. Dirt bags. Smoking weed, drinking… …You know they might get drunk and smoke weed and skip class and stuff like that, but they're not breaking in and robbin' houses or things like that… …I was hanging around kids that probably didn't give a fuck for whatever reason…I bought a bag once in a while, split it with my buddies. Like a 20 bag or something, but um, yeah that was primarily it."* –Cameron, AD Army

In addition to the social benefits, both Austin and Riley highlight the physical and/or psychological mechanisms of marijuana as their reasons for using it,

> *"…I definitely smoked more than I drank. But I did have the opinion that I was only going to participate with things that were natural, that were out of the ground, right? If I happened to light this bush on fire and I'm pretty happy, hungry, sleep; cool*." –Austin, AD Army
>
> "*Started doing drugs…messing around with like marijuana I recall when I was 12—11 or 12…. … going into a supermarket getting beer, my brother and I. Just lookin' for a way out, looking for some sort of reprieve."* –Riley, AD Marines

Despite the mostly social reasons for using marijuana, Riley, Tristan, Ray, and Cameron all admit that overall they weren't that captivated by the social or psychological benefits and didn't continue use for long. The reasons for this lack of continued use varies across the respondents, including just a lack of general interest, social costs they observed from other family members, or due to the memories it would dredge up (psychological cost). For example,

> "*A buddy of mine used to deal pot and so I smoked with him like a couple times, didn't really like it that much, you know, just for me personally."* –Tristan, AD Navy

> *"My brother was really into, like smoking weed every day, like that's all he did. So I think part of that just made me think, like, that' snot something I should be doing, 'cuz he was like way off the rails."* –Cameron, AD Army
> *"Marijuana I didn't like. All my friends did marijuana, every time I'd go with them it was like they were all potheads, so we'd go and they'd play videogames and I'd sit and watch 'em… …but it just made me feel really self-conscious in my head and I couldn't deal with that because it brought me back to a place, being back stuck in the trailer and all this abuse and all this crazy shit so, didn't do that, didn't do marijuana more than like on and off for a year, more to experiment."* –Ray, AD Army

Like the female respondents, some of the men desist from marijuana entirely prior to service. This abstention was typically attributed to social costs, like the notion of being a "rule follower",

> "*In high school, probably the first two years of high school, I was very anti-pot. Only really because I didn't know anything about it. Of course I had been raise, you know, 'pot's the devil, don't participate in the devil's lettuce.', that kind of thing you know?"* –Austin, AD Arm
> *"And then in college um, I've still never, I've never smoked marijuana. I mean I'm interested in it, but haven't tried it. Um, the rule follower in me just didn't allow it."* –Isaac, AD Navy Officer

In general, the men experiment with marijuana more than any other drug prior to service. This experimentation was prevalent mainly for the social and psychological benefits of marijuana use. For most, use remains experimental in this stage, as the social and psychological costs tend to interfere with continual use.

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Overall it appears that the men's use of marijuana prior to service roughly mirrors that of the women. Several experimented with marijuana prior to service, though the men seemed to be more continual users of it than the women. Despite trying marijuana, it appears to remain a low priority for both the men and women prior to service, as many report they didn't enjoy the effects or it just wasn't their cup of tea. In these ways, the costs (more physical for the women, more social and psychological for the men) of marijuana use seems to outweigh the overall potential social or psychological benefits, at least enough to decrease or discontinue use for many men and women that experimented, and entirely for those who did not try marijuana

Alcohol Use

***Women***

Drinking prior to service is neither here nor there for the female respondents, and seems to be driven primarily by familial influence (social costs and benefits). For those who chose to drink prior to

service, it is primarily for these social reasons, like partying, peer pressure, or growing up in a home where alcohol use was normalized. When asked what influenced her to start drinking Clara responds,

"*My older sister [laughing], hanging out with her and wanting to be cool*" –Clara, AD Navy

Wendy has a similar experience, though she was brought up in a family where drinking was quite normal,

> *"I was raised in a family where we would drink… they…we'd cook with it and they'd give me a small glass of wine bout that much [gestures], like literally a glass this big at the age of five. So, I've been drinking wine since I was my daughter's age. I think my mom even said she watered it down and gave it to me in my bottle, okay? But as time went on I did have glasses of wine, full glasses of wine with my parents, champagnes. Yeah, so it wasn't, like, ---the whole family drinks beer."* –Wendy, AD Navy.

For Wendy, drinking was a part of everyday life that was embraced by her family in a positive manner, so her attitudes toward alcohol were quite nonchalant. She describes times when her father would come home drunk with her uncle, or how her parents picked her up from a night of one-too-many drinks at the bars. This level of comfort around her parents and alcohol explains her casual opinion on alcohol prior to service.

On the other side of the coin for those who chose not to drink, it appears to be motivated for the same but opposite reasons -- primarily by family upbringing (social costs), where alcohol was *not* normalized, often driven by the psychological costs of addiction. Two of the women were self-described "goody-two shoes",

> "*I didn't drink very much before I joined, um my father is an alcoholic. But we didn't grow up with him, we grew up with my mom and she doesn't drink like at all. I've never even seen her sip alcohol. Um so I didn't really before. I think I had had a taste of beer or something, but I didn't drink before the military, I was just scared of it. Um, well, first of all my mom is one of those that's like 'if you take one too many Tylenol you could OD and die!', then, with the alcohol she was like, 'it's genetic! You're gonna have a problem forever!' [laughing]. So I was scared, and then my friends used to throw up a lot, it didn't look like something I would enjoy doing.*" –Lucy, AD Army
>
> "*I think my alcohol thing… My dad plays a* huge *factor in it. But I think it's also my upbringing, because my parents didn't smoke, or my parent's didn't drink at all. My mom didn't, anyway. My dad, he would drink beers… …he'd come home, you know, we'd eat dinner or whatever, and he'd go back downstairs and dial into work, and he'd drink his beers down there. So I think that was something that kinda played into it. I wasn't exposed to any of that growing up, so I didn't think, 'okay, that's the norm, you know? That's what I'm expected to do.*'" –Carolyn, AD Army
>
> "*My parents don't drink or smoke or do drugs, so, I believe that impacted me and how I look at those things 'cuz my siblings are like the same. They don't really do much."* –Farrah, Army Reserves

In general, it is hard to identify a true pattern of alcohol use prior to service. For the most part, consumption seems to echo the common picture of US society. Broadly, social instigators and barriers are driving the trends of use.

***Men***

Unlike the women in the sample, all nine of the men have either tried or regularly (sometimes heavily) consumed alcohol prior to entering the military. While social benefits are the primary motivators for the men, it is more associated with partying or friends rather than family influence (as it is for the women), though family upbringing was cited as a reason for being able to be more responsible with alcohol, or as a preventative measure for abstaining after trying alcohol for two (Cody and Aaron). In fact, every respondent who drank mentions at least some type of social benefit of alcohol (except for Aaron, who only tried alcohol once and then abstained from use). Primarily drinking involves grabbing a beer with friends. For example,

> "…like I was kind of isolated in high school um and then all of a sudden I had all these friends in college who were active and doing things it was so much fun…there was two groups of guys on the football team, they were the guys that couldn't wait to get showered after breakfast so they could go buy beer and go chase women… …So again same question, do I go home and be self-disciplined and do my homework, or do I go catch a buzz and get laid? Well, gonna do that." –Riley, AD Marines
> "I just kinda saw booze as like, it's something fun to do and meet girls and have fun and you know, not thinking very deeply about it." –Cameron, AD Army
> "Uh you know drank a little bit and then I—you know, being exposed to that I just kind of was like…it seemed like that's all anybody wanted to do…"—Tristan, AD Navy
> "Started drinking when I was, right before I was 21. I felt like a total deviant, 'cuz I was like I'm not 21 yet. Um, and it was mostly just like social, my buddy and I would be watching hockey, and he'd bust out a six pack, and we'd drink it. And then uh, was never to excess." –Isaac, AD Navy Officer

Another primary reason for their social involvement with alcohol is purely instigated by accessibility, often due to enrollment in college,

> "..that's when the drinking started to pick up, because I was twenty but I was able to hang out at this bar even when I wasn't working, um, but it was more of a social thing for me… …like I was isolated in high school and then all of a sudden I had all these friends in college who were active and doing things it was so much fun." –Riley, AD Marines
> "Well I got to college and I was like alright well, we'll try this and then decide I really liked it and you know joined a fraternity and hung out with a lot of people who were you know heavy drinkers and so that's just sort of what happened…" –Noah, AD & Reserves Officer

"And then in college, um, I would go to parties, uh, 'cuz that was kinda the thing to do. Was kinda poor man's entertainment… …Until probably my junior year I moved out, um, lived with a buddy, and then I would drink to get drunk. Um, at least once a week, probably, 'cuz I lived right down the street from the bar. It was too easy." –Isaac, AD Navy Officer

Despite all of the alcohol-using men referencing social reasons, several also describe using alcohol as a coping mechanism, prior to service,

> "I don't know I was just feelin' lonely and I think that's the first time that I started drinking." –Riley, AD Marines
> "Went back to school, and still kind of dabbled in and out of, not really any hard drugs I think more of just alcohol to cope… …When I got a little older, you know maybe 14-17, I, I drank as much as I could, many black out nights, um, just like waking up the next day getting in my car like, how the hell did I get here? … … I kept doing it to kind of dismiss reality, to kind of get away from maybe dealing with issues or dealing with, where I lived…" –Ray, AD Army

Taken as a whole, alcohol consumption is common for the men prior to service, and is often used for its social benefits, driven by accessibility.

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Generally, it appears that the men more regularly used or tried alcohol than the women prior to service. Of the women who did drink, many point to familial upbringing as a source of their experimentation with alcohol, whereas the majority of the men point to the easy accessibility of alcohol in college and the social norms of drinking with friends. None of the women discuss using alcohol as a way to cope with adverse life experiences (despite the majority of them having experienced some sort of hardship in their life prior to service), while several of the men did. In fact, for the women it appears that the distress they experienced acts as more of a *preventative* social factor to drinking, rather than an instigator to alcohol use as it does for the men prior to service.

*Substance Use During Military Service*

<u>Drug use (including illicit, prescription, and marijuana):</u>

Based on the low rates of illicit, prescription, and marijuana use, and the similar reasoning behind use for those that did, I've elected to combine all three types of drugs into one section in the "During Service" time period.

***Women***

To begin, nearly every woman mentions the economic cost of drug use—the military's "*zero tolerance*" policy--as a key reason to why they chose not to partake, or why they were careful about it if they did. While several emphasize that depending on the drug the punishment may vary, the overarching perception is that testing positive on one of the random drug screenings will get you kicked out of the service, landing you with a dishonorable or other-than-honorable discharge which revokes your VA benefits (including the GI Bill) and limits your opportunities of pursuing a career. For example,

> "*Okay, well drug use was definitely a no. It's a no everywhere. Um, if you get caught, you'll get kicked out automatically. "*–Hannah, AD Navy

While Hannah initially stated that drug use would automatically get you kicked out, she changed her statement when asked if testing positive on a urinalysis would get you chaptered right away. She said,

> "*No, they would usually get like a 45-45 which just means like you're confined to the ship, you have extra—we had like, half a month's pay taken away and then you also have like extra duties so you'd be working long hours um yeah and then while they were doing all that paperwork then you would get kicked out so, um yeah that's not good."* –Hannah, AD Navy

So regardless of whether or not drug use would *actually* get you kicked out automatically, the perception was that it would, or it would after a brutal sweeping of punishments. When I asked Wendy what would happen if you got caught using hard drugs she responded,

> "*I don't know, I'm too much of a chicken shit for that, like I said."* –Wendy, AD Navy

There was a perception, regardless, that the punishment for a positive urinalysis test (UA) would vary depending on when you served and what substance you actually tested positive for. According to Lucy,

> "*If you peed hot, pissed hot, before they really cracked down on it then you could like lose a rank and you're sentenced um, you're subject to UCMJ's so depending on what they do they're gonna knock you down a rank or two, then they're going to take your money so you don't get paid for like, anywhere from one month to three months I think. And um, then after you get off of work you work more, you, it's almost like hard labor I guess?... … they don't get to do anything, no weekends, no holidays, nothing. Every single day and they don't get paid for it. Depending on, you know, why you pissed hot and why this other stuff, if it's your first offense, that kind of thing. But after they cracked down they were taking rank and chaptering people out like, weren't putting up with it anymore*." –Lucy, AD Army

Another respondent, Emmy, describes a similar experience where drug use doesn't automatically mean you are kicked out, and she agreed it had to do with the substance being used,

> "*We get randomly drug tested, so if we get caught with it you go, like there were some, when I first got to Alaska there was a guy that like got caught smoking weed and then he tested positive and had to go back, like the next week and he still tested positive [chuckles] and so then they did*

> *it one more---like they gave him like three chances though. So I was really surprised. And I don't know if it's just 'cuz it's weed or like..."* –Emmy, AD Air Force

For the one female respondent, Lucy, who did use hard drugs during service, the threat of being kicked out if caught was not off the radar. Lucy notes that drugs that take longer to get out of the system, like marijuana, re less likely to be used because the chance of being caught is much higher than those, say, sleeping pills, that could be eradicated from the system with a shorter amount of time and ample amounts of water. When asked if she used marijuana during her service, Lucy responded,

> "*Ohhh no no no. 'Cuz that comes up on a piss test! Impossible to get rid of! People who risk it in the first maybe week of their leave, then they can drink water and they'll drink like capfuls of bleach and stuff to try and get that out of the system, which I don't even think is a thing? But hey, gonna do it. So yeah, people do the craziest stuff and I was like, maybe just don't smoke pot, like, is it worth it?"* –Lucy, AD Army

Marijuana was used by one female interviewee—Farrah, the Army reservist. While she did experiment with marijuana (for social reasons once or twice) while still in the military, she was mindful of the drug testing policy, similar to Lucy. Though, she chose to risk the precarious timeline of drugs-in-the-system that Lucy describes. She used marijuana again while serving, but it was after she was no longer in touch with her unit. For all intents and purposes at this point in time, she was out of the military, and so I include her description of the experience in the "after service" section.

The military appears to be aware of their problem with drugs that are less testable and the alternatives to those that can be identified on a UA. Lucy describes how rumors were spread about the physical repercussions of using "spice" (synthetic marijuana) in order to deter servicemembers from experimenting,

> "*Spice was really common. But then they found out that it could cause, okay we, they spread a rumor that it could cause seizures. I don't know that that's true, I do know a guy that was smoking spice when he seized, but it turned out he had an epilepsy he was lying about… …so they were saying that like it ended up being toxic 'cuz it's not regulated and so, but a lot of people smoke spice. I know a lot of people that couldn't get away with pot, spice was their preferred drug*." –Lucy, AD Army

But it isn't just the economic cost that deterred the women from using marijuana or hard drugs during service. The social costs are also important, as Farrah describes,

> "*Yes, well you have to think 'cuz Washington State marijuana is legal for um, recreational use and medical use. When you're in the military, say you live on post, okay? So that's federal property. It's still not legal on federal land. If you live off post, I your spouse were to smoke it, that wouldn't negatively affect you. But I probably wouldn't want people in the military knowing*

> *if my spouse smoked or anything like that. Because the military, it's like a big high school. Everybody talks… …You don't want people to know those things 'cuz if one person knows, 30 or 100 will know."* –Farrah, Army Reserves

This process does change while deployed, and is the perfect example to emphasize how the choice to use drugs rests heavily on the economic costs. For example, Lucy was deployed to Afghanistan during her service, and explains that drugs aren't allowed, but that the UA tests are non-existent so you can't really get caught either, or at least not in the same way as you would when not on deployment. On deployment, the opportunities to be caught are dramatically decreased, so drug use was more normalized. On the other hand, being caught for alcohol on deployment is a huge problem, the opposite of the attitude toward alcohol use when not deployed. She explains,

> "*Drugs are not tolerated there. At all. Even though they're…they're hard to get but they're easy to get depending on where you're at, um. I know a lot of people get their hands on pot and because they don't drug test in Afghanistan you can do whatever you want! Um, uhh there's no alcohol allowed so, uh. Drugs and alcohol technically aren't allowed so like, for some reason drugs are more hush hush so your NCO's are less likely to find out that you're doing it. Or they're doing it with you so it's not a big deal…usually yeah, 'cuz I mean, new soldiers don't know where to get drugs when they go deploy, it's older soldiers that teach us how to be that way. No you really couldn't [get caught] unless someone else caught you and narc'd you out… … but the drinking was a big huge no no and we…I know a guy who got caught with some bottles in his room and he was a staff sergeant he got knocked down to a specialist like. They weren't playing like, with the alcohol. That's absolutely not tolerated. Neither is the drugs technically but…"* – Lucy, AD Army

Generally, the decision to use for drugs for women (and which drugs to use) seems to be largely driven by the potential economic costs – the likelihood of being caught, and the potential punishments depending on how you are caught, when you are caught, and/or what drug you test positive for. Other reasons for abstaining from drug use mirror those prior to service – a lack of interest in illicit substances, or fear of the physical repercussions of use.

***Men***

For the men, drug use while serving seems to parallel the women in the sample. Nearly every male respondent mentions the zero-tolerance policy for drug use (economic cost) while serving, and only two actually used (Austin and Cameron). Riley and Tristan explain the military's drug use policy in a similar way to many of the women,

> "*Well zero-tolerance for anything drug related. I mean we were the first organizations to really crack down on bath salts and spice. Um, you know it's—there's no room for interpretation. You*

> *[test positive] on a drug test, you are fucked. There's no like, slap on the wrist, there's no, 'well you made a mistake but you're generally a good Marine, we'll let it go', it's like zero fuckin' tolerance and they'll do random drug tests like where the entire battalion twelve-hundred Marines standin' in line waitin' to see some guy literally watch the pee into the cup and you sign it and initial and everything and they get tested."* –Riley, AD Marines
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> "*I never—heard talk to anybody that smoked pot or anything like that um, no—no like—no hardcore drugs that I knew of, I know some people got kicked out—right as I was coming into command for doing cocaine um, and uh, that's pretty much the main—the only story that I heard."* –Tristan, AD Navy

Despite similar rates of drug use, the major gender difference I observe between the way that men and women talks about the drug use policy is that the men actually seemed to know people who were regularly using, were chaptered out or punished for drug use while serving, whereas for the women it was more of a perception of punishment. Few of the women mentioned seeing individuals use drugs or even hearing of drug use (aside from the one who actually used), for them it was much more of a taboo. For the men, the knowledge of the severe economic consequences was just as apparent as the women, but many knew individuals that used regardless. However, like the women, many of the men highlighted the "testability" of substances on a UA or "duration" of drugs in the system as a major barrier to drug use for many, but a tool to take advantage of for those that did want to use. Here Riley describes how trying to take advantage of these components led to serious consequences,

> "*My first year in the fleet there was a rumor going around that our motor T section… …were doing a bunch of coke and stuff. And coke only stays in your system for three days so they were trying to figure out like how are we gonna get these guys um so they did d a drug test and like you know a dozen people failed. And they did a drug test the next day and more people failed. Then they did a drug test the next and more people failed and there's no way they're gonna do it four days in a row. It ended up being over a hundred people that –for whether it be weed, coke, molly, whatever it was. Um, because they're like there's no way they're gonna do four in a row 'cuz you always wanted to do it the day after— if you were going to do it the best time for you to do it would be after the drug test 'cuz you had the maximum amount of time 'til the next one, right? Well they just drug tested, that's four days in a row and they got a lot of people and those dudes got kicked out of the Marine Corp…*" –Riley, AD Marines

Cody observed individuals taking advantage of the loop-holes in the drug use policy and his personal experience with discouraging drug use among his co-workers. For him, it was an issue of not looking out for one-another and being able to adequately perform your job duties,

> "*I know in like 2010 or 11, I can't remember which one, uh, spice had first come out, and the Coast Guard didn't have a drug test for it, so I knew of some guys who smoked on duty, and I kind of confronted them about it, I was like, what the fuck man, like it's cool and all that you can't get popped for it, but what happens if we get called out at two in the morning and you're high as fuck. You're not gonna have my back. So, uh, eventually they came up with a way to test*

> *people and those people I think stopped if they were smart… …There were two guys I was stationed with in, uh, down South who uh, they got kicked out for smoking spice while they were in, so I think they definitely had a problem with it 'cuz people, uh, they were able to tell ahead of time, before the command found out, people tried to tell him like hey man, why are you throwing your career, like career over this.."* –Cody, AD (and Reserves) Coast Guard

For Cody it was the social and economic costs that made him frustrated with drug use in the military. A similar observation of drug use is reported by Isaac and Austin,

> "*When I joined apparently there was a big um, a lot of people were using spice, do you know what that is? 'Cuz it couldn't be tested for at the time. And so, that was pretty rampant, um, so they just started all this training of what spice can do to you, and not to do it, and while they're trying to figure out ways to test for it, so just knock it off. This was in 2009. I'd say they kept the push up until 2011. I think that's when they started being able to test for it. Um, otherwise yeah, no drugs*" –Isaac, AD Navy Officer
>
> "*We never smoked during leave, when we were going home for Christmas. Because we* knew *beyond a shadow of a doubt the day we got back there was a 'random drug test' was going to happen. We were very smart about how we did it. Uh, and that went on for probably close to three or four years and nobody ever knew about it."* –Austin, AD Army

It appears that the harshness of the penalty for testing positive or being caught with drugs changes greatly depending on when you served in the military, where you were serving (as the women highlighted the differences during deployment), and potentially the branch you served in. Cameron, one of the two men who did use drugs regularly, describes another important component related to what year you were serving in the military; the needs of the military,

> "*Some dudes smoked weed, and other guys, you know, did methamphetamines sometimes, like, it wasn't like random like everyone's addicted to drugs, but as we're young, people wanna do shit. And they do it. Um, the culture I was in—it wasn't like, 'don't do this'. Well, it was like 'don't do this", but because the war was going on, the repercussions were a lot less than they would be, like, now with all the reduction in forces… …Another guy pissed—pissed hot, or you know, failed a urinalysis for methamphetamine or something. Uh, nothing happened, -- or, they got in trouble or whatever, they probably would've been kicked out of today's Army, 'Get the hell out', you know what I mean? But back then, if you were warm bodied and could carry a weapon: 'We're keeping you in, off you go." Um, so I mean people kinda, yeah, you weren't supposed to do it, you'd get piss tested at any time, that's how it goes, but uh, with respect to the drugs, they still happened."* –Cameron, AD Army

Cameron, like Lucy, describes the conflicting action vs. policy seen in the military, and also provides the idea that age is a large instigator of wanting to use drugs (that typical young experimentation phase that many referenced prior to serving).

Cameron and Austin were the only individuals who regularly tried or used drugs during service. Both indicate that the psychological benefits of drug use are what encouraged them to use. For Cameron, it was bureaucratic idiosyncrasies that left him isolated when he returned from deployment,

> "*…when I came back, a lot of the guys got out. So a lot of the guys I was with and went through everything with were gone. And I didn't want to make new friends, you know, I didn't want to talk to anybody. So I was kind of alone a lot. I hung out with the one dude that I did—you know, the stripper dude, we were smoking weed, drinking, and doing ecstasy or whatever."* –Cameron, AD Army

Even Cody, who didn't use drugs during his service but he caught other people using, attributes their use to the psychological benefits,

> *"…They were kind of going through some shit, so I can kind of understand it, uh, but at the same time I'd tell em like, deal with it in a different way, like not while we're on duty at least*." –Cody, AD (and Reserves) Coast Guard

Austin's hard drug use is more experimental, but he explains that the effects of tripping on hallucinogenic mushrooms changed his outlook and personality for the better, which I would still consider a psychological benefit. For him, it was marijuana in particular that helped ease the stress of military service, and he took advantage of the military testing policies in order to help him continue this use,

> "*So drugs, drugs were a big deal. That didn't stop me [laughs]. You know especially, you know, pot for me was one of those things that allowed me to keep control, but it definitely relaxed me, and if I had any anxiety or anything like that, it definitely, it really does eradicate that very quickly. And so there were moments uh, in the Army where there was a group of us—around 6 or 7 of us—but again, we'd go back to systems. Did we wanna get caught? Absolutely not, because that was a deal breaker. But there was a gap. Because the military has an SOP on drug testing that says, 'You're going to have one a month and they're going to be spaced out X amount of days'. Right, you can't have a drug test right back to back, we knew that. It's on a sliding scale somewhere. WE knew the guy that was doing the drug test. So we said, 'how much notice do you typically have?'. 'Uh, we get about a week before we know something is coming down.' We said okay. So if we have a drug test on the first of the month and we know it's probably not going to come until the next month, the weekend after that test we would all go out and we'd buy a bunch and we would—we'd smoke."* –Austin, AD Army

Austin's story contradicts Riley's story of the back-to-back drug tests four days in a row, and several mechanisms could contribute—be it the differences in branches (Army vs. Marines) or the specific year that each individual was serving.

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To summarize, the patterns of hard drug and marijuana use during service for the men are largely concurrent the women, in that most of the men and women refrain from drug use, be it illicit, prescription, or marijuana, during service. The majority of men express that the military's zero-tolerance policy for drug use was a serious cost, and only two of the men admit to using while serving. Similar to the women, those who did use (two) were mindful of the urinalysis testing regiment and which drugs were more or

less testable, though the men seemed to have come up with safer workarounds for marijuana use in particular whereas the women did not. Both men and women mention spice as a prominent drug of choice for others (not themselves) due to its lack of testability, and one male respondent included the military's needs as a reason for the fluctuating leniency and cracking-down on drug use. While most of the women only discuss the possible consequences of getting kicked out for drug use, more of the male respondents knew someone or had heard of someone who had been punished for drug use, or used drugs regularly. In general, the men explain that drug use was highly frowned upon, but knew many who risked use regardless. For the women, the economic costs led them to believe that use was rare.

Alcohol Use

***Women***

Alcohol is an entirely different experience for the women during service. While the majority of the women in my sample either abstained or only used alcohol in a casual sense while serving, they all describe that alcohol is a popular and prevailing piece of military service. Several of the women detail the culture of drinking in the military,

> "*We talked about getting drunk all the time… …No, I hate to say it but it was just the stereotypical across the board, 6 of the 7 nights of the week I spent at a bar getting shitfaced. Yep. And so, that's where me an all the guys went. Go to the bar, get drunk… …In the mornings sometimes. Mustard on everything."* –Clara, AD Navy
> *"…It was really weird 'cuz it was really strict and everybody knew that you could get in trouble but then on like an unspoken rule it was a rule where like you should get as drunk as possible when like it was seen as a cool thing to be able to drink a lot and stuff so in terms of like culture with it, not like the rules but like the culture within the military*" –Hannah, AD Navy
> "*I think no it was kind of that expectation, everyone's young and drinking and that's just what people do. I don't know if I had really enough forebrain at the time to pick up that it was excessive. Well, by the definition of five drinks at a drink is binge drinking, it was all binge drinking, yeah*." –Laura, AD Navy

The overall discovery is that the benefits of alcohol use greatly outweigh the costs, and the costs are much lower for alcohol than they are for drugs, aside from during deployment. The typical reason for increased alcohol use during service revolves around the social benefits. For example,

> *"I mean, there was more alcohol everywhere and I think there was more pressure to drink, and so you would have to be overt, like I am the DD, or like, if my husband who at the time didn't drink was there, I would have a couple drinks with him. But it was like the beer pong parties and the keg stands and things like that, there was much more pressure to, but I had to basically be like no, I don't feel like it tonight."* –Noelle, AD Air Force Officer

> "*For fun. Mostly. Um, and plus I'm not --I don't have a hard time talking to people but then if you put me in the club setting I suddenly become socially awkward… …I'm like, uhh I don't know what to do so you go grab a drink so you don't look like an idiot just standing there and doing nothing. … I was really socially inept and so, started drinking, I was nervous!"* –Lucy, AD Army

Safety concerns exist when it comes to drinking, especially the potential of becoming an alcohol abuser, but this potential for an alcohol problem also highlights another benefit of drinking that was very evident; using alcohol as a coping mechanism. Lucy describes,

> "*I think it was just new and exciting and then people just kept doing it and kept doing it and then some people have stressful lives or they have things they don't wanna deal with and so they started drinking and then eventually all the partying and the drinking, people don't realize that alcohol is addictive… and so I saw some people that only drank recreationally just start developing a really bad drinking habit, especially I would say it was really really a problem for those that didn't like the military. If they hated the military they were more likely to drink, I think that the biggest stressor was probably the military, but I do know a few people that were having…um marital problems are* really *big in the military, especially if one's spouse isn't there. Even if the spouse is there for some reason the military just puts such a strain on marriages and like parenting and stuff so I would say it's the cause of our stress, like. And then it bleeds out into other parts of our lives*" –Lucy, AD Army

Other female respondents described how alcohol is used as a coping mechanism during service for the stress felt in their lives. For example, Emmy details how she used alcohol to cope with her father's death and how other people drank due to stress as well,

> "*Yeah, everyone drinks. I think just 'cuz it's so stressful…and it's like the only one that they can really use for, like, it's not like they're gonna go to drugs and stuff, so, yeah drinking is very popular I would say. …In the dorms in Alaska I drank quite a bit 'cuz like, that was the time when I was like coping with my dad, and then I kind of stopped a little bit while I was up there and then in New Mexico when I was there I drank quite a bit… … [because I was] stressed out."* –Emmy, AD Air Force

While alcohol abuse is described as a major problem by many of the women, they claim that the punishments for alcohol-related incidents are much less harsh than those for drug use. While few of the women seem to have direct stories of individuals getting kicked out for drug use nearly all of them had stories of fellow servicemembers getting in trouble for alcohol. Hannah explains how depending on how harsh of a crime you commit while under the influence, the punishment varies,

> "*If you had gotten in trouble for alcohol really, like by the police or something that was like you were automatically gonna—you probably weren't getting kicked out 'cuz alcohol was a lot more lenient than drugs, but um you were definitely going to go and like go to Captain's Mast . . . he's able to either kick you out as soon as you're court marshalled or give whatever punishments he wants. If it's just alcohol and if it's like public intoxication not like where you were arrested or anything like that you're probably only going to get like 45-45 which is what I told you, you're getting half months pay taken away and then you're like stuck, you can't go like when you're*

> *stuck on the ship it means you're stuck on the ship, you can't go anywhere…"* –Hannah, AD Navy

Hannah's story is elaborated by Emmy, when I asked what would happen if you got a DUI,

> "*Depending on your commander, is how it would go. Some people would get kicked out, like, pretty quickly. Um… yeah like this one girl everyone hated her 'cuz she kept getting away with shit. She was underage, had a fake ID and got caught at a bar and she didn't even really, like get in trouble… …And then one of my friends, he got a DUI 'cuz he was on base but he blew a .08 which is like the legal limit…and they took a stripe away, so…"* –Emmy, AD Air Force

Aside from personal preference (i.e. not liking the taste of alcohol, lack of interest), the only other reason for abstention of alcohol rests on safety concerns. Regardless of the general use of alcohol amongst men and women (indicating the benefits outweigh the costs), the majority of female servicemembers in the sample are careful to mention that their alcohol use remained at casual levels often due to a heightened sense of vulnerability while under the influence, and fear of the possibility of sexual assault. This was not the case for all females in the sample, but *all* describe that sexual harassment was a regular occurrence in the military, indicating one serious cost to evaluate. Lucy sums the experience up perfectly,

> "*So the rules are different for women just because, um, like everybody talks in the military about this brotherhood like you have this like you know, love for your brothers next to you and to some extent that's true, especially for me, like I loved the people I served with, but if you're not, you know, a man some rules don't apply to you, especially if you're not a white man. Um, so whereas you know you're supposed to be taking care of one another, male soldiers are actually sometimes more predatory towards the women so instead of taking care of us, their goal is to like I don't know, get in your pants or something? So it's almost like they're hunting you really, it's really creepy, it's extremely predatory, they're trying to get you drunk and stuff and so all this stuff they taught you in boot camp about taking care of each other and you know like, you're here for the guy next to you, like you're not really here for the flag or for freedom you're here for the guy next to you, and then you, you leave boot camp and you're in a real unit and you find out that that's not true for you because you're a woman.. So and like, you just have to be more careful. Like where I'm sure a guy could go into a room full of guys and be fine, um, I wouldn't be able to do that. Like I was actually in a situation where I showed up to a party where I thought other women were going to be and I turned out to be the only one and I had to go home because they just were saying these lewd and disgusting comments. And they outrank me and stuff so I can't talk back. They'd like, you know, fuck me up. So, and it was like a really weird and unsafe feeling and especially with people that I'm supposed to be working with."* –Lucy, AD Army

While none of the women in my sample, thankfully, experienced military sexual trauma themselves, many of them told stories similar to Lucy's about friends, coworkers, or just general statistics about women (and men) who had experienced MST. While this threat didn't seem to eliminate the choice to drink entirely, it did lead several of the women who did drink to be thoughtful about their alcohol intake.

***Men***

All nine men in the sample consumed alcohol while serving, at varying rates, similar to the women. The majority of men admit that alcohol is often was used as a coping mechanism, either to alleviate stress or sometimes just boredom. Similar to the women, the men reference other individual's high rates of alcohol use as well. When asked about his drinking in the military Tristan explains,

> "*…Um I think I was using it for stress reduction or whatever as a coping mechanism probably, you know especially on deployments and even sometimes when I was at um—at home you know or I'd go out every once in a while, but yeah I would probably drink more than I would say was healthy but yeah—it was definitely to—just kind of decompress and hang out with people that were all, we were all stressed out so everybody was drinking, you know?"* –Tristan, AD Navy

Cody discusses the way that drinking was used to cope with the boredom,

> "*Yeah, day drinking was super, super big, 'cuz down in Louisiana, it was almost like being back in the small Midwest town again, there was nothing to do but drink or go to the casino."* –Cody, AD (and Reserves) Coast Guard

For Riley, it was until later that he realized he was drinking to cope with his undiagnosed PTSD,

> "*…that's when drinkin' started getting—I didn't realize that I was sufferin' from PTSD at the time I mean, I was like drinkin' a bottle of whiskey daily, every other day. Um, my personal relationships were suffering and I didn't realize it."* –Riley, AD Marines

In addition to the psychological benefits of alcohol, nearly every male respondent uses alcohol for its social benefits as well. Sometimes these two benefits were so intertwined it is hard to distinguish. As Riley elaborates,

> "*…there's a lot of bullshit to deal with in the military and so people—people drink a lot. I would—I mean for some people I would say yeah [it's primarily a coping mechanism] and then some people I would say maybe it's just social drinking but it's hard—it's hard to differentiate the two."* –Riley, AD Marines

Along with the social benefits, and again echoing the women's sentiments, five of the nine men mention the "culture" of drinking in the military, contributing to both the social and psychological benefits of its use,

> "*Oh it was, I mean it was nonstop, talk about let's go get shitty, let's go get shitfaced, get wasted, um, there was very little discussion or anything, it was just part of the culture, that's what it is. I mean, I even, uh, completely illegal, but I mean I even had like a, a bottle of scotch on the ship… …But um, yeah it was completely accepted. Even like one of my best buddies in the Navy, he was Mormon, so of course, he didn't drink coffee or alcohol which, what kind of sailor is that. Um, but he didn't—just anybody—he accepted it as part of the culture."* –Isaac, AD Navy Officer
>
> *"[What if] I told you that beer pong was the Navy's sport of choice, would that explain anything for you?"* –Aaron, Activated Navy Reservist
>
> *"…it's a drinking culture. Like we get off work on Thursday, we get sealed for the day, everybody knows it's field day like I was talking about, we all go to PX and we all buy a shit tone of beer and a shit tone of booze and we go back to our barracks rooms and you're drinkin' the entire*

> *time… …it's just—just the culture man, it's um…some guys don't handle it very well."* –Riley, AD Marines

Sometimes this culture of alcohol and drinking is referenced in coincidence with proving one's masculinity. When asked if he knew anyone with a drinking problem Aaron responds,

> "*Those that bragged a lot about it yes, um, and it was kind of like they're compensating for something or wanting acceptance or appreciation and so that was one way to display their manliness and uh, yeah."* –Aaron, Activated Navy Reservist

Much unlike the women in the sample, none of the men mentioned a fear of sexual assault for themselves as a reason to avoid or limit alcohol intake. However, two men did discuss the impact of sexual assault on their drinking habits. For Cody, it was learning of his wife's sexual assault that drove him to heavy drinking as a coping benefit. This went on until he recognized the economic costs of his alcohol abuse, which led him to slow down,

> "*I went through some kind of personal life stuff while I was in Louisiana, and after that period for the next two or three months I got, I went through a lot of alcohol... …my wife was going to school here and uh, got raped and she called me crying in the middle of the night… …I would just drink and drink and drink when I was off and, and it was all by myself too, I wasn't even socially drinking, just drinking by myself to just get drunk, just to deal with what I was dealing with up here, uh, in my head… …It was pretty much I was late to work once or twice and I was like this is not gonna end well for me. I'd seen too many careers ended because of it… …So like after that I'd still like drink with everyone else, and had beer and it was still high amounts of drinking but not nearly to that capacity."* –Cody, AD (and Reserves), Coast Guard

For Isaac, it was learning of a fellow officer's sexual assault on a young 19-year-old enlisted woman that caused him to decrease his use of alcohol,

> *"...long story short he ended up going back to the ship that night, and sexually assaulted an enlisted girl, um, 19 years old. Ruined her career, ruined his career, he ended up in jail… …basically the captain's boss, the commodore, came on board and, and she did a really great job of telling us, you know, obviously this is what happens when you over use alcohol, and there's you don't have folks kind of keeping others in line, um, but it's not your guys' fault, you know, he's a predator, which kinda eased everyone's fears…There's this poor girl that um, her whole life got turned upside down. I definitely saw other people that overused quite a bit. Um, I Just kinda distanced myself from them, especially after that incident, 'cuz, I almost felt culpable, 'cuz I was like, well I was sober, I mean, I probably should've stepped in a little more um, and uh, I've always felt guilty about it, even though, you know, obviously it was my fault. Um, but it's, it's always been in the back of my mind, and so from that point forward I never really abused alcohol*." –Isaac, AD Navy Officer

Other costs of alcohol use are highlighted by men in the sample, similar to the women. These deterrents of alcohol range from physical costs, such as not enjoying the feeling of being drunk, economic costs like not having the time for it, and social costs, like trying to be a positive mentor for other individuals. As Ray, who was a chaplain's assistant in the Army, explains,

> "*I never did anything, I pretty much stopped everything. Wasn't at the point where I needed to drink to get blackout drunk anymore. Um, tried to be a good example and I think after the discipline I learned in basic training and all that stuff and realizing the impact of what the human nature of being a chaplain's assistant is just someone to listen and be real with, someone that can actually do and be to people. I realized you know, this is something I need to kind of step into this role, try to set a good example, um, try to take young guys under my wing…"* –Ray, AD Army

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In general, both men and women use alcohol during service for the most part, and at variable rates. All-embracing, it appears the men consume alcohol at greater rates than the women, but both describe a prevalent alcohol culture. While fear of personal MST isn't something that impacts the men's consumption (as it does the women's), sexual assault in the lives of co-workers and significant others does alter the men's intake of alcohol.

Summary of Men & Women's Substance Use During Service

Substance use *during* military service is a different story. One of the core findings is that the costs of using drugs, both illicit and marijuana, greatly outweigh the benefits, in *most* scenarios for these respondents, yet what they describe as regular or normal for others varies across gender, particularly for drug use. On the contrary, the benefits of alcohol use seem to outweigh the costs, although with some caveats.

Overall, substance use amongst the female respondents is low during service, with alcohol use being the most common, though low among my sample of women. Despite the low rate of drinking among my sample, all nine women explains that alcohol use was prevalent for others throughout their service. If drugs are used, they are selected based on testability or availability. In general, it appears that a variety of costs, mainly the *perception* of the costs outweighs much of the potential benefits of drug use during service for the women.

These patterns are similarly observed for the men, with several slight differences. More of the men knew of individuals using drugs, so it is less of a "forbidden" element of service than it is for the majority of women. Regardless, men still use drugs at low rates, similar to the women. In addition, the men tend to drink at higher rates, and more so for handling stress. While the women describe their coping with alcohol as a means to unwind, more of the men directly indicate that they were self-medicating or

using to cope with stress during service. Both men and women referenced an apparent "culture" of alcohol in the military. Despite the relative persistence of drug use in the military indicated by the men, the benefits of alcohol use tend to overshadow the costs in most circumstances for both men and women (at least to some degree), albeit the threat of sexual assault excludes some women from drinking in excess. Similarly, sexual assault affects men's rates of alcohol use, but not in the same ways or for the same reasons. Other costs of alcohol use, including social, economic, and physical, obstructed both men and women from drinking in excess at different points in their service as well.

*Substance Use After Exiting the Military*

Illicit & Prescription Drug Use

***Women***

The trends of illicit and prescription drug use following military service echo much of the experiences prior to service, though some differences do exist. None of the women in my sample have used or tried illicit drugs since exiting the service. The reasons are based on maturity and aging for those that did experiment with drugs during or prior to service, and for those that didn't, the reasons are the same as before serving— a general lack of interest and fear of the physical and psychological costs. Lucy, who used drugs during her service explains her changed opinion on them,

> "*Seattle's really free with drugs, like, I was at the pride parade and it was like 'you wanna do 'shrooms? I'm like, 'no thanks!'. Like I'm just gonna stand here sober [laughs]. And I don't mind being that person that's not the only one doing it now, I think that's what really I got out of it, is that I'm mature enough where everybody around me could be doing it and I'm like nah, no thanks!"* –Lucy, AD Army

Wendy's reason for not using is similar to others' reasons prior to service. When asked if she uses hard or recreational prescription drugs now, she said,

> "*No. No no no. [laughs]. I'm a goody-two-shoes"* – Wendy, AD Navy

To reiterate, hard drug use after service was not something worth even a conversation for these women. When I asked them their reasons for not using, it reflected the same reasons for not using prior to service, where the costs of using outweigh the proposed benefits.

***Men***

Like the women in the sample, use of illicit or prescription drugs after service is similar to their trends of use prior. Only one man in the sample uses illicit drugs after serving in the military. For Austin, it is the psychological benefits of hallucinogenic mushrooms that encourage him to periodically use the drug. For the other male veterans in the sample, the physical and/or social costs of drug use and addiction are the major impediments to use. As Isaac explains,

> "*But then there's stupid, like why are people doing bath salts, or why are people the crazy shit they do. Um, that stuff I don't, I don't understand and never will. I've got sympathy for people that get hooked on opiates, simply 'cuz I saw my brother do it, um, and it was just, uh, it was just a monster for him, that he couldn't beat… …But totally terrified of drugs because he couldn't beat it."* –Isaac, AD Navy Officer

This fear of addiction was reiterated by Aaron,

> "*…I haven't done anything that's like hard, um psychedelics or anything along those lines. It's just one of those things where I happened to [have a certain] personality and if it does something amazing for me then I'll wanna do it more and I have too much that I love and enjoy to bother going down that road."* –Aaron, Activated Navy Reservist

For Ray, who used hard drugs prior to service, the physical, economic, and social costs deter him from using now. In particular, fear of other people finding out of his use or potentially losing his job at the homeless shelter, along with the health consequences of abuse, lead him to continue to avoid drug use today.

Interestingly, several of the male veterans allude to the idea that the military (or the VA in this case) overmedicates them with prescription medication, yet frowns heavily on marijuana use for its medicinal properties. Both Riley and Cameron noted these contradictions. Cameron discusses this contradiction below,

> "*I think it's funny that opiates are legal as far as medical prescriptions and things like that, easy to get for the most part. Um, they gave me 80 fucking pills after my surgery, I only need them for two days…There you go. So it's like those are okay, and they'll willingly help you get addicted to those, but don't you fucking smoke weed!"* –Cameron, AD Army

For Riley, just mentioning the potential healing benefits of CBDs found in marijuana to a VA psychiatrist had him meeting regularly with substance abuse counselors, despite not ever having issues or even having tried hard or illicit drugs *or* marijuana.

Overall, Austin is the only veteran that uses drugs now, and he used drugs during service as well. All other male participants avoided hard drug use, indicating that the costs greatly outweigh the benefits.

Interestingly, the idea of over-medication by the VA was also noted by one of the female veterans, Lucy, though she highlighted this observation for injuries that took place *during* service, rather than after.

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It appears that men's and women's attitudes toward hard drug use following service are, for all intents and purposes, the same. The majority abstain due to similar reasons of abstention before or during service. For those who did previously use, new priorities (and costs), like family and career, or simply outgrowing experimentation seem to outweigh the perks of using for both men and women.

Marijuana Use

***Women***

Marijuana use after serving is much more common, or at least much more discussed by the female participants. Three of them admit to having used or tried marijuana since exiting the service; Wendy, Farrah, and Clara, and the primary reasons rests on the potential medicinal properties, particularly stress and pain relief (physical/psychological benefits). For Farrah, the Reserves Army Veteran, marijuana use became more acceptable for her once she had stopped communication with her unit, prior to being chaptered out. While Farrah did try marijuana while still in touch with her unit at times, I include her insights on this one particular occurrence here, rather than in the "during" section, as she was, for all intents and purposes, out of the service when *this* experience took place. She explains,

> "*Once I wasn't communicating with my unit, um, I was like self-medicating myself… … I was almost self-medicating myself for my mental illness, um, 'cuz I was pretty depressed and you know, it helped me shut off my brain. And I have a lot, like, a broken record of compulsive thoughts in my head when I'm not medicated. And it made- and the only way I could explain it back then, it made me feel less smart… …And so marijuana, I explained, that it helped me feel stupid and I turned off my thoughts. I wasn't completely gone it just like helped bring me down to a normal level that I felt like…maybe other people experience? …Now that I'm actually medicated there's a huge difference, you know. So, I get why I was doing it, I just still at that time did not know."* –Farrah, Army Reserves

Wendy describes a similar occurrence of experimenting with marijuana for the physical and psychological benefits associated with it,

> "*…Here recently I didn't smoke it but I tried an edible. Yes. Um, I tried it because I have chronic pain. Um, it helped with the pain. I did fine while I was on it because it wasn't, it wasn't in smoked I guess. Um, yeah it wasn't fully the same um, now when I was coming back down off of it my anxiety hit. That's when I started having issues [laughs]."* –Wendy, AD Navy

Emmy is the only respondent who uses marijuana regularly after exiting the service, and her reason for using is based on physical benefits and also the aspect of the legality of marijuana in Washington. When asked why she starting smoking marijuana again after exiting the service, Emmy replied,

> "*'Cuz I hadn't, I mean, 'cuz I could now, it was legal so I as like oohhh. Well when I first got back I had nothing to do [chuckles] so I was bored, so um, probably like once or twice a day [I used marijuana]. I probably smoked a lot more before [serving].*" –Emmy, AD Air Force

For those who were opposed to using marijuana, the reasons are largely based on two costs—economic and physical/psychological, similar to the reasons prior to service. Despite the psychological and physical benefits that marijuana produced for Wendy, she still chooses not to use it regularly, due to the economic costs. She explains,

> "*Like no, as much as it helps I'd have to be on it 24/7 like this and I can't do that, I can't afford that [laughs]. ...I was thinking about looking into that because you can buy them over in Sequim in mint form. But they're $30 a tin for 30 of them, so I'm like, woo! That $30 can go toward groceries!*" –Wendy, AD Navy

Noelle describes a physical aversion to marijuana and emphasizes that the economic costs of time and money are major deterrents as well,

> "*No, I just, I don't have time for it, um, I went to a Dave Matthews Band concert once and I think it might have made me sick with all the contact high that I got, so I was just like, I really have no desire. And it's expensive and I'm a broke graduate student. I can spend my money on yarn, or the brand new bike I just bought.*" –Noelle, AD Air Force, officer

For Farrah, once her tolerance for marijuana increased, it wasn't worth the effort to combat her mental illness (psychological/physical cost). This led to her realization that she should go back on her prescribed medication,

> "*Nope I still don't use it now, nope. No, no that was, um, maybe a couple of months. And then I decided after a while I felt like um, I was having to smoke more my tolerance was much higher, um, and I felt like it wasn't helping as much as it had previously. And since that was the using I was using it, I wasn't—like, if you enjoy as a side effect, for me that's a side effect or a bonus. Like okay, so you get to relax, and that's enjoyable, great. For me, I had a different purpose so once that purpose was not being filled any longer, I knew I had to get back on my medication.*" – Farrah, Army Reserves

While a couple of the women mentions the new legality of marijuana in Washington as being enticing, the physical and/or economic costs of the drug dissuades them from trying it. As Lucy describes,

> "*Yeah, still allergic, but you know what? I don't even have like the drive to be like maybe I should try it one more time. I mean, it's legal here and stuff, but I just…ugh. I mean it's not as bad as San Francisco but it's still…it's starting to get like everywhere in Seattle someone's smoking pot and like, I don't think badly about anybody that does it but I'm like crap, that smells terrible!*" – Lucy, AD Army

Laura has a similar mindset, mentioning the legal state of marijuana, but still the physical costs,

> "*I do think there's also this interesting you know, it's legal in Washington, um, but still it's illegal federally you know. I have, having had that clearance for me I think other people maybe not as much as an issue but even if it was it's still smoking…which is bad for you. Yeah and I mean there's a lot of research that shows like the cannabinoids can be really helpful, um, but the VA is still kind of waffling on whether or not they'll accept that." –Laura, AD Navy*

Across the board, marijuana use seems irregular and used mostly for its physical and psychological properties, be it to help with stress, boredom, or cope with a medical problem. Those who don't use marijuana attribute it to the physical or economic costs of the drug, despite the current legality of marijuana in Washington.

***Men***

More men have tried or regularly use marijuana following service than women. Five of the nine men used marijuana after service, yet only three of the men continue to use marijuana regularly. Two even admit that they prefer marijuana to alcohol these days (Cody and Austin). The primary reason for using marijuana for the male veterans is its psychological benefits, both for coping with stress and relaxing. In addition, even if they aren't a regular user of marijuana, or even if they have never tried it, many mention that they know others that do. As several veterans explain,

> *"Drug wise, again, I'm not big into that but I don't really mind if other people do it 'cuz I mean, I know a lot of, I have a lot of friends who, you know, smoke recreationally or medicinally for PTSD purposes or whatever else."* –Noah, AD Army
>
> *"…I find that weed does relax me. Um, it helps escape a little bit. So I've probably become a little more—probably the same with weed, I guess. I probably haven't changed my opinion on it. I smoke more now than I did before., but you know, I don't smoke before work or when I drive and shit like that."* –Cameron, AD Army
>
> *"Especially with pot being legal now, I mean this is—and it always was—a recreational thing to me. Um, it's to relax, it's to unwind, it's to get perspective on things, and it's just, I like that feeling a lot more. So when people would rather come home and drink a six-pack and then go to bed, I'll pass on that. I'd rather, I'd rather smoke… …I know a lot of veterans that smoke weed, too. Not a* lot*, but a decent amount."* –Austin, AD Army

For those who don't use marijuana, it is primarily the social costs that prevent them. Despite the legality of marijuana in Washington State, social and physical costs still keep Isaac from experimenting with marijuana,

> *"I think weed for me, in the past I had a mental barrier to it 'cuz it was illegal. 'Cuz I'm like, the rule follower, I'm not gonna do it. Um, but now, whatever. It's legal, I don't care. No never [have I tried it]. Never, um, I'm curious, but I think my wife keeps me from even trying it. She probably thinks I'll like it too much."* –Isaac, AD Navy Officer

Other male veterans mention the legality of marijuana in Washington as well, similar to the women veterans,

> "*I've smoked pot once after I got out but that's just 'cuz we're in Washington and uh, my friend that got out too was just like, 'let's smoke pot one time.', and I took like one tiny little hit and then—then barely felt a high and that was you know, it was just to do it."* –Tristan, AD Navy

Marijuana use is much more prevalent than other drug use after service for the men in the sample. The primary reason for use is experimentation (due to the legality of marijuana in Washington) or the psychological benefits, such as coping or relaxing. Those that abstain from use, or only tried but did not continue, attribute their behavior to the social costs.

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In general, men's marijuana use is higher than the women's, and more use marijuana regularly. Despite these differences, both men and women veterans mention the legality of marijuana in Washington. However, the men used this as an excuse to use, whereas the women still view the costs of use to outweigh the benefits for them in particular. Both men and women veterans mention the VA's conflicting stance on the medicinal benefits of marijuana yet outwardly positive promotion of prescription medication. Both men and women typically use or tried marijuana for its psychological benefits.

Alcohol Use

***Women***

Alcohol is more normally used after service than before for most of the women, though the levels drop dramatically from the amount consumed during service for those who used alcohol frequently in the military. The primary benefits of using alcohol after service appear to be the physical benefits (enjoying the taste), psychological benefits (stress relief or to induce relaxation), and the social benefits (bonding with co-workers or having fun with friends). For example, Clara, who teaches 5th grade emphasizes the social benefits of alcohol after serving,

> "*Um, I blame the teachers at the school. Yes, I did actually start drinking again. The staff at the school have what we call "French Club" because we can't send emails about 'hey, let's go to the bar'. So we say let's go to French Club. That sounds official.*" –Clara, AD Navy

On the other hand, Noelle and Lucy use alcohol as a source of relaxation after a stressful day,

> "*I don't know if this is any more or less than when I was in the military, but if it's like a really crappy day I'm gonna go home and drink a beer, you know?"* –Noelle, AD Air Force, officer
> "*Yeah it's a, you know, just kinda nice to relax and have one or two drinks."* –Lucy, AD Army

Out of the nine women I interviewed, roughly five tried or drank regularly prior to service, and seven drink to some degree following their service. Two explanations are given for why rates of alcohol consumption increased from the levels *before* service; age, and learned behaviors during military service. Potentially, now that these women are no longer in a more heightened state of vulnerability or stress that is present during service, refraining from drinking in order to retain control is no longer as much of a primary cost of alcohol use. Instead it is replaced with 'maturity', as well as habit learned during service. When asked if she drinks now after serving, Emmy responds that she does every once in a while. When asked if this is more or less than she drank while serving, Emmy explains,

> "*Less, way less, probably less 'cuz I had just turned 21"* –Emmy, AD Air Force.

Lucy clarifies that her alcohol use now is determined heavily by her military service, and also by her age,

> "*I'm glad now that I'm older I'm like, you really don't have to drink a whole bottle a night, you can just have two and stop! I would say that like, if I hadn't joined the military, I don't think I would drink. I think that drinking is something I do because I learned to like it in the military. And I do know that like, you know if I wanna relax that's what you do, you grab a beer and grab a drink, but before I wouldn't've done that, you know? I probably would've just read a book or something. I'd relax with something different, but now you know I'm like, yeahhhh I'll just grab a glass of wine." –Lucy, AD Army*

The aspect of age sparking alcohol use while serving is discussed by Lucy when she rationalizes why she thought drinking was so excessive while she was serving in Germany also,

> "*I think in Germany especially its popular because we can't drink at home at our age? So, we don't have to wait 'til we're 21, we can go out to clubs now, in fact like everybody going clubbing is already our age so. Um, and then you have this new found freedom. Like you didn't have it before but you have it now. Like you're not in your parent's home, nobody's watching you, nobody's making sure that you're in at night, nobody's texting you to see if you got home. You don't have any responsibility really because a cab's going to take you home or you can get on the train home*." –Lucy, AD Army

Hannah, who was stationed in Guam during her service, describes the lack of responsibility felt in the military as well,

> "*There's like a huge—there's a lot of bars—there's like a night life actually in Guam, and when most people are there they had no, I mean everybody's housing was paid for and food was paid for and all this stuff so nobody, everybody's paychecks just went to like having fun."* –Lucy, AD Navy

Lucy and Hannah's explanations shine light on the idea that the lack of responsibility in the military, in terms of bills, having to secure housing, etc. encourages drinking, similar to how drinking levels rise for

new college students. Therefore, it's not hard to assume that the sudden responsibility thrust onto you after *exiting* the service could lead you to prioritize spending money on alcohol at a much lower level than say, housing or groceries. Lucy's description of her transition out of the military reinforces this idea,

> "*I was unprepared, I think that's what made it really hard, like they give you classes and stuff but you're never, not really prepared, and you're not prepared to go out and get a job. I didn't know how to write a resume. And I didn't even know what jobs I was qualified for… …I didn't know where to job hunt, I didn't know how to sign up for my healthcare. I missed my dental period because nobody had told me really that you're supposed to do it right away! I didn't know where the VA Hospital was, I didn't know how to buy a car, I didn't know how to do any of that stuff and I was so unprepared. I was unprepared 'cuz like somebody else had been paying for me to live somewhere and feeding me and stuff… …And I didn't even know how to apply to school, I didn't know how the GI Bill worked, I didn't know how to fill out my forms, I just didn't know anything and…I just was like wellllll, I'm gonna have to figure this out but that was really hard 'cuz I'm like, who do I call?!"* –Lucy, AD Army

For those who did consume ample amounts during service, the social costs of drinking seem to be a primary reason for their lowered use of alcohol now, particularly because of their family. Clara, who drank heavily during her time in the Navy explains,

> "*I quit drinking because of my son. I changed my choices. The neighbor and I were hanging out. It was summer time. Between Jessie and I we put down three quarters of a fifth of tequila, half a fifth of vodka, and a case of beer. Everyone else threw up that night. I went home and passed out. The problem was, by three in the morning, my son wanted to go to bed and the problem is I couldn't walk three houses down to tuck him in bed. And he fell asleep in a lawn chair in Jessie's front yard by the fire because he was getting cold. I woke up the next morning and realized my priorities were a little backwards and I quit drinking."* –Clara, AD Navy

In total, alcohol use for the women veterans is more prevalent after serving than before, but this was largely due to habits learned in the military or age and maturity. In other words, the increased drinking *during* service often is attributed to immaturity and lack of responsibility. Despite this increase, the reasons for drinking after service aren't exceptional – social benefits and physical/psychological benefits are the primary explanations for choosing to drink. For those who desist, it is due to the same reasons that they didn't drink prior to serving –not enjoying the taste or effects, because of their family, or because they didn't have a purpose for it. As Carolyn describes,

> "*I'm not one of those, 'I have to have a beer every night before I go to bed', or I don't need to have a glass of wine to unwind…I unwind by reading my Kindle, or playing a game on my iPad. Like, I know that sounds kinda weird, but that's just…That's what I enjoy. Or spending time with my family, or like, sometimes when I'm having a rough day or whatnot and he (referring to her son) climbs into my lap it's just like, 'okay, all's right in the world.*'" –Carolyn, AD Army

***Men***

All nine male veterans have consumed alcohol since exiting the service (although Cody technically has not exited the service, he is still part of the Reserves). The rates of use vary largely across the veterans, with some using at heavier rates while others have now substituted alcohol for marijuana. Similar to the women veterans, the men attribute their changing drinking habits to a variety of costs and benefits.

The majority of male veterans drink at casual rates, indicating that the costs of heavy drinking outweigh the benefits that were perceived during service. Though these costs significantly decrease heavy drinking more recently, the social and psychological benefits of at least occasional drinking still encourages all the men to try or casually use alcohol after exiting the service. For example, Noah discusses some of the social benefits to drinking,

> "*I end up being a stay-at-home parent most of the time. Um, you know I have, so I sing in a choir, a community choir here and so I end up becoming good friends with um, a lot of the other folks in the choice and so like we'll go out and you know like that. And then you know other like, student veterans as well, like there's a handful of folks like, I like to hang out with and um, you know we'll go out for drinks or, yeah, we, we drink a lot. Well I mean, not a lot, but like that's what we do a lot of the time, is going and getting drinks."* –Noah, AD (and Reserves) Navy, Officer

Despite these benefits, the costs of alcohol use play a significant role in determining rates of alcohol use for the male veterans. Riley is one of the few veterans to state that he drank heavily when he first exited the service, but the social costs led him reconsider his priorities. As he describes,

> "*…I would go to the store and I would get a bottle of tequila and six pack of tall boys and every time I cracked a tall boy I would take a shot of tequila… …I'd just drink tequila 'til I fell into bed and passed out. Because I was—I mean I was just self-medicating, and at the time my actions weren't affecting anyone else. I was—I was getting to work on time, I was paying my bills, but it wasn't until I became a family man that those habits started to demonstrate themselves, and affect my family and it was…It was a hard transition."* –Riley, AD Marines

For the rest of the men in the sample, physical, economic, and social costs primarily debar heavy drinking. For example, Cody explains the physical and economic costs of drinking,

> "*I don't like drinking anymore… …like in Ireland I drank 'cuz we'd go on tours of like Guinness, or like sample a little bit of Jameson, but it's not the type of drinking where's it's drinking to get drunk anymore, it's have a glass of wine. Like my wife and I would socially drink and stuff and we, or like how about we used to uh, like go through five or six bottles of wine per week, and uh, we did, you probably heard of it, the Whole 30, we did that, uh back in January… …and we really liked it… …So I mean we went from drinking five or six bottles a week to we don't even buy wine anymore. Like it's, I mean it saves us like $60 or $70 bucks a week on our grocery bill which is cool."* –Cody, AD (and Reserves) Coast Guard

For Cody, decreasing his drinking habits saved his family money and is a healthier option. In this sense, the social and economic costs of heavy drinking lead him to cut back substantially. Time also seems to play an important factor in rates of alcohol use for the men. It appears that the longer the individual has been out of the military, the more their drinking habits begin to level out. Cameron, who admits to drinking more after his medical discharge, explains how health, alongside with age, are significant factors that influence his decrease in drinking now,

> ""*I was medically retired in 2008 for Post-Traumatic Stress Disorder and Traumatic Brain Injury. Uh, I had some concussions and head trauma when I was overseas, and obviously some mental health stuff with PTSD, so I came home from the war from '06. I was getting into a lot of fights. I would have really bad mood swings, irritability, you know crying at work and just like couldn't control any of my emotions. There probably was more drinking and things like that… …Um I don't drink much. Like even now, I had two drinks with a buddy from the Marine Corps, buddy of mine, and after I got up from the bar I was like, 'oh'. Like the bubbles or whatever they say gets to you. I think I felt like that. So I feel like I'm getting old in that regard… …Drinking is cool or whatever but I just don't care for it as much as I used to. Like I said, it makes me feel shitty. I don't want to have a huge beer gut and become some slob like that."* –Cameron, AD Army

Tristan corroborates this change in drinking habits over time, explaining how just removal from the stressful environment of the military has greatly alleviated his drinking,

> "*Yeah my drinking now is up to like a good healthy like, maybe like a couple beers a week, pretty spread out, you know. Yeah I don't==I was worried a little bit while I was in for about binge drinking, not alcoholism, but um definitely probably binge drinking while I was out on deployment you know, but now absolutely I feel I got a handle on the stress levels and I'm not deploying anymore and so yeah—my drinking has gone down."* –Tristan

It appears that the majority of the men consume alcohol after having exited the service, but the rate of consumption decreases dramatically over time, due to a variety of social, economic, and physical costs associated with binge drinking. These patterns are similar to the women veterans, who also use alcohol casually now, if at all. For several of the men, alcohol use has dramatically decreased and been replaced by marijuana. These men state that they use marijuana to "unwind" or "relax", similar to how several of the women (and men) use alcohol casually.

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Overall, alcohol use following service is quite prevalent, but at much lower amounts of consumption for both men and women veterans. Casual drinking trumps binge drinking for the majority of men and women. While the women acknowledge changes in alcohol consumption due to maturity and

responsibility, the men seem to have changed their behaviors due to health and aging reasons. In some scenarios, the men seem to have substituted the psychological benefits of marijuana for alcohol. Both men and women do, however, use alcohol today in order to socialize or unwind.

*Summary of Substance Use After*

Hard drug use drops dramatically after service, as only one veteran, male, still uses hallucinogenic mushrooms regularly. Despite the relative non-existence of hard drug use, several veterans, both male and female, use marijuana regularly or have tried it; a substantial increase from during service, and but similar to before. Marijuana is primarily used for its psychological benefits and for experimentation, partially attributable to its legality in Washington. Alcohol use has increased for both men and women after service since *before*, though it is consumed much more casually than it was during service for those who did drink heavily while serving. This change from during service to after is accredited to advancing age and maturity, increased responsibility, family, and health related reasons. In these cases, the costs associated with binge drinking exceed the benefits, yet the benefits of alcohol in low quantities outweigh the costs for those who continue use.

## SUMMARY & CONCLUSION

With this analysis I aimed to shine light on how behavioral pathways may be influenced by operation within an organization. In particular, my goal was to provide direct research on the operation of the military and the socialization that takes place within, paying close attention to differences across gender. In addition, I looked specifically at substance use and how the military shapes rates of use across gender. In order to pursue this goal, I conducted a mixed-methods analysis of substance use for male and female veterans in Washington State across the military life course.

One of the core findings amongst both the female and male respondents is that their general substance use prior to service seems to mimic the general civilian population. In other words, it doesn't appear that a history of substance use (a known "risky behavior", which has often been described as a selective factor into military service) is a precursor to joining the military, at least in the majority of cases

I observed. Instead, it appears that it is whether or not the costs outweigh the benefits of use (or vice versa), and this varies from substance to substance. In fact, one male respondent (Aaron) labels himself an "adrenaline junkie" yet abstained entirely from drugs and mostly from alcohol prior to service. Regardless, men and women's substance use roughly mirrored each other, with minor differences, mainly in the rate of alcohol use. This is supported by the results of the cross-tabulations and regression analyses. Additionally, the specific costs or benefits that are most important in dissuading or promoting substance use vary slightly across gender.

Overall, substance use amongst the male and female respondents is relatively low prior to service, with alcohol use being the most common, followed by marijuana and then illicit drugs, though men tended to use alcohol at higher rates. It appears that a variety of costs outweigh much of the potential benefits of substance use, though some benefits did prevail in specific circumstances (especially in social scenarios), and most notably with alcohol. Both men and women appear to use the varying substances at similar rates. The most obvious difference is noted for alcohol consumption. These findings are corroborated by the quantitative analyses, though not always statistically significant, indicating the challenges of small sample size, but also the similarity in substance use across gender. In addition, the primary costs and benefits of use also vary slightly across gender. For drug use (prescription, hard, and marijuana) women tend to indicate that the physical/psychological costs are the strongest deterrent with men favoring the social costs. For alcohol, the social costs succeed in deterring many of the women, while the social benefits encourage consumption for the men.

Substance use *during* military service is a different story. One of the key findings is that the costs of using drugs, both illicit and marijuana, greatly outweigh the benefits, in *most* scenarios for these respondents, yet what they describe as regular or normal for others varies across gender, particularly for drug use. On the contrary, the benefits of alcohol use seem to outweigh the costs, although with some caveats. Substance use amongst the female respondents is low during service, with alcohol use being the most common, though low amongst my sample of women. Despite the low rate of drinking within my sample, all nine interviewed women explain that alcohol use is prevalent for others throughout their

service. If drugs are used, they are selected based on testability or availability. In general, it appears that a variety of costs (typically economic), though mainly the *perception* of the costs, outweigh much of the potential benefits of drug use during service for the women.

These patterns are similarly observed for the men, with several slight differences. More of the men knew of individuals using drugs while serving, so it is less of a "forbidden" element of service than it is for the majority of women. Regardless, men still use drugs at low rates, similar to the women. In addition, the men tend to drink at higher rates (which is supported by the statistically significant regression coefficient), and more so for handling stress. While the women describe their coping with alcohol as a means to unwind, more of the men directly indicate that they were self-medicating or using to cope with stress during service. Both men and women reference an apparent "culture" of alcohol in the military.

Despite the relative persistence of drug use in the military indicated by the men, the benefits of alcohol use tend to overshadow the costs in most circumstances for both men and women (at least to some degree), albeit the threat of sexual assault excludes some women from drinking in excess. Similarly, sexual assault affects men's rates of alcohol use, but not in the same ways or for the same reasons. Other costs of alcohol use, including social, economic, and physical, obstructed both men and women from drinking in excess at different points in their service as well. Again, these findings are upheld by the quantitative analyses. While the women tend to have a negative coefficient for each type of substance used (excluding hard drug experimentation), the results are not statistically significant (excluding alcohol use), indicating that gender differences in substance use are not likely, or at least not in this sample. Still, the negative coefficients indicate that women tend to use substances at a slightly lower rate than men overall, so a larger sample size may be able to reinforce this with statistical significance.

Substance use after service is much different than during service. Hard drug use drops dramatically after service, as only one veteran, male, still uses hallucinogenic mushrooms regularly. Despite the relative non-existence of hard drug use, several veterans, both male and female, use marijuana regularly or have tried it; a substantial increase from during service, yet similar to before. Marijuana is

primarily used for its psychological benefits and for experimentation, partially attributable to its legality in Washington. Alcohol use has increased for both men and women after service since *before*, though it is consumed much more casually than it was during service for those who did drink heavily while serving. This change from during service to after is accredited to advancing age and maturity, increased responsibility, family, and health related reasons. In these cases, the costs associated with binge drinking exceed the benefits, yet the benefits of alcohol in low quantities outweigh the costs for those who continue use. Once again these findings are validated by the quantitative analyses, though not statistically significant. The regression analyses indicate that gender differences, if any, are subtle, and this is verified in the cross-tabulation data as well.

In conclusion, while the majority of the results of the regression analyses are not statistically significant, a larger sample size may be able to provide more insight into patterns of substance use across men and women. Generally, men tend to use substances at a slightly higher rate, and this was most noticeable with alcohol and marijuana. Regardless, gender differences are subtle, indicating that this era of male and female veterans may be more similar than other eras of veterans in the past.

Despite the strengths of my study, several limitations must be addressed. First, due to the low sample size in my survey, it is hard to draw adequate conclusions regarding the trends in substance use for marijuana, prescription, and illicit drugs. Although it is possible that rates of drug use are indeed very low, having a larger sample would allow me to extrapolate a more viable conclusion on that point. Low sample size also makes it difficult to uphold statistical significance. A larger sample size in the future could potentially change some of the coefficients in the regression to be statistically significant.

Second, in relation to the first point, the survey data collected was not random, and thus it is not generalizable to the entire population of post-9/11 veterans in the United States. It is not even generalizable to post-9/11 veterans living in Washington State. However, the aim of my research is not to apply these concepts to all veterans –it is simply to provide a picture of what substance use may look like for this sample. For that reason, I collected as diverse of a sample as possible, in order to try and gather a variety of experiences, rather than the most common. Despite this focus, it appears what I did capture was

the most "average" experience for the majority of military men and women. Regardless, while generalizability is important, qualitative research is invaluable. These qualitative data may be able to provide insight into a phenomenon, as well as help provide evidence of the processes through which one mechanism influences another. I believe that with this research I am able to highlight some of the mechanisms that encourage and/or discourage substance use, and how they vary across gender.

Third, it is important to consider the role of social desirability bias in answers given to the drug and alcohol questions, as well as the mental health and stressful life questions (i.e. sexual assault, homelessness, etc.). It is very possible that an explanation for the low levels of drug use are due to respondents not feeling comfortable discussing their substance use behaviors, either in the interviews or the survey. As the survey and interviews roughly mimic each other in findings, it is possible that some of that bias is reduced, however it is plausible that many individuals who do use substances heavily refrained from participating in this study at any level and are thus excluded entirely from the sample.

Fourth, the alcohol and marijuana indices weigh each question equally, assuming that each question in the index is as important in understanding substance use as the next. This may not actually be the case, as some tendencies (such as drinking during school or work) may be more or less indicative of dependency than others.

Fifth, the cross-sectional and retrospective nature of the data make it difficult to draw conclusions about the military life course in the most accurate way possible. As not every question in the survey was asked retrospectively for each time frame, the data are limited in exploring how certain variables (i.e. age, marital status, number of children, etc.) may affect the individual at each stage in the military life course.

In general, substance use in the military is a complicated matter. Rates of use vary greatly from substance to substance and across the military life course. Rates of use also vary across gender. Most importantly, the costs and benefits associated with use provide great insight into why I observe the rates of substance use found in the survey data. It appears that men and women weight the costs and benefits of substance use differently in order to arrive at slightly similar conclusions. Future research should aim to expand upon these data with longitudinal survey data or a larger survey sample that can provide the

amount of in-depth detail that I was able to include in my survey. Overall my research contributes to the literature by providing an in-depth mixed methods analysis that compares rates *and* reasons behind substance use across a variety of substances for men and women across the military life course. With these analyses I am able to shine some light on how the socialization processes of an institution vary across gender. I am also able to provide some direct research on the operation of the military, specifically, yet also try to provide understanding into how behavioral trajectories might be transformed by operation within organizations in general.

# Chapter 4
# CONCLUSIONS

The purpose of this research is to provide an exploratory analysis that addresses patterns of behavior while also highlighting the unique experiences of individuals. I aim to shine light on how behavioral pathways might be altered by operation within an institution, and how the socialization process of organizations may vary by sociodemographic characteristics. To pursue this feat, I chose to use the United States military as a case-study of total institutions. I specifically analyzed patterns of substance use across the life course, in order to examine whether or not differences exist across a variety of characteristics in the socialization processes of the organization, and how these mechanisms affect life course outcomes. I constructed a two-pronged analysis, using both quantitative survey data and qualitative interviews in order to address both rates and reasons behind patterns of substance use.

The first chapter finds that rates of substance use vary across each type of substance. Overall, alcohol use is most prevalent in this sample. I find that alcohol use increases during service and decreases substantially after exiting the military, in this case even lower than the mean alcohol index score prior to service, with the primary reasons for use being social. Unlike alcohol, marijuana use drops during service to almost non-existent numbers (a statistically significant difference), and increases roughly back to the score prior to joining the military after service. The primary motivations for marijuana use are social (similar to alcohol) prior to service, but these reasons change after exiting the military. After service using marijuana as a sleep-aid, for medicinal purposes, and for stress are just as popular as using it "for fun". Hard and prescription drug experimentation and regular use are both low in this sample, though those who do use do so for fun or to self-medicate. In regards to several sociodemographic characteristics, I find that there are few differences in rates of use across gender, race, branch, or length of service.

Chapter two focuses intently on both the rates and reasons motivating substance use (or abstention) across the military life course, analyzing both qualitative and quantitative data. Prior to service, substance use appears to mostly mimic civilian trends. In other words, it doesn't appear that a

history of substance use is necessarily a precursor to military service. Alcohol use is the most common prior to service for the interviewees, and marijuana use is more common than prescription or hard drug and is used more regularly. During service, drug use (prescription, illicit, and marijuana) drops substantially, indicating that the costs associated with being caught outweighed the proposed benefits for most. Alcohol use during service is the opposite of drug use, with many respondents referring to the "culture of alcohol" as the main influence of alcohol consumption. After exiting the military, hard drug use remains low, and is used primarily for experimentation. Interestingly, prescription drug use decreases substantially from before service to after service, contrary to what may be expected, given the stress and injury many experience while serving, and is used primarily for its physical and psychological benefits. Marijuana use appears to increase after service to a higher rate than prior to service, and mostly for the social and psychological benefits. Finally, alcohol use after service appears to decrease greatly (and significantly) from during and even before service, and is used mainly for social reasons, with decreases in use due to age and maturity.

Chapter three analyzes gender and military service more carefully. In general, men and women's substance use roughly mirror each other, with minor differences, mainly in the rate of alcohol use. This is supported by the results of the cross-tabulations and regression analyses. Additionally, the specific costs or benefits that are most important in dissuading or promoting substance use vary slightly across gender. Most notably, it appears that the perception of certain costs during service, particularly for drug use, are more powerful for the women than the men, regardless of the *actual* costs inherent to drug use. Overall, gender differences in substance use across the military life course are subtle, indicating that this era of male and female veterans may be more similar than other eras of veterans in the past.

From these chapters I observe that for the current era (post-9/11) of veterans the socialization processes of the military appear to be roughly similar across a variety of sociodemographic characteristics. Most notably, gender differences in patterns of substance use are observed to be subtle, if not non-existent; contrary to findings in previous literature. In addition, the mechanisms that drive specific behaviors do seem to vary across the life course, and I note some gender differences as well. Overall, I suggest that the post-9/11 era of veterans are less influenced by the military institution, and instead their actions may be primarily driven by age and social factors.

Regardless of these accomplishments, due to data limitations several open questions still need to be addressed with future research. First, it is hard to fully understand rates of drug use (especially hard and prescription use) without a larger sample of drug-using veterans. Forthcoming research should focus study recruitment to drug-using veterans in order to address whether rates of drug use are actually low or if drug-using veterans are just more challenging to capture. In addition, producing a study that includes higher numbers of racially-diverse veterans and veterans of branches other than the Army and Navy may also reveal varying results. Second, current longitudinal surveys should aspire to provide more explicit detail on any drug use questions in order to gather more accurate and telling data on substance use. While my survey succeeds in this aspect, it is only cross-sectional and retrospective in nature. Improvements to national and longitudinal databases may be able to provide even greater insight to patterns of substance use across the life course, and how the institution shapes these rates of use. Finally, while this study was solely focused on veterans living in Washington State, future research should aim to replicate this study cross-nationally, and with a random sample, in order to see if patterns of substance use vary by geographic location and whether or not the trends I observe can be generalized to all post-9/11 era veterans.

Answering these types of questions will help provide greater perspective on the post-9/11 military and its mechanisms of socialization. In addition, future research, especially on a national level, can help address the outcomes of participation in such organizations, and potential services needed by these veterans, not just in Washington State, but in the entire country. In sum, more direct research on the

processes of the military and how it shapes individuals' identities and behaviors can provide deeper awareness of the implications for operation within total institutions, and other similar types of organizations.

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