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**UNIT-LEVEL VARIATIONS AND PEER INFLUENCES IN
MENTAL HEALTH DIAGNOSES IN THE U.S. ARMY**

by

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December 2017

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**UNIT-LEVEL VARIATIONS AND PEER INFLUENCES IN MENTAL HEALTH
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ABSTRACT

This paper uses U.S. Army personnel data from Defense Enrollment Eligibility Reporting System (DEERS), Defense Manpower Data Center (DMDC), and TRICARE, the U.S. Department of Defense health care system, to examine how unit-level variations in incidents of mental health diagnoses affect the likelihood of an individual developing mental health disorders and the effect peers have on one's mental health outcomes. Both fixed- and random-effect regressions are employed to observe variations across units without unobserved time-invariant differences such as culture or leadership style, as well as effects of time-variant variables such as location and size. At the unit level, we consistently find that having more deployed, female, non-white soldiers, and having at least one soldier who experienced divorce and demotion, are associated with an increase in the likelihood of an individual being diagnosed with a mental disorder, and an increase in the percentage of individuals diagnosed with mental disorders in that unit. At the individual level, we observed that individuals who experienced stressful events are more likely to be diagnosed with mental health problems. Conditional to one's own experience, having peers who currently have or have had stressful events in the past are also associated with a higher likelihood of developing mental health disorders. Separately, mental health diagnoses vary with the unit's geographical location, but further research is needed to determine why this variation exists.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFQT	Armed Forces Qualification Test
DEERS	Defense Enrollment Eligibility Reporting System
DMDC	Defense Manpower Data Center
DOD	Department of Defense
FE	Fixed Effect
GPA	Grade Point Average
HR	Hazards Ratio
ICD	International Classification of Diseases
MOS	Military Occupation Specialty
OR	Odds Ratio
PPS	Percentage points
PTSD	Post Traumatic Stress Disorder
RE	Random Effect
TRICARE	U.S. DOD Health Care System
UIC	Unit Identification Code

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I. INTRODUCTION

The prevalence of mental health diagnoses and suicides has been on the rise in the U.S. military, and the military will spend over \$48.8 billion in health care spending in prevention and treatment, according to their FY2017 budget. Given the nature of jobs in the U.S. military and the close working proximity of its service members, it is creditable to suspect peers may influence each other's mental health.

To date, most research on military mental health has focused on the selection of mentally healthy recruits, the decision to deploy and retain soldiers with mental health disorders, and the effect of combat deployments on mental health. Such studies may inform intervention strategies that focus on the individual service member; however, such interventions may not address root causes if poor mental health is caused by one's peers. There have been numerous studies in the context of education and finance, which have demonstrated how peers can influence one's behavior and decision, such as Carrell, Fullerton, and West (2008), and Chen and Ma (2017) respectively. However, less is known about how peers influence each other's mental health. Knowing these influences, if they exist, can inform leadership of the potential effectiveness of unit level intervention strategies and measures, which could in turn help to improve readiness and reduce spending on health care.

Using U.S. Army personnel data received from Defense Enrollment Eligibility Reporting System (DEERS), DoD Healthcare System (TRICARE) and Defense Manpower Data Center (DMDC) databases, we have two research objectives: (1) to estimate unit-level variations in incidents of mental health diagnose in the U.S. Army, where unit groups are defined by units and ranks (officer, junior enlisted, senior enlisted); and (2) to estimate the effects of peer influence on an individual soldier's likelihood of developing mental health disorder for soldiers serving in combat units. Besides examining the overall incidents of any mental health diagnoses, we also focus on the following specific

mental health disorders: (1) suicide attempt (proxy by self-inflicted injuries), (2) Post-Traumatic Stress Disorder (PTSD), (3) common mood disorders (including anxiety and depression), and (4) substance misuse (including alcohol and drug misuse), which are costly and also key contributors to suicide deaths. We initially hypothesize that (1) combat soldiers in a combat unit are more likely to develop mental health disorders due to the stress and working environment they operate in, (2) soldiers who experienced stressful episodes like deployment, divorce and demotion are more likely to develop mental health disorders, and (3) soldiers assigned to units where peers have higher occurrence of mental health disorders will increase his/her likelihood in developing mental health disorder.

Suicide has become a growing concern, as it has risen to become the tenth leading cause of death overall in the U.S., claiming the lives of more than 44,000 people each year (Curtin, Warner, & Hedegaard, 2016). Figure 1, reproduced from Curtin, Warner, and Hedegaard (2016) shows that the annual increase of suicide rates have doubled from about 1% per year from 1999 through 2006 to 2% per year from 2006 through 2014. In particular, suicide was concurrently the second leading cause of death among individuals between the ages of 15 and 34, a key group which formed the main workforce in both the military and civilian segments.

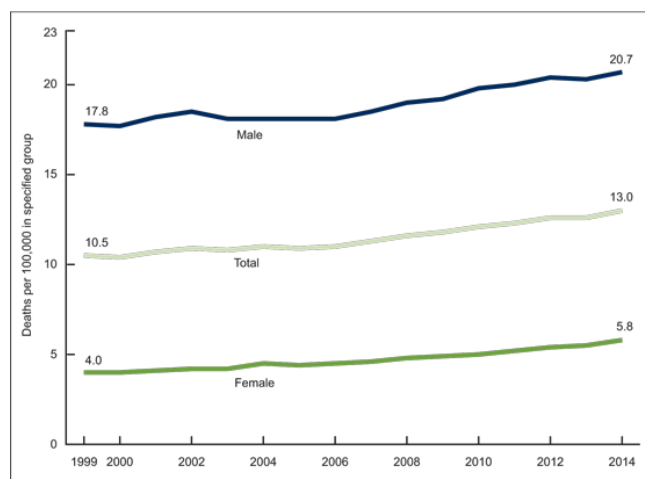


Figure 1. Age-Adjusted Suicide Rates, by Sex: United States, 1999–2014.
Source: Curtin, Warner, and Hedegaard (2016).

Together with the rising suicide concerns is the high proportion—approximately 20%—of Americans diagnosed with any form of mental health condition as gathered from the Center for Behavioral Health Statistics and Quality (2016). Even though this proportion has remained relatively constant over the past few years, Roehrig (2016) reported that mental health disorders have become the largest healthcare expenditure category, at \$201 billion in 2013. On the other hand, Bostwick, Pabbati, Geske, and McKean (2016) have shown that individuals with past suicidal attempts are more likely to commit eventual suicides, while other studies such as Ursano et al. (2014), LeardMann et al. (2013), and Yoshimasu, Kiyohara, and Miyashita (2008) also revealed that increased risk of suicide or suicide attempts was found to be closely associated with other forms of mental disorders, such as substance misuse, and common mood disorders, such as anxiety and depression. These studies support the previously mentioned three main categories of mental health disorders as relevant key contributors to suicides and establish the need to examine the pathways of these mental health disorders in order to better address the increasing suicidal rates and mental healthcare spending.

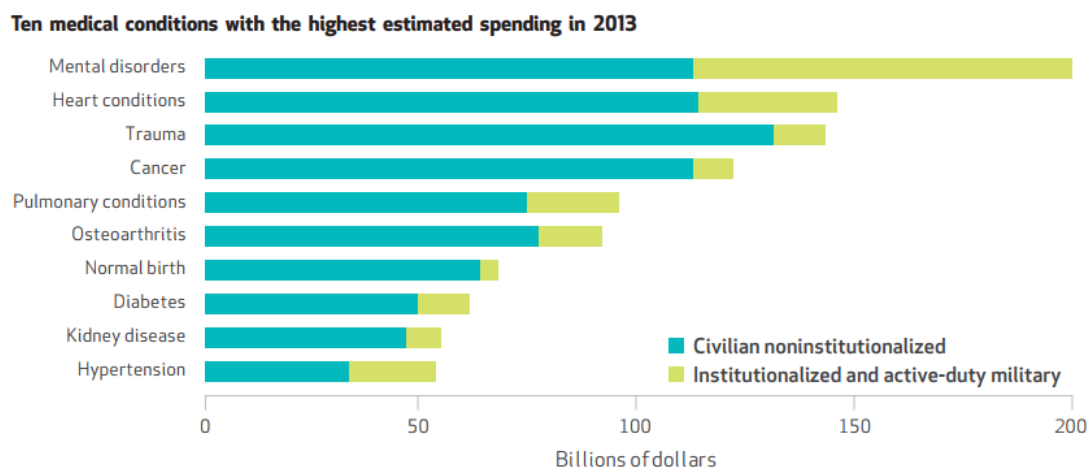


Figure 2. Ten Medical Conditions with the Highest Estimated Spending in 2013. Source: Roehrig (2016).

Theoretical pathways of developing mental disorders can be largely classified into three categories: (1) personal or genetic, (2) event-triggered, (3) peer-influenced. Importantly, these pathways can interact (Kendler et al., 1995), (Kendler, Thornton, & Gardner, 2001) and (Uher, 2014). Being in the military where soldiers work and live in proximity naturally establishes a peer environment, where one can be influenced or affected by his or her peers, giving rise to greater possibility of being diagnosed with mental health disorders when exposed to peers who have them. According to Willingham (2014), military personnel develop mental health conditions at a higher rate than civilians of up to 15 times more likely. The high national mental health rate coupled with the increased likelihood of military personnel developing mental health conditions has created a burden on the military's ability to meet its recruitment mission, maintain its readiness, and effectively manage its annual budget.

Evidence of peer effects and influence has been shown in many prior studies as a potential pathway that might affect the decisions or outcomes of an individual. Research by Gaviria and Raphael (1998), Sacerdote (2000), and Carrell, Fullerton, and West (2008) focused on the effects of peer influence on education outcomes, while Chen and Ma (2017) and Veith (n.d.) focused on influence of peers on investment decisions. Recently, Ursano, Kessler, and Stein (2017) also associated the effect of peer influence on suicide attempts in the U.S. Army.

Research such as the paper by Cunha, Arkes, Lester, and Shen (2016) has also found evidence that a detail and proper mental health screening process will help to reduce the likelihood of recruiting individuals with mental health condition or history of it. The bigger concern of mental health conditions for the military during recruitment is still the fact that one might not show symptoms of having a mental health condition at the point of recruitment. Symptoms only surface after the recruits are enlisted and exposed to stressful situations or environments. In a recent publication, Nichels (2017) stated that approximately 19% of service members are suffering from depression. Recruiting

service members who have a disposition to mental health condition will cost the military time, effort, and money for the management and treatment of these soldiers. These soldiers will also not be fit for front line deployment or combat duty, which will have an effect on the readiness of the unit.

It is therefore important for the military to be able to identify and provide necessary treatment to help these service members cope with their condition. However, the stigma of mental health poses a huge challenge to the military for the early detection and treatment of their service members. The military tends to only recruit individuals deemed to be fit, determined, and resilient. Service members are therefore less willing to declare their condition and seek treatment. This is likely due to the fact that recruits do not want others to know about their mental health state and do not want to be seen as weak for seeking help. As a result, more serious mental health conditions, or even suicide might manifest. This will not only affect the readiness of the military, it might also affect the morale of the soldier and unit.

In addition, Brewin (2013) found that the rate of mental health diagnoses among active duty military members increased by 65% between 2001 and 2011. In order to take care of our service members, the Department of Defense (DOD) spent around \$958 million on mental health treatment in year 2012. Between 2007 and 2012, the overall spending of the DOD on mental health treatment for the military was around \$4.5 billion. Given the increased likelihood of young children developing some form of mental illness, it will mean that mental health issues will increasingly become a bigger military issue. Hence, it is of interest to examine and understand the extent of peer effects in the likelihood of an individual being diagnosed with mental health disorders using the peer environment of the U.S. Army, so as to explore ways in improving the readiness and reducing the healthcare spending of the U.S. Army.

The thesis will largely be organized as follows: Chapter II will provide background on the three main categories of mental disorders as well as a review of the pertinent literature on peer effects. Chapter III will describe the data,

empirical framework and methodology of the research, while Chapter IV will focus on the findings and analysis. Lastly, Chapter V will discuss the limitations and conclude the research, together with recommendations.

II. BACKGROUND AND RELATED WORK

A. OVERVIEW OF THIS CHAPTER

The focus of this thesis is twofold: (1) to explore unit level variations in incidents of mental health diagnoses and (2) to examine the effect of peer influence on these mental health outcomes for each individual soldier. In order to understand how peers can influence an individual's behavior, it is critical to understand the peer environment that are being examined. In this chapter, we first provide the background on the peer structure in the U.S. Army. We then tried to establish the peer groupings based on the peer structure and relationships, specific to the nature of the U.S. Army. Following that, we did a review on the peer effects literature in other more widely researched areas like education outcomes and financial decision making, inferring the relevance of these studies to the effect of peer influence on behavioral outcomes. With a better understanding of the existing literature, we examined the various pathways (genetic, event-triggered and peer-influenced) of mental health disorders in suicide attempt, substance misuse and common mood disorders, in order to facilitate a better appreciation of the contributing factors. Next, we draw links of these mental disorders as risk contributors to eventual suicide deaths using past studies done in both the military and civilian environments, reiterating the importance of analyzing the mental disorders vis-à-vis actual suicides to explore feasibilities in early preventive measures. Lastly, we summarized and analyzed previous related work in behavioral outcomes pertaining to mental health as related to our analysis.

B. PEER ENVIRONMENT AND GROUPING IN THE U.S. ARMY

The military structure is an environment where peers are likely to influence one another, as service members are grouped into units and generally live, work and eat together. Each individual is likely to be influenced by his or her peers in terms of certain behaviors, as well as decisions and ability to perform, amongst

others. Many past research studies like (Carrell et al., 2008), (Veith, n.d.) and (Ursano et al., 2017) have also demonstrated the existence of peer effects in areas like military education, training, and decision making. Carrell et al. (2008), measured peer effects on academic performance in the U.S. Air Force Academy setting has concluded that “peer effects are largest in the math and science courses and are virtually nonexistent in physical education and foreign language courses” (p. 3), while Ursano et al. (2017), conducted their research on the U.S. Army showed that “soldiers were more likely to attempt suicide if one or more suicide attempts occurred in their unit during the past year” (p. 1).

According to Manski (1993), people tend to behave in similar ways when they are in a group for following three reasons:

1. Endogenous Effect: the behavior or achievement outcome of an individual will vary with the behavior of the group.
2. Exogenous Effect: the behavior or achievement outcome of an individual will vary with exogenous characteristics of the group.
3. Correlated Effect: the behavior or achievement outcome of an individual tend to be similar because they have similar individual characteristics or face similar institutional environment. (Manski, 1993)

Similar to a situation where the education outcome of a class can be affected by the sorting of good and bad student in the class, the clustering of soldiers with similar behavior and backgrounds could also be affected in a similar manner. However, the soldiers in the U.S. Army are assigned to different units by detailers in a plausibly random manner. Detailers do not deliberately cluster soldiers from similar backgrounds or those with mental disorders together. Hence, the military assignment process does not suffer from endogenous group formation, and the estimates of peer effects are therefore due to either endogenous (within-group) interactions or correlated effects due to the environment to which the group is subjected. In this thesis, we identified this

random unit assignment by a unique six-digit alphanumeric code known as the Unit Identification Code (UIC).

The UIC in the U.S. Army will usually approximate to a platoon sized worth of 16–44 soldiers as depicted in United States Department of the Army (1993). A platoon is typically made up of two to four squads of ~10 soldiers each, led by sergeants (E6 or E7) and lieutenants (O1 or O2). For the junior enlisted (E1 to E4), this formed the base unit where peer relationships could be appropriately established between the soldiers who typically interact and operate at the squad or platoon level. As for the senior enlisted (E5 and above) and officers, the company or battery level will likely be the typical base unit where peer relationships can be appropriately established, as these leaders typically interact and operate at the platoon or company level. While we also understand that there is possibly a third set of peer group where the superiors (E5 and above) interact with the subordinates (E1 to E4), effects of these peer interactions are likely not as pronounced given the power distance, and would not be included in our analysis. A company or battery is typically made up of three to five platoons and a headquarter unit, led by a captain (O3), totaling up to 190 soldiers. To derive the company or battery for these two groups, the last alphanumeric code will need to be excluded. The peer groupings for the specific categories of personnel in the U.S. Army are as follows:



Figure 3. Peer Grouping in the U.S. Army. Adapted from United States Department of the Army (1993).

C. PEER EFFECT LITERATURE

There has been limited work on the peer influence on behavioral outcomes. However, much can be learned about how peer influence might work in this context by examining the peer effect literature in general that examined other outcomes.

One may define the “peer effect” as the ability of one student to teach or learn from another. However, according to Hoxby (2002), it is more than that. Individual’s behavior may be altered based on the group he is interacting with. One might be able to achieve better academic grades and become more disciplined if he or she is studying with a group of intelligent and hardworking students. Likewise, a mischievous student or a student with a disability might be more disruptive to the class and hinder the learning and growth of others, as he or she might require more attention from the teacher. It had also been widely believed that peer group would have a huge influence on one’s decision and behavioral outcome. The fraternities and sororities clubs in college are good examples of how peers influence one’s behavior. In an attempt to blend in, one might change his or her behavior in minor stuffs such as dressing choice, hairdo and what type of movie to watch, to more drastic stuffs such as consuming a large amount of alcohol, drug and even breaking the laws in the name of fun.

Besides our day to day and personal peer effect examples, peer effects have been widely researched and recognized for its impact on economics, education and policies in a bigger perspective. It is however not easy to establish a proper peer effect research given the many challenges and limitations. Most issues evolved around the establishing the proper peer and reference group based on the degree of peer relationships. Manski (1993) has identified several useful conditions for a good peer effect study:

1. Inference is not possible unless the researcher has prior information specifying the composition of reference group

2. If the information is available, the prospects for inference depend critically on the population's relationship between the variables defining reference groups and those directly affecting outcomes.
3. The inference is difficult to impossible if these variables are functionally dependent or statistically independent.
4. The prospects are better if the variables defining reference groups are those directly affecting outcomes are moderately related to the populations. (Manski, 1993)

Given these limitations, Manski (1993) concluded in his paper that the only way to around are either by developing a tighter theory or to have richer data. In a military setup, it is tough to conduct controlled experiment. However, the U.S. military has kept extensive records of its personnel. It is also important to correctly identify how interactions occur at different rank groups, failure to do so will lead to results, which are not representative of the actual situation. Careful data selection and proper peer grouping, therefore, are the keys to an accurate and meaningful research.

One other key issue which Manski (1993) highlighted was the “reflection problem” when studying peer effects. It is a bias, which is very hard to eliminate, given that the individual is in the peer group setting him/herself. One common way of minimizing this bias is to remove the individual when accounting for the group effects. This however still has its limitations especially when the peer group is small. It is thus important to set up the peer group and size appropriately, knowing the existence of this particular issue and the biases that it is creating.

1. Peer Influence on Education Outcomes

There has been a large research body addressing the peer effect on the outcome of one's achievement in education. In the depths, researchers have constantly tried to figure out the extent and scope of how one affects the

achievement of another in various aspects of peer effects. Does race, ethnicity or wealth of the group have any impact on one's education achievement? Will those variables affect one's decision making or behavior?

Sacerdote (2000) attempted to identify how roommates affect one's GPA and his or her decision to join a social group such as fraternities. In Sacerdote (2000), freshmen are randomly assigned to dormitory and room when they enter Dartmouth College, which eliminates any possibility of self-selection bias. The random assignments of roommates also mitigated endogeneity issues as it ensured that there are no correlations between the roommates' background. The findings from this research showed that peer effects on GPA only occurred at the individual room level. On the other hand, the decisions on whether to join a fraternity or which fraternity to join indicated that peer effects occurred at both room and dormitory level. Gaviria and Raphael (1998) also found "strong peer-group effects at school level in their research of the importance of school-based peer influences in determining five youth's behavior: drug use, alcohol consuming, smoking, attending church, and the likelihood of dropping out of high school" (p. 1).

In the military context, Carrell et al. (2008) attempted to determine how peer group affects the overall college achievement within the U.S. Air Force Academy, where they set up their research by randomly assigning individuals to peer group of 30 and limiting interactions out of this peer group. The research found that there is a much larger magnitude of peer effects when compared to previous research studies, in particular when one is placed in a context of a larger social group. Carrell et al. (2008) attributed it to the belief that "roommates are generally only a small subset of an individual's actual peer group" (p. 2), giving explanations to the insignificant outcomes of academic peer effects from previous studies.

2. Peer Influence on Investment Decisions

In addition to the research of the peer effect on education, economists and researchers also expanded the field of peer effect study in other areas to understand how one's behavior or decision is influenced by that of their peers'. One such area is that of making an investment decision. In order for either an individual or a company to make a good investment decision, in-depth research and information gathering are usually required. However, such information may not always be available due to budget or knowledge limitation. In such situation, it is common for the individual to follow the decision of others who are better informed. Chen and Ma (2017) had researched on how peer effects influence corporate investment decision, finding evidence where investment decision of young firms, particularly those with financial constant, are more likely to be influenced by their peers' firm. Separately, Veith (n.d.) examined "whether the revealed preference of one's peers influences the pension decision of the individual" (p. 1) in the U.S. Navy, and found strong evidence where the investment decisions of the Navy personnel are affected by both the peer's influence and the environmental characteristics the personnel is surrounded. Apart from these research studies, there are also many other pieces of literature which show evidence of how one's behavior and his or her decision can be influenced by the peers around them.

3. Importance of Peer Influence on Mental Health

Military service members depended on each other to survive through tough training and operating environment. Through such experiences, strong bonds are usually built between them. Given such a unique situation, the decisions and behaviors of military personnel are, therefore, equally if not more likely to be affected by their peers. In an increasingly complex and dangerous operating environment, coupled with the high national rate of mental health disorders, mental health prevention, identification, and treatment should become a critical factor in order for the military to maintain its readiness. Therefore, it is

important to examine how peer effect might affect the likelihood of the military service members developing a mental health disorder.

In the next section, we discuss the potential peer influence on mental health and suicide behaviors in the context of the pathways through which an individual might be affected and engage in such behaviors.

D. PATHWAYS OF MENTAL HEALTH DISORDERS

Pathways of developing mental disorders can be largely classified into three categories: (1) personal or genetic, (2) event-triggered, and (3) peer-influenced. Details of how these pathways contribute to develop the three key areas of mental disorders are as follow:

1. Suicide Attempt

The personal or genetic pathway for suicide attempts suggests that an individual is more likely to inflict self-harm if he or she has a family history of members with suicide attempts or suicides. The theory which suggested how this pathway could operate are tested by empirical studies such as (Qin, Agerbo, & Mortensen, 2002), who found that an individual's suicide risk is 2.66 times as likely when he or she has a family history of suicide compared to those without. Individuals under this pathway just have a higher tendency to harm themselves, regardless of external factors around them. It is possible that genetics play a role in influencing an individual; towards self-harm as explained by Courtet (2005) where certain genes were found to be associated with suicide behaviors.

On the other hand, a group of individuals will inflict self-harm through the event-triggered pathway. They are likely subjected through one or more events which caused trauma or induced a huge level of stress, increasing their likelihood to attempt suicide or suicides. Sorsdahl, Stein, Williams, and Nock (2011) showed in their South Africa study that an individual who experienced one or more traumatic events had an OR of 2.2 to 3.5 to attempt suicide, and the most prominent kind of traumatic event was related to sexual violence. Similar findings

were shared by Stein et al. (2010) in their cross national analysis, where an individual who was subjected to one or more traumatic events had an OR of 1.5 to 3.8 to attempt suicide. Traumatic events related to sexual violence was again the most prominent to one's likelihood to attempt suicide.

Lastly, individuals may also inflict self-harm if they are exposed to peers who have committed suicide attempts or suicides. This is again illustrated by Ursano et al. (2017), where the research showed how suicide risks in the U.S. Army increased with past cases within a unit. A soldier is 1.4 to 2.3 times more likely to attempt suicides if there have been any suicide attempts in the unit during the past year, and this risk increases as the number of suicide attempts within the unit increased. Figure 4 illustrates the possible effects of Person A's suicide attempt or suicide on Person B, subjected to his or her personal beliefs, issues and means of resolutions.



Figure 4. Possible Effects of Person A's Suicide Attempt or Suicide on Person B

2. Substance Misuse (Includes Alcohol and Drug Misuse)

Similar to the personal or genetic pathway for a suicide attempt, an individual is more likely to be subjected to substance misuse if he or she has a family history of members doing so. This can be attributed to genetics as explained by Dinwiddie and Cloninger (1991), as they reviewed existing studies which focused on twin and adoption studies to conclude that the existence of genetics factors do contribute to subsequent development of substance misuse. One key supporting bit of evidence was that "alcohol abuse by adoptive parents

did not increase risk for alcohol abuse in their adoptive children, indicating no appreciable 'modeling' effect in children due to imitation of their parents," (Dinwiddie & Cloninger, 1991, p. 211). While there might be a combination of external factors, individuals under this pathway do have a higher tendency to substance misuse as compared to others without.

The event-triggered pathway to substance misuse suggested that traumatic events precede the individual's substance misuse episode. Research like Kilpatrick et al. (2000), which focused on adolescents aged 12 to 17 years, found that the risk of substance misuse in these individuals is 1.56 to 4.58 times as likely, when exposed to traumatic events like sexual assault and violence. The number of adverse childhood experiences as a proxy to traumatic events also increases the risk of substance misuse from an OR of 1.1 for exposure to one event, to 11.1 for exposure to four or more events, as depicted in Anda et al. (2006). In addition, individuals with PTSD, which is a mainly event-triggered disorder, are more prone to substance misuse as they sought after substances in attempt to relieve their distress as reviewed by Jacobsen, Southwick, and Kosten (2001).

Ironically, the peer-influenced pathways work both ways in either a negative or positive manner as discussed in Robertson, David, and Rao (2003) and Karakos (2014). Studies in this area are largely based on the civilian environment and in particular the adolescents. Peers are often regarded as high influencers especially when adolescents and substances are put together. In the negative path, an individual will likely be subjected to substance misuse if his or her peers are doing so, or in another aspect to reinforce the substance misuse when the individual is already doing so, as shown in Gaviria and Raphael (2001) and Simons-Morton, Haynie, Crump, Eitel, and Saylor (2001). On the other end, Brown, Dolcini, and Leventhal (1997) also suggested that an individual would be positively affected and less likely be subjected to substance misuse if his or her peers were not doing so, or more likely to stop the misuse if his or her peers were doing so. More often, peers who shared similar behavioral issues

aggregate together and thus reinforcing either the negative or positive paths, “compounding” the peer effects. Figure 5 illustrates these relationships and influences.

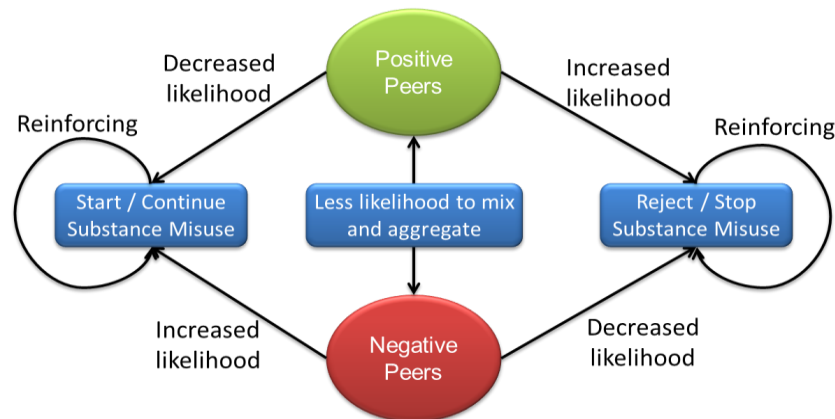


Figure 5. Relationships of Positive and Negative Peer-Influenced Pathways

3. Common Mood Disorder (Includes Anxiety and Depression)

In the U.S., at least 10% of its population will experience some form of major depression disorders, with women being two times more likely than men to be diagnosed with it. Under the personal or genetic pathway, researchers are interested to determine whether genes play any role in the development of common mood disorders. Milne et al. (2009) found evidence that associated family history with the development of four types of disorders: major depression, anxiety disorder, alcohol dependence, and drug dependence. Levinson and Nichols (n.d.) also revealed that one will face two to three times greater risks of developing some form of mood disorders if he or she has a parent or sibling with major depression. In addition, their study to determine whether twins from those who were diagnosed with the disorder will also be ill, provided researchers with insights that an identical twin would has much higher risk of developing mental health disorders than a non-identical twin, considering that non-identical twins only shared 50% of their genes.

Traumatic events such as war and sexual abuse will induce a great deal of stress on the individual, which may lead to a higher risk of developing a mental health condition if lacking help and treatment options. Kinderman, Schwannauer, Pontin, and Tai (2013), concluded in their study that traumatic events actually play an even bigger role than genetics, income, and education level in one's risk of developing anxiety and depression. With a hazard ratio ranging from 1.41 to 2.36, Kendler, Kuhn, and Prescott (2004) found that the risk of depression increased with every increasing level of "long-term contextual threat," when they researched over 7500 individuals twins born between 1934 and 1974. Therefore, while genetic factors may play an important role in the risk of one developing common mood disorders, these studies showed that exposure to a traumatic event would also have a huge impact on the likelihood of a person developing any mental health disorders. Levinson and Nichols also mentioned the possibility of non-genetic factors that could increase the risk of common mood disorders. They cited "severe childhood physical or sexual abuse, childhood emotional and physical neglect and losing a parent early in life probably also increases the risk to some extent," aggregating towards possible non-genetic risk factors to the development of common mood disorders (Levinson & Nichols, n.d.).

It can be a stressful experience trying to fit into a peer group. It is not uncommon for people to face difficulties fitting in and constantly question their worth and choices. Some of such questions are, "Do I fit in the group?," "Can I afford the activities the group and doing?," "Should I drink and smoke like the rest in the group?," "Will the group reject me for having a view of my own?" The peer-influenced pathway to mood disorders is not as pronounced as compared to substance misuse. However, this pathway still exists based on past studies like Greca and Harrison (2005). Greca and Harrison (2005) conducted the study on 421 adolescents enrolled in a public high school in a large metropolitan area to examine how interpersonal relationship, such as peer crowd affiliation, peer victimization, best friendship and romantic relationship, relate to the development of depression and social anxiety. The study found evidence that an individual is

less likely to report social anxiety and depression when he or she is in a “high-status peer crowds.” Thus, having a good and support peer group would reduce such stress and pressure while having a competitive and demanding peer group would add to the stress when one tries to fit in. Hence, having high quality friendships and relationships would likely yield similar results and reduce the risk of developing mental health disorders.

E. MENTAL HEALTH DISORDERS AS CONTRIBUTORS TO SUICIDES

Mental health disorders can be attributed as key contributors to suicide deaths from past studies which concluded that suicides are positively correlated to existing mental health disorders. Yoshimasu et al. (2008) concluded that the three key areas of mental disorders discussed in this thesis: substance misuse related disorders, mood related disorders and suicide attempts are strongly associated with suicide deaths. Substance misuse related disorders have an odds ratio (OR) of 5.24 with suicidal risks, while mood related disorders have an OR of 13.42. Suicide attempts (inflicting self-harm), on the other hand have the highest OR of 16.33 with suicide risks. Bostwick et al. (2016) have also strengthened the relationship showing that individuals with past suicide attempts will more likely commit eventual suicides; during the period of study from 1986 to 2010 in Olmsted County, “27 of the surviving 33 index attempt survivors (81.8%) killed themselves within a year” (p. 1). While the figure is worrying, the research also found that with proper follow-up psychiatric treatments, the likelihood of subsequent suicide would significantly reduce to an OR of 0.212.

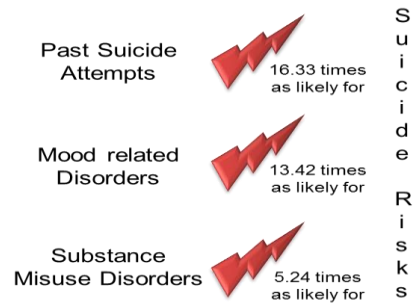


Figure 6. Odd Ratios (OR) of Suicide Risks with Existing Mental Disorders. Adapted from Yoshimasu et al. (2008).

On the other hand, Ursano et al. (2014) and LeardMann et al. (2013) have both illustrated how substance misuse and mood related mental health disorders are seen positively associated with suicide attempts and suicides in the military context. In LeardMann et al. (2013), the Hazards Ratio (HR) of suicides ranges from 1.99 to 2.93 when previously diagnosed with substance misuse (alcohol), and 1.85 to 2.70 for common mood related mental health disorders. In Ursano et al. (2014), OR of having suicide attempts is 5.8 when previously diagnosed with substance misuse, and ranges from 5.6 to 11.0 for mood related mental health disorders like major depressive episode and generalized anxiety disorder.

Both the general and military specific studies supported the relationship between existing mental health disorders and suicide risks. The differences in the magnitudes of outcomes between civilian and military populations are likely due to the controlled screening prior to military enlistment and stricter controls, which biases the sample for comparison. Nonetheless, all these findings still reinforced and established the following model on the relationship chain between mental health disorders and suicides in the scope of this thesis as illustrated in Figure 7.

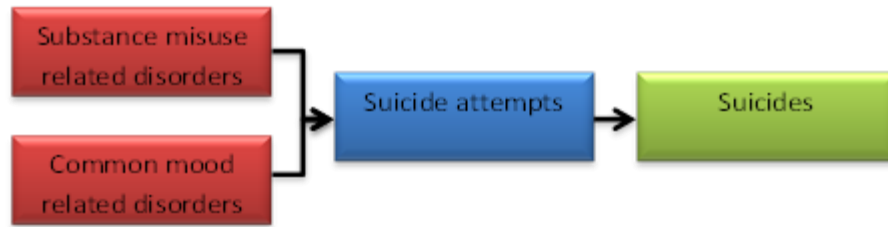


Figure 7. Relationship between Related Mental Health Disorders and Suicides

F. SUMMARY OF PREVIOUS WORK

The importance and effect of peer influence has been a widely research area and the results had largely suggested that the interaction between peers would have a big impact towards one's behavior and performance. In order to conduct a creditable peer effect analysis, Manski (1993) had highlighted several useful conditions for a good peer effect study and highlighted the potential issue, such as the reflection problem. In order to identify real causal relationship in any peer effect study instead of mistaking one due to reverse causality, it is important to carefully examine the study to either eliminate any reflection problem, which is difficult or at the very least minimize the bias where elimination is not possible.

As important as it is, there is not much research done in identifying the correlation between peer effect and the likelihood of developing mental health disorders in the military. Most research on mental health related issues in the military had thus far focused on the effects of recruitment selection, and the deployment and retention of soldiers with mental health disorders. While Ursano et al. (2017) had identified the correlation between peer influence and the propensity of suicide, much more could be done to determine the extent of peer effect on the development of mental health disorders.

As discussed, the mental health conditions of the soldier would have a huge impact in the success of any military operation. Considering the increasing trend of adults being diagnosed with mental health disorders, it will affect both the U.S. Army's ability to recruit and sustain its operational readiness. At the

same time, it will also put stresses on its operating budget, as more would need to be spent on taking care of service members who developed mental health disorders. Reviewing various literature had shown how one could be at risk of developing mental health conditions through the various pathways and the strong existence of peer influence in areas like education and finance, which could be implicitly inferred for behavioral outcomes. It is therefore important to determine how big of an impact, if any, does peer influence have on the development of mental health disorders within the military. Our research will therefore attempt to examine the extent of peer effects on developing mental health disorders within the U.S. Army.

III. DATA AND METHODOLOGY

A. DATA OVERVIEW

For this analysis, the data comprises military personnel in the U.S. Army over a nine-year period, from 2002 Quarter 4 to 2011 Quarter 3. It is obtained from three sources. The first is the Defense Enrollment Eligibility Reporting System (DEERS), which contains data for demographic characteristics and service characteristics such as race, rank and Unit Identification Code (UIC). The second is from the Defense Manpower Data Center (DMDC), which contains other service characteristics including occupation, Armed Forces Qualification Test (AFQT) score and enlistment waiver status. The third is from TRICARE, the U.S. DOD Health Care System, which contains clinical diagnoses of health conditions (including mental health) for all active duty service members during their service. The TRICARE data contains both date and diagnostic codes (based on International Classification of Diseases, ICD-9 codes) for each visit.

The panel data set is at the individual level with monthly snapshots, containing information pertaining to demographic, service and mental health diagnosis of 1,450,807 soldiers from the U.S. Army. In total, the data set contains 74,277,599 person-month observations after excluding the ~5.7% of observations with incomplete information. Within this sample, there are 192,668 officers with 13,880,358 person-month observations, 452,593 senior enlisted (E5 and above) with 25,759,921 person-month observations, and 924,190 junior enlisted (E1 to E4) with 34,637,320 person-month observations.

For this analysis, we define four peer groups. The first three groupings denote the peer relationships and interactions explained earlier in Chapter II: (1) E1-E4 soldiers at the platoon level, (2) E5 and above soldiers at the company level, and (3) officers at the company level. While there could be possible peer interactions between these groups in a superior-subordinate relationship, we believe that such effects are minimal given the power distance and organizational

construct, and are thus excluded from the analysis. With such peer grouping established, it will allow us to examine systematic differences in the unit level variations within the peer group.

In addition, we analyze the fourth peer group—combat units— separately, defined as those with 5 to 50 soldiers of all rank groups and more than 80% of the soldiers from the Combat MOS. We have specifically chosen this subset for the peer-influence regression to better estimate the extent of peer influence on the combat units, where established peer relationships can be put into play at the platoon level. The subset sample is made up of 191,520 soldiers with 1,533,619 person-month observations. Summary of the person-month observations is shown in Table 1.

Table 1. Summary of Person-Month Observations for Entire Dataset

U.S. Army	Number of Personnel	Number of person-month observations	Number of platoon/company entities
Officers	192,668	13,880,358	22,161
E5 and above	452,593	25,759,921	23,091
E1-E4	924,190	34,637,320	42,111
Combat Unit Subset	191,520	1,533,619	3,741

* There is an overlap of enlisted personnel but no overlap of person-month observations due to promotion across the enlisted rank groups.

Data collection is detailed in Chapter III.

B. VARIABLE DESCRIPTION

This section will provide a detailed overview of all the variables used in the analysis. The variables are classified into the following categories, and will be used in the linear regressions for both the unit level and individual analysis: outcome variables, individual-level variables, unit-level variables, and time trend variables.

1. Individual Outcomes: Mental Health Diagnosis

The mental health indicators are the dependent variables for the study. They reflected the mental health status of the soldier and are binary-coded.

Soldiers were assigned a value of 1 on and/or after they were diagnosed between October 2002 and September 2011 with any mental health problems, and 0 otherwise (i.e., if their ICD-9 codes were between 290 to 319 and E950 to E958). Additionally, we examine 7 specific mental health disorders: Suicide attempt (ICD-9 codes E950-E958), PTSD (309.81), Depression (296.2-296.3), Anxiety (309.81), Substance abuse (291-292 and 303–305), Alcohol abuse (291 and 303) and Drug abuse (292 and 304–305). For each mental health outcome (the overall and the 7 specific conditions), we define two dependent variables that differ in timing. “Current” indicator only turns to the value 1 during the month the soldier was first diagnosed with the mental health condition. For example, if a soldier was diagnosed with PTSD in February 2005, his “current PTSD” indicator turns to 1 during that month but 0 for all other months. “Post PTSD” indicator (to capture history of mental health diagnosis) turns to the value 1 on and after the month of first diagnoses. Using the previous example, such soldier would receive the value 1 for his “post PTSD” indicator on all months on and after February 2005.

2. Demographic

Demographic variables include both gender and race variables. These variables are included to observe any differences in either gender or race that might be associated with a differential likelihood of a soldier developing mental health disorder. Different races and genders may also have different propensities for seeking medical help, we hypothesize female might have a higher propensity to seek medical help compare to their male counterpart due to their willingness to talk about their needs. Similarly, we hypothesize other races like Asians and Blacks might have a lower propensity to seek medical help as compared to Whites because of reasons like being traditionally conservative or racial bias awareness or the lack of trust in the medical system.

For the gender variable, male will be the reference group. As for the race variables, they will also be binary-coded. Each of the race variables, “White”

(reference group), “Black,” “Hispanic,” “Asian” and “Other Race,” will be coded with a value of “1” and “0” otherwise, according to their respective races.

3. Rank Group

Every soldiers in the military hold different ranks as they progress through their career. Enlisted rank is denoted by E1, for enlisted apprentice, to E9, for senior enlisted soldier. As for the officer rank, they are denoted from O1 for junior officer, and up to a rank of O10, which is the rank of a general. Given the regimentation and rigid hierarchy of the military, soldiers in different ranks will behave, communicate and work differently. It is thus important to separate them into the appropriate rank group for the purpose of this study. We therefore categorized each soldier, into either of the three rank groups, “Officer,” “Senior Enlisted,” and “Junior Enlisted.”

These rank group variables will be binary-coded. All officers regardless of seniority will be coded with the value of “1” under the “Officer” variable, and “0” otherwise. Enlisted with the rank of E5 and above will be coded with the value of “1” under the “Senior Enlisted,” and “0” otherwise. Enlisted with the rank of E1 to E4 will be coded with the value of “1” under the “Junior Enlisted,” and “0” otherwise. The “Junior Enlisted” variable will be the reference group.

4. Military Occupation Specialty (MOS)

Every soldier is classified into different MOS according to the type of job he/ or she performs in the military. Such job classifications reflected the type and nature of work, as well as the environment that the soldier is in. For instance, a soldier in the combat MOS will more likely be in the frontline units with a harsher working environment, and might have a higher probability of developing mental disorders. Using the first 3 digits of the MOS codes, we categorize soldiers into the following broad MOS categories: “Combat” (reference group), “Aviation,” “Medical,” “Combat Service,” “Service Support,” and “Other MOS.”

For the combat unit sub-analysis, we only differentiate between combat MOS and the rest (denoted as “Non-Combat”) since more than 80% of the soldiers are already in the Combat MOS in these units.

5. Armed Forces Qualification Test (AFQT)

The U.S. Army uses AFQT score to gauge the soldier’s ability when a soldier was first enlisted. Officers, unless they are prior enlisted, would not have any AFQT scores. According to their AFQT results, we categorize soldiers into one of the five AFQT score categories: if they had missing AFQT or score at or below 30 percentile (reference group), 31–50 percentile, 51–65 percentile, 66–93 percentile, and above 93 percentile. While one might argue that those with better AFQT scores are likely to be more motivated and are in turn less likely to develop mental disorders, there is not much literature that could support that argument strongly. Thus, these variables are included to observe if there are any noticeable differences between soldiers with different AFQT categories.

6. Stressful Events

As discussed in the literature review, stressful events could be the trigger for the development of mental health conditions. We have identified three potential stressful events: (1) Deployment, (2) Divorce, and (3) Demotion, for the purpose of this study. When a soldier is deployed, he or she could experience near death encounters or witness his or her buddy’s death. Such traumatic events would likely affect one’s mental state and trigger the development of mental health disorders, such as PTSD. On the other hand, when a soldier experienced either a demotion or divorce, such events would potentially put huge strains on one’s psychological state and similarly trigger the development of mental health disorders, such as depression. Hence, these indicators are included to observe their effects on the soldier’s likelihood to develop mental health disorders, if any.

All these stressful event variables will be binary-coded. For deployment, we differentiate between the month that a soldier is deployed and months after a soldier returned from deployment. Specifically, “currently deployed” variable takes

on value of 1 during the month(s) that a soldier is on deployment, 0 otherwise (for example, if a soldier was deployed between Jan-Mar of 2005 then again between Jan-Mar of 2010, he will be coded as 1 for the currently deployed variable for those 6 months). The variable “post deployed” takes on a value of 1 for all months *after* a soldier returned from his first deployment, except during the months that he returned to the theater.

We implement similar coding for divorce and demotion events. The variable “currently divorced” takes on the value 1 during the month that a soldier who is going through divorce (as identified by marital status on the personnel record) and 0 otherwise. The variable “post divorced” takes on the value 1 for all months after a soldier’s first month of divorce (in other words, the two variables are mutually exclusive). We define the same set of variables to capture current and past demotions.

7. Unit Size

Due to the different roles and functions of the different entities in the military, units might vary in different sizes. Hence, unit size category variables are included to observe if there are differences in impacts on the development mental health disorders. Three unit size categories for each peer group analysis are defined based on the literature of how the U.S. Army is organized in the Platoon and Company Level. Category 1 captures units with fewer than 4 Officers (for officer sample), 14 Senior Enlisted (for senior enlisted sample), 13 Junior Enlisted (for junior enlisted sample), and 15 Soldiers (for combat unit subset sample). Category 2 captures units with 4–8 officers (for officer sample), 14–18 senior enlisted (for senior enlisted sample), 13–39 junior enlisted (for junior enlisted sample), and 15–45 soldiers (for combat unit subset sample). Category 3 captures units with more than 8 Officers (for officer sample), 18 Senior Enlisted (for senior enlisted sample), 39 Junior Enlisted (for junior enlisted sample), and 45 soldiers (for combat unit subset sample).

8. Unit Location

With the understanding that the U.S. is a huge country with its states across different terrains, climates and cultures, location of the units are included in the study to observe if locality plays a difference towards the probability of a soldier developing mental health conditions. The unit locations are first grouped based on the 50 U.S. states, unique military locations, and those outside of the U.S.. They are then re-categorized in 12 categories: 9 different Divisions (“DIV 1—New England,” “DIV 2—Middle Atlantic,” etc.) based on the Census Division Classification from the U.S. Census Bureau as shown in Figure 8, “Military Location,” “Other Location” (outside the U.S.), and “Missing Location.” “Missing Location” variable will be the reference group.

These location variables will be binary-coded. Each location variable, say “DIV 1—New England” will be coded with a value of “1” if the soldier belonged to a unit located in that specific category, and “0” otherwise. For soldiers who are deployed outside the U.S., they will be coded under the “Other Location” variable. For soldiers who are deployed to military areas with codes, “AE, AP, or AA,” they will be coded under the “Military Location” variable. Around 38.5% of the sample has missing unit locations and will be coded with a value of “1” under the “Missing Location” variable.



Figure 8. Census Division Classification. Adapted from United States Census Bureau (2015).

9. Unit Composition

For unit level analysis, we characterize each unit's composition by the individual characteristics described above. Specifically, we measure the percentage of soldiers in each unit by gender, race, MOS, AFQT categories and deployment: female, Black, Asian, Hispanic, other races, Aviation MOS, Medical MOS, Combat Service MOS, Service Support MOS, other MOS, AFQT Category 2, AFQT Category 3, AFQT Category 4, AFQT Category 5, currently deployed and post deployed. For example, to obtain the percentage of soldiers that are female, we simply take the ratio between number of female soldiers and the total number of soldiers in that unit. Additional variables to measure the percentage of soldiers in each unit that are officers, senior enlisted and non-Combat MOS, were also created for the combat unit subset.

10. Peer Influence Variables

For the individual level (peer influence) analysis, both the individual characteristics and unit composition described above are included. In order to distinguish between care seeking vs. condition influence, two additional types of variables are created:

(1) A binary variable, for instance, “X PTSD,” which will be coded with a value of “1” and “0” otherwise, if at least one soldier excluding him/herself is diagnosed with the seven mental disorders or any other mental disorders, and

(2) A binary variable, “Any Excluding PTSD,” which will be coded with a value of “1” and “0” otherwise, if at least one soldier excluding him/herself is diagnosed with any other mental disorders except the specific mental disorder of interest.

These care seeking versus condition influence variables were also characterized in three different levels, (1) Zero: individual with no peers having the specific mental disorders, (2) Low: individual with peers having the specific mental disorders up to the 50th percentile, and (3) High: individual with peers having the specific mental disorders from the 50th percentile onwards.

11. Time—Year and Month

Given the nature of the panel dataset, time variables are introduced for fixed effects regression to account for any unobservable incidental factors, which could occur across the study period. As there are 108 monthly snapshots, including 107 separate time dummies might result in overfitting the model. Hence, time variables of 12 months (Jan to Dec) and 9 years (2002 to 2011), will be used instead. The first year of our database, 2002, and the month of January will be the reference groups.

C. OVERALL SUMMARY STATISTICS

1. Person-Month Observations

The summary statistics, shown in Table 2, contain information for the entire population used in the study. There are 74,277,599 observations, of which 18.69% are officers, 34.68% are senior enlisted, and 46.63% are junior enlisted. From the sample, the U.S. Army has approximately 13% of its soldiers diagnosed with any mental disorders, which is lower than the national average of 20%. Of the mental disorders which are of interest in this study, PTSD is highest at 2.99%, followed by

depression at 1.64%, and then anxiety at 1.31%. Substance misuse, including alcohol and drug misuses, which are very common at the national level, are low in the Army due to the lower tolerance of such behaviors. The diagnosis of mental disorders might also likely appeared lower due to the possibility of non-reporting or lower propensity in care seeking, given concerns of career and social implications.

The majority of the sample are male (84.10%) and White (61.21%). The soldiers are mainly from the Combat (21.94%) and Service Support (27.01%) MOS, with most of them located in South Atlantic (18.60%) and West South Central (11.27%) regions. For stressful event indicators, 24.01% of the soldiers have been through one or more deployments. In addition, 7.42% of the sample have experienced divorce and only 0.79% have experienced demotion, with junior enlisted having lower divorce rate and officers having low demotion occurrences.

Table 2. Summary Statistics for the United States Army

Army Peer Group		
n = 74,277,599	Overall	
	mean	sd
Mental Health Diagnosis		
Any Mental	13.05%	33.68%
Suicide Attempt	0.28%	5.26%
Suicide Death	0.03%	1.75%
PTSD	2.99%	17.04%
Depression	1.64%	12.69%
Anxiety	1.31%	11.36%
Substance Misuse	0.99%	9.91%
Alcohol Misuse	0.90%	9.43%
Drug Misuse	0.82%	9.03%
Other Mental	11.53%	31.93%
Other Psychological	1.36%	11.57%
Rank Group		
Officer	18.69%	38.98%
E1 to E4	46.63%	49.89%
E5 and above	34.68%	47.60%

Gender		
Male	84.10%	36.57%
Female	15.90%	36.57%
Race		
White	61.21%	48.73%
Black	21.57%	41.13%
Hispanic	6.74%	25.08%
Asian	4.21%	20.09%
Other Race	6.26%	24.22%
MOS		
Combat	21.94%	41.39%
Aviation	3.62%	18.67%
Medical	12.31%	32.86%
Combat Service	13.95%	34.65%
Service Support	27.01%	44.40%
Other MOS	21.16%	40.85%
AFQT CAT		
AFQT CAT 1 (0 to 30, include missing)	22.56%	41.80%
AFQT CAT 2 (31 to 50)	24.41%	42.96%
AFQT CAT 3 (51 to 65)	21.09%	40.80%
AFQT CAT 4 (66 to 93)	27.29%	44.55%
AFQT CAT 5 (>93)	4.64%	21.03%
Stressful Event		
Deployed	24.01%	42.72%
Divorced	7.42%	26.21%
Demoted	0.79%	8.84%
Location		
DIV 1—New England	0.80%	8.90%
DIV 2—Middle Atlantic	4.00%	19.59%
DIV 3—East North Central	2.38%	15.26%
DIV—West North Central	4.20%	20.07%
DIV 5—South Atlantic	18.60%	38.91%
DIV 6—East South Central	5.45%	22.70%
DIV 7—West South Central	11.27%	31.62%
DIV 8—Mountain	4.14%	19.92%
DIV 9—Pacific	5.46%	22.72%
Military Location	4.90%	21.59%
Other Location	0.48%	6.88%
Missing Location	38.33%	48.62%

D. DESCRIPTIVE STATISTICS FOR OFFICERS

1. Person-Month Observations

The summary statistics for the officers are shown in Table 3. There are 13,880,358 officer-month observations. From the sample, the U.S. Army has approximately 6.7% of its officers diagnosed with any mental disorders, which is much lower than the national average of 20% and the overall Army. Of the mental disorders, which are of interest in this study, PTSD is highest at 1.31%, followed by depression at 1.05% and anxiety at 0.66%. Substance misuse, including alcohol and drug misuses, which are very common at the national level, are very low for the officers. Nonetheless, the diagnosis of mental disorders might also likely appeared lower due to the possibility of non-reporting or lower propensity in care seeking, given concerns of career and social implications, especially for the officer corps.

In terms of demographics, majority of the officer sample are Males (83.98%), which is very similar to the overall Army distribution. On the other hand, racial distribution for the officers are in similar alignment to the National distribution, with the majority of Whites at 72.51%. The officers are mainly from the Combat (20.33%) and Service Support (19.43%) MOS, with most of them located in South Atlantic region (22.48%).

For stressful event indicators, 21.58% of the officers have been through one or more deployments. In addition, 8.70% of the sample have experienced divorce and only 0.17% have experienced demotion, which is not surprising as officers are less susceptible to demotion but instead a termination of service.

Table 3. Summary Statistics for Officer Peer Group

Officer Peer Group		
n = 13,880,358	Overall	
	mean	sd
Mental Health Diagnosis		
Any Mental	6.69%	24.99%
Suicide Attempt	0.04%	2.05%
Suicide Death	0.02%	1.46%
PTSD	1.31%	11.35%
Depression	1.05%	10.21%
Anxiety	0.66%	8.11%
Substance Misuse	0.27%	5.21%
Alcohol Misuse	0.25%	4.98%
Drug Misuse	0.24%	4.85%
Other Mental	0.83%	9.06%
Other Psychological	5.66%	23.10%
Gender		
Male	83.98%	36.68%
Female	16.02%	36.68%
Race		
White	72.51%	44.64%
Black	14.75%	35.46%
Hispanic	2.81%	16.53%
Asian	3.84%	19.22%
Other Race	6.08%	23.90%
MOS		
Combat	20.33%	40.24%
Aviation	8.28%	27.57%
Medical	17.23%	37.76%
Combat Service	15.33%	36.03%
Service Support	19.43%	39.57%
Other MOS	19.40%	39.54%
Stressful Event		
Deployed	21.58%	41.14%
Divorced	8.70%	28.18%
Demoted	0.17%	4.16%

Location		
DIV 1—New England	0.92%	9.53%
DIV 2—Middle Atlantic	4.93%	21.64%
DIV 3—East North Central	2.24%	14.79%
DIV—West North Central	4.33%	20.35%
DIV 5—South Atlantic	22.48%	41.75%
DIV 6—East South Central	7.25%	25.94%
DIV 7—West South Central	9.24%	28.96%
DIV 8—Mountain	3.53%	18.44%
DIV 9—Pacific	5.19%	22.18%
Military Location	5.62%	23.04%
Other Location	0.26%	5.14%
Missing Location	34.01%	47.37%

2. Unit-Month Observations

In this sample, there are 693,413 unit-month observations consisting 15,485 peer groups (companies), after excluding 22% of the person-month observations, either because their units are too large for credible peer influence mechanisms to work (beyond the 95th percentile) or the unit contains only one person-month observation within the unit, and 13% of the observations with different platoon and company locations. Figure 9 illustrates the spread of the peer group size for the Officers.

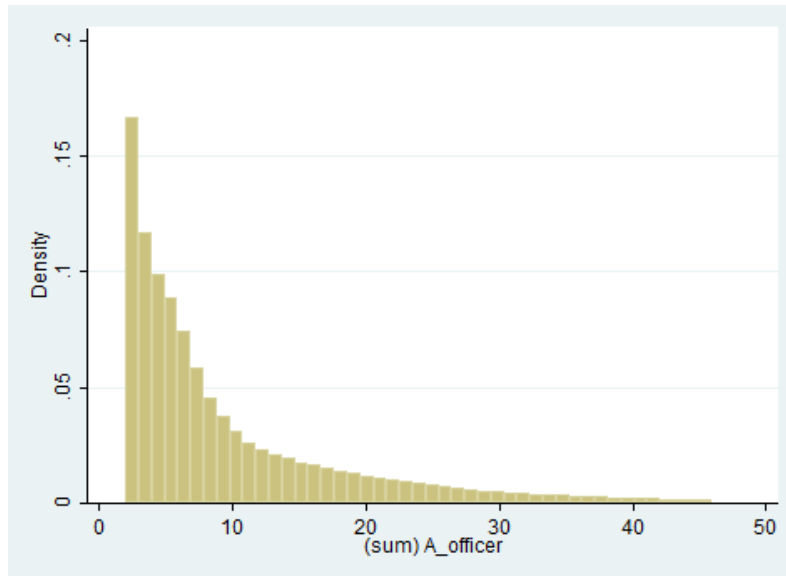


Figure 9. Histogram of the Peer Group Size for the Officers

To better understand whether there are systematic differences in unit composition and locations between units with high and low prevalence of mental health diagnoses, we provide descriptive statistics of the units overall, as well as by the following 3 mutually exclusive groups in the summary statistics table: whether the unit is in the lowest quartile, interquartile, or upper quartile of the mental health prevalence distribution. This categorization was done by the following steps. First, we compute percent of soldiers diagnosed with any current or past mental health diagnoses for each unit-month. We then rank all unit-month observations from lowest to highest value. Units that are in the bottom 25 percentile belongs to the lowest quarter, they belong to the interquartile group if their rate is between 25–75 percentile, and the remaining ones are in the upper quartile. It is however important to note that the quartiles are not distributed equally due to the discrete characteristics of the variables.

Table 4 presents the full summary statistics of officer peer group. We highlight a few noticeable differences across the three categories. First, female is over-represented in units with high incidents of mental health diagnosis (18.45% in highest quartile vs. 14.03% in the lowest quartile). In terms of MOS categories,

units with high mental health incidents have fewer soldiers in combat MOS but more soldiers in Medical, compared to units in the lowest quartile of the mental health distribution. Units in South Atlantic region is over-represented in the highest quartile compared to lowest quartile units. Consistent with our expectation, units in the highest quartile has higher % of soldiers divorced compared to units in the lowest quartile (11.45% vs. 7.09%). On the other hand, % of soldiers that were deployed or demoted is lower in units in the highest quartile compared to units in the lowest quartile.

Table 4. Summary Statistics for Officers at the Company Level

	Overall n=693,413		Lower Quartile n=449,768		Upper Quartile n=173,124		Interquartile n=70,521	
	mean	sd	mean	sd	mean	sd	mean	sd
Mental Health Diagnosis								
% Any Mental	6.34%	12.09%	0.00%	0.00%	23.02%	14.19%	5.79%	1.77%
% Suicide Attempt	0.04%	0.96%	0.00%	0.00%	0.15%	1.89%	0.05%	0.47%
% Suicide Death	0.02%	0.50%	0.00%	0.00%	0.05%	0.98%	0.02%	0.33%
% PTSD	1.36%	5.67%	0.00%	0.00%	5.05%	10.43%	0.93%	2.07%
% Depression	0.95%	4.55%	0.00%	0.00%	3.44%	8.53%	0.91%	2.05%
% Anxiety	0.63%	3.78%	0.00%	0.00%	2.30%	7.24%	0.52%	1.57%
% Substance Misuse	0.25%	2.22%	0.00%	0.00%	0.89%	4.32%	0.25%	1.13%
% Alcohol Misuse	0.23%	2.14%	0.00%	0.00%	0.82%	4.17%	0.23%	1.08%
% Drug Misuse	0.24%	2.32%	0.00%	0.00%	0.89%	4.54%	0.21%	1.06%
% Other Mental	0.75%	4.20%	0.00%	0.00%	2.74%	7.99%	0.61%	1.70%
% Other Psychological	5.41%	11.21%	0.00%	0.00%	19.70%	14.85%	4.77%	2.58%
Gender								
% Male	84.94%	18.87%	85.97%	19.71%	82.24%	18.45%	85.00%	12.77%
% Female	15.06%	18.87%	14.03%	19.71%	17.76%	18.45%	15.00%	12.77%
Race								
% White	70.97%	25.12%	71.66%	26.94%	68.93%	22.96%	71.59%	16.32%
% Black	15.72%	20.08%	15.27%	21.40%	16.98%	18.78%	15.47%	13.15%
% Hispanic	3.45%	10.17%	3.52%	10.98%	3.45%	9.25%	3.01%	6.06%
% Asian	3.99%	9.95%	4.04%	10.85%	3.98%	8.85%	3.64%	5.55%
% Other Race	5.88%	11.11%	5.51%	11.84%	6.66%	10.63%	6.29%	6.36%

MOS								
% Combat	20.45%	29.81%	21.91%	31.85%	17.48%	26.00%	18.41%	23.83%
% Aviation	5.63%	18.32%	4.67%	17.01%	5.53%	17.47%	12.01%	25.69%
% Medical	12.40%	25.97%	11.01%	24.85%	14.98%	28.05%	14.92%	26.92%
% Combat Service	16.71%	26.26%	16.69%	27.46%	16.85%	25.21%	16.45%	20.30%
% Service Support	23.82%	30.39%	23.88%	31.78%	25.07%	29.14%	20.35%	23.20%
% Other MOS	20.99%	25.04%	21.83%	26.98%	20.09%	22.45%	17.86%	16.41%
AFQT Categories								
% AFQT CAT 1 (0 to 30, include missing)	57.22%	29.31%	56.56%	30.78%	56.74%	27.55%	62.55%	22.61%
% AFQT CAT 2 (31 to 50)	5.23%	11.11%	5.11%	11.84%	5.81%	10.71%	4.54%	6.13%
% AFQT CAT 3 (51 to 65)	8.03%	13.36%	7.93%	14.30%	8.68%	12.71%	7.10%	7.28%
% AFQT CAT 4 (66 to 93)	22.23%	21.68%	22.74%	23.30%	21.92%	19.66%	19.77%	14.17%
% AFQT CAT 5 (>93)	7.29%	12.91%	7.65%	14.19%	6.85%	11.16%	6.04%	6.67%
Stressful Event								
% Deployed	24.96%	32.77%	25.94%	33.93%	22.06%	30.31%	25.81%	30.61%
% Divorced	8.37%	13.15%	7.09%	13.42%	11.45%	13.70%	9.03%	7.50%
% Demoted	0.26%	2.72%	0.31%	3.15%	0.17%	1.86%	0.14%	0.88%
Location of Units								
DIV 1—New England	1.02%	10.03%	1.09%	10.37%	0.79%	8.88%	1.12%	10.51%
DIV 2—Middle Atlantic	3.57%	18.56%	3.73%	18.95%	3.37%	18.04%	3.06%	17.23%
DIV 3—East North Central	3.08%	17.28%	3.42%	18.17%	2.49%	15.60%	2.39%	15.26%
DIV—West North Central	3.39%	18.09%	3.65%	18.74%	3.04%	17.16%	2.61%	15.95%
DIV 5—South Atlantic	14.63%	35.34%	13.55%	34.22%	16.00%	36.67%	18.11%	38.51%
DIV 6—East South Central	4.72%	21.20%	4.61%	20.98%	4.41%	20.52%	6.15%	24.02%
DIV 7—West South Central	8.48%	27.85%	8.05%	27.21%	9.70%	29.59%	8.17%	27.40%
DIV 8—Mountain	3.76%	19.02%	3.76%	19.03%	3.96%	19.49%	3.26%	17.76%
DIV 9—Pacific	5.09%	21.98%	5.05%	21.90%	5.46%	22.71%	4.46%	20.64%
Military Location	5.05%	21.89%	4.56%	20.86%	5.61%	23.02%	6.77%	25.12%
Other Location	0.61%	7.81%	0.69%	8.28%	0.54%	7.36%	0.30%	5.49%

E. DESCRIPTIVE STATISTICS FOR SENIOR ENLISTED

1. Person-Month Observations

The summary statistics for the senior enlisted, are shown in Table 5. There are 27,759,921 senior enlisted-month observations. From the sample, the U.S. Army has approximately 15.0% of its senior enlisted diagnosed with any

mental disorders, which is lower than the national average of 20% but higher than the overall Army. This might be due to the possibility of “carry over effect” from their time as junior enlisted. Of the mental disorders, which are of interest in this study, PTSD is highest at 4.29%, followed by depression at 2.08% and anxiety at 1.52%. Substance misuse, including alcohol and drug misuses, which are very common at the national level, are low for the senior enlisted. Nonetheless, the diagnosis of mental disorders might also likely appeared lower due to the possibility of non-reporting or lower propensity in care seeking, given concerns of career and social implications.

Majority of the senior enlisted sample are Males (86.61%), which is similar to the overall Army distribution. On the other hand, minority is over-represented among the senior enlisted compared to the National average (73.6% of the U.S. population are Whites), with the majority of Whites at only 54.77%. The senior enlisted are mainly from the Combat (21.66%) and Service Support (28.31%) MOS, with most of them located in South Atlantic (18.37%) and West South Central (11.29%) regions.

For stressful event indicators, 25.72% of the senior enlisted have been through one or more deployments. In addition, 11.70% of the sample have experienced divorce and only 0.13% have experienced demotion, which might be due to the natural “attrition” where non-performing or problematic junior enlisted are less likely to be promoted to E5 and above.

Table 5. Summary Statistics for E5 and above Peer Group

Enlisted E5 and above Peer Group		
n = 25,759,921	Overall	
	mean	sd
Mental Health Diagnosis		
Any Mental	14.97%	35.68%
Suicide Attempt	0.19%	4.34%
Suicide Death	0.03%	1.83%
PTSD	4.29%	20.25%
Depression	2.08%	14.27%
Anxiety	1.52%	12.24%
Substance Misuse	0.98%	9.84%
Alcohol Misuse	0.92%	9.56%
Drug Misuse	0.79%	8.85%
Other Mental	13.17%	33.81%
Other Psychological	1.65%	12.73%
Gender		
Male	86.61%	34.05%
Female	13.39%	34.05%
Race		
White	54.77%	49.77%
Black	28.44%	45.11%
Hispanic	5.23%	22.26%
Asian	2.91%	16.82%
Other Race	8.65%	28.11%
MOS		
Combat	21.66%	41.19%
Aviation	2.12%	14.39%
Medical	11.14%	31.47%
Combat Service	13.16%	33.81%
Service Support	28.31%	45.05%
Other MOS	23.60%	42.46%
AFQT CAT		
AFQT CAT 1 (0 to 30, include missing)	24.08%	42.76%
AFQT CAT 2 (31 to 50)	24.21%	42.84%
AFQT CAT 3 (51 to 65)	21.67%	41.20%
AFQT CAT 4 (66 to 93)	26.18%	43.96%
AFQT CAT 5 (>93)	3.86%	19.27%

Stressful Event		
Deployed	25.72%	43.71%
Divorced	11.70%	32.15%
Demoted	0.13%	3.62%
Location		
DIV 1—New England	0.80%	8.92%
DIV 2—Middle Atlantic	3.84%	19.23%
DIV 3—East North Central	2.60%	15.93%
DIV—West North Central	3.96%	19.50%
DIV 5—South Atlantic	18.37%	38.72%
DIV 6—East South Central	5.56%	22.91%
DIV 7—West South Central	11.29%	31.65%
DIV 8—Mountain	4.39%	20.49%
DIV 9—Pacific	5.71%	23.20%
Military Location	5.25%	22.31%
Other Location	0.58%	7.57%
Missing Location	37.63%	48.45%

2. Unit-Month Observations

In this sample, there are 796,858 unit-month observations consisting 17,107 peer groups (companies), after excluding 21% of the person-month observations, either because their units are too large for credible peer influence mechanisms to work (beyond the 95th percentile) or the unit contains only one person-month observation within the unit, and 15% of the observations with different platoon and company locations. Figure 10 illustrates the spread of the peer group size for the senior enlisted.

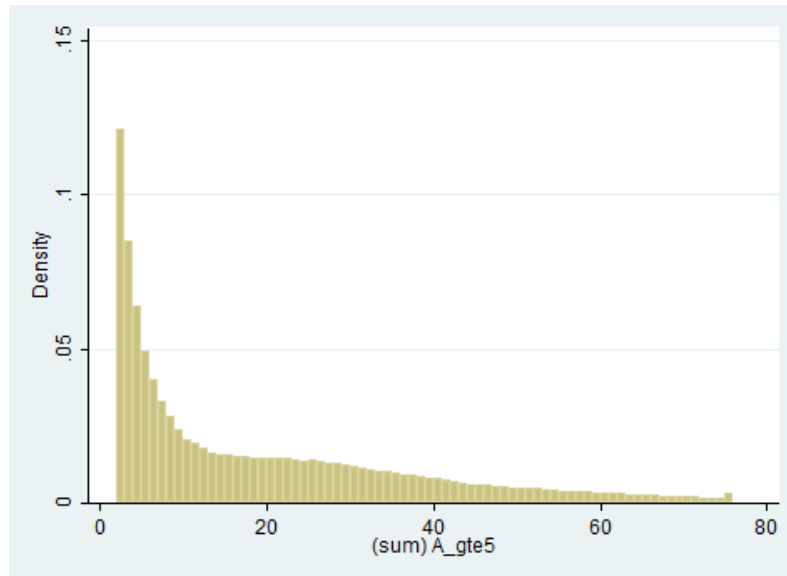


Figure 10. Histogram of the Peer Group Size for the Senior Enlisted

Table 6 presents the full summary statistics of senior enlisted peer group. The summary statistics are broken out into 3 categories like the officer peer group, lowest quartile, interquartile, and upper quartile of the mental health prevalence distribution. We highlight a few noticeable differences across the three categories. First, for MOS categories, units with high mental health incidents have more soldiers in Combat MOS (18.92% vs. 12.76%) but fewer soldiers in Service Support MOS (29.75% vs. 33.01%), compared to units in the lowest quartile of the mental health distribution. In terms of AFQT categories, units with high mental health incidents have more soldiers in AFQT categories like 2, 3 and 4, but fewer soldiers in AFQT category 1, compared to units in the lowest quartile of the mental health distribution. Units in West South Central region and military locations are over-represented in the highest quartile compared to lowest quartile units, but units in East North Central region is under-represented in the highest quartile compared to lowest quartile units. Consistent with our expectation, units in the highest quartile has higher % of soldiers divorced compared to units in the lowest quartile (15.29% vs. 8.40%). On the other hand, % of soldiers that were deployed or demoted is lower in units in the highest quartile compared to units in the lowest quartile.

Table 6. Summary Statistics for E5 and above at the Company Level

	Overall n=796,858		Lower Quartile n=261,143		Upper Quartile n=199,076		Interquartile n=336,639	
	mean	sd	mean	sd	mean	sd	mean	sd
Mental Health Diagnosis								
% Any Mental	14.00%	15.94%	0.00%	0.00%	36.43%	14.05%	11.59%	5.45%
% Suicide Attempt	0.17%	1.57%	0.00%	0.00%	0.47%	2.90%	0.14%	0.89%
% Suicide Death	0.05%	1.15%	0.00%	0.00%	0.15%	2.25%	0.02%	0.34%
% PTSD	3.83%	8.38%	0.00%	0.00%	10.83%	13.56%	2.65%	3.99%
% Depression	1.97%	5.72%	0.00%	0.00%	5.11%	9.96%	1.64%	3.12%
% Anxiety	1.38%	4.77%	0.00%	0.00%	3.85%	8.45%	1.00%	2.52%
% Substance Misuse	0.87%	3.53%	0.00%	0.00%	2.26%	6.31%	0.72%	2.04%
% Alcohol Misuse	0.82%	3.41%	0.00%	0.00%	2.13%	6.10%	0.68%	1.98%
% Drug Misuse	0.69%	3.14%	0.00%	0.00%	1.83%	5.66%	0.56%	1.81%
% Other Mental	1.53%	5.09%	0.00%	0.00%	4.19%	9.03%	1.14%	2.66%
% Other Psychological	12.30%	15.01%	0.00%	0.00%	32.36%	15.40%	9.98%	5.66%
Gender								
% Male	84.43%	17.52%	84.00%	20.99%	83.68%	18.43%	85.22%	13.52%
% Female	15.57%	17.52%	16.00%	20.99%	16.32%	18.43%	14.78%	13.52%
Race								
% White	55.31%	26.99%	56.66%	32.61%	55.11%	25.89%	54.38%	22.37%
% Black	27.83%	24.24%	26.98%	28.82%	27.53%	23.37%	28.67%	20.54%
% Hispanic	5.52%	11.17%	5.35%	14.01%	5.83%	10.08%	5.48%	9.10%
% Asian	3.15%	8.24%	3.24%	10.64%	3.21%	7.57%	3.05%	6.24%
% Other Race	8.18%	11.63%	7.77%	14.76%	8.33%	12.10%	8.42%	8.02%
MOS								
% Combat	16.82%	28.05%	12.76%	24.46%	18.92%	28.80%	18.72%	29.82%
% Aviation	2.27%	10.82%	2.29%	11.73%	2.00%	9.77%	2.41%	10.67%
% Medical	10.81%	16.64%	10.17%	19.04%	11.22%	16.66%	11.07%	14.49%
% Combat Service	12.47%	21.72%	10.86%	21.90%	12.60%	21.78%	13.64%	21.47%
% Service Support	31.15%	29.42%	33.01%	33.30%	29.75%	28.45%	30.55%	26.56%
% Other MOS	26.48%	27.21%	30.91%	31.23%	25.52%	26.54%	23.61%	23.57%
AFQT Categories								
% AFQT CAT 1 (0 to 30, include missing)	25.87%	23.81%	32.19%	29.25%	18.64%	21.15%	25.24%	18.74%
% AFQT CAT 2 (31 to 50)	22.75%	18.52%	18.72%	21.76%	26.60%	19.68%	23.60%	13.90%
% AFQT CAT 3 (51 to 65)	20.97%	16.62%	18.88%	21.12%	23.55%	17.43%	21.08%	10.98%
% AFQT CAT 4 (66 to 93)	26.34%	19.97%	25.91%	25.13%	27.43%	20.29%	26.02%	14.48%
% AFQT CAT 5 (>93)	4.07%	8.68%	4.30%	11.28%	3.79%	8.45%	4.06%	6.12%
Stressful Event								
% Deployed	23.95%	31.55%	21.41%	30.28%	18.76%	28.61%	28.99%	33.39%
% Divorced	11.15%	12.98%	8.40%	15.22%	15.29%	14.62%	10.83%	8.74%
% Demoted	0.17%	1.92%	0.24%	2.71%	0.17%	1.91%	0.13%	0.91%

	Overall n=796,858		Lower Quartile n=261,143		Upper Quartile n=199,076		Interquartile n=336,639	
	mean	sd	mean	sd	mean	sd	mean	sd
Location of Units								
DIV 1—New England	1.09%	10.39%	1.55%	12.36%	0.81%	8.96%	0.90%	9.44%
DIV 2—Middle Atlantic	3.49%	18.36%	3.58%	18.57%	3.02%	17.12%	3.71%	18.91%
DIV 3—East North Central	3.40%	18.12%	4.75%	21.26%	2.36%	15.19%	2.97%	16.97%
DIV—West North Central	3.51%	18.40%	4.23%	20.14%	3.34%	17.97%	3.04%	17.18%
DIV 5—South Atlantic	13.90%	34.60%	12.08%	32.59%	12.93%	33.55%	15.88%	36.55%
DIV 6—East South Central	4.51%	20.74%	4.22%	20.10%	3.99%	19.57%	5.04%	21.87%
DIV 7—West South Central	7.91%	26.99%	4.96%	21.71%	10.40%	30.53%	8.73%	28.22%
DIV 8—Mountain	3.70%	18.88%	3.27%	17.79%	4.42%	20.56%	3.60%	18.64%
DIV 9—Pacific	4.96%	21.71%	4.78%	21.33%	5.12%	22.04%	5.01%	21.81%
Military Location	4.50%	20.72%	3.37%	18.04%	5.09%	21.98%	5.02%	21.84%
Other Location	0.63%	7.89%	0.83%	9.08%	0.34%	5.83%	0.64%	7.95%
Missing Location	48.41%	49.97%	52.38%	49.94%	48.17%	49.97%	45.46%	49.79%

F. DESCRIPTIVE STATISTICS FOR JUNIOR ENLISTED

1. Person-Month Observations

The summary statistics for the junior enlisted, are shown in Table 7. There are 34,637,320 junior enlisted-month observations. From the sample, the U.S. Army has approximately 14.2% of its junior enlisted diagnosed with any mental disorders, which is lower than the national average of 20% but higher than the overall Army. Of the mental disorders, which are of interest in this study, PTSD is highest at 2.71%, followed by depression at 1.54% and anxiety at 1.41%. Substance misuse, including alcohol and drug misuses, which are very common at the national level, are low for the junior enlisted, even though it is higher than that of the officers and senior enlisted. Nonetheless, the diagnosis of mental disorders might also likely appeared lower due to the possibility of non-reporting or lower propensity in care seeking, given concerns of career and social implications.

Majority of the junior enlisted sample are Males (82.28%), which is similar to the overall Army distribution. On the other hand, minority is over-represented among the junior enlisted compared to the National average (73.6% of the U.S. population are Whites), with the majority of Whites at only 61.48%. The junior enlisted are mainly from the Combat (22.80%) and Service Support (29.07%) MOS, with most of them located in South Atlantic (17.21%) and West South Central (12.05%) regions.

For stressful event indicators, 23.72% of the junior enlisted have been through one or more deployments. In addition, 3.72% of the sample have experienced divorce and 1.52% have experienced demotion. Divorce cases are much lower compared to the officers and senior enlisted possibly due to the lower count of married junior enlisted given their lower average age at the ranks E1 to E4.

Table 7. Summary Statistics for E1 to E4 Peer Group

Enlisted E1 to E4 Peer Group		
n = 34,637,320	Overall	
	mean	sd
Mental Health Diagnosis		
Any Mental	14.17%	34.87%
Suicide Attempt	0.44%	6.60%
Suicide Death	0.03%	1.80%
PTSD	2.71%	16.24%
Depression	1.54%	12.33%
Anxiety	1.41%	11.79%
Substance Misuse	1.29%	11.29%
Alcohol Misuse	1.14%	10.60%
Drug Misuse	1.08%	10.34%
Other Mental	12.66%	33.25%
Other Psychological	1.35%	11.54%
Gender		
Male	82.28%	38.19%
Female	17.72%	38.19%

Enlisted E1 to E4 Peer Group		
n = 34,637,320	Overall	
	mean	sd
Race		
White	61.48%	48.66%
Black	19.20%	39.38%
Hispanic	9.44%	29.24%
Asian	5.33%	22.47%
Other Race	4.55%	20.84%
MOS		
Combat	22.80%	41.96%
Aviation	2.86%	16.67%
Medical	11.21%	31.55%
Combat Service	13.99%	34.69%
Service Support	29.07%	45.41%
Other MOS	20.06%	40.04%
AFQT CAT		
AFQT CAT 1 (0 to 30, include missing)	4.36%	20.41%
AFQT CAT 2 (31 to 50)	32.77%	46.94%
AFQT CAT 3 (51 to 65)	26.55%	44.16%
AFQT CAT 4 (66 to 93)	31.69%	46.53%
AFQT CAT 5 (>93)	4.62%	21.00%
Stressful Event		
Deployed	23.72%	42.53%
Divorced	3.72%	18.91%
Demoted	1.52%	12.24%
Location		
DIV 1—New England	0.75%	8.62%
DIV 2—Middle Atlantic	3.74%	18.96%
DIV 3—East North Central	2.28%	14.92%
DIV—West North Central	4.34%	20.37%
DIV 5—South Atlantic	17.21%	37.75%
DIV 6—East South Central	4.64%	21.04%
DIV 7—West South Central	12.05%	32.56%
DIV 8—Mountain	4.20%	20.06%
DIV 9—Pacific	5.38%	22.57%
Military Location	4.35%	20.40%
Other Location	0.48%	6.94%
Missing Location	40.57%	49.10%

2. Unit-Month Observations

In this sample, there are 1,291,165 unit-month observations consisting 33,426 peer groups (platoons), after excluding 25% of the person-month observations, either because their units are too large for credible peer influence mechanisms to work (beyond the 95th percentile) or the unit contains only one person-month observation within the unit. Figure 11 illustrates the spread of the peer group size for the junior enlisted.

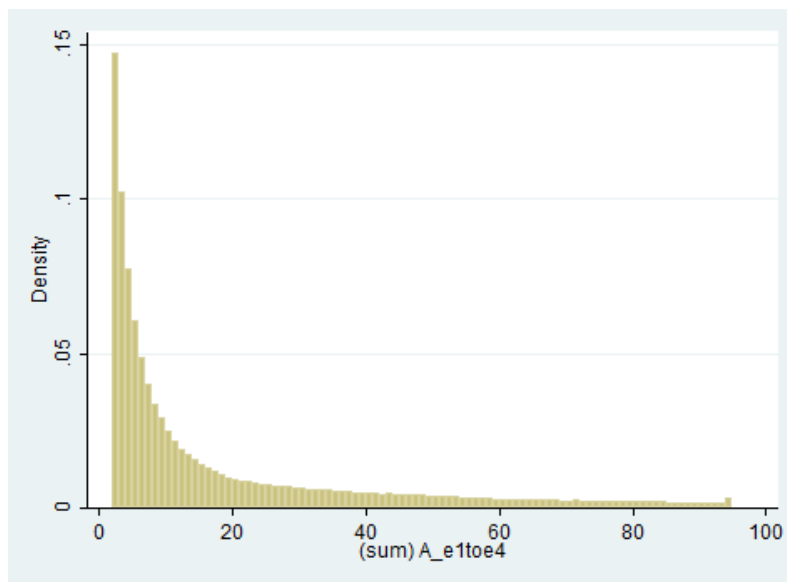


Figure 11. Histogram of the Peer Group Size for the Junior Enlisted

Table 8 presents the full summary statistics of junior enlisted peer group. The summary statistics are broken out into 3 categories like the officer peer group, lowest quartile, interquartile, and upper quartile of the mental health prevalence distribution. We highlight a few noticeable differences across the three categories. First, female is over-represented in units with high incidents of mental health diagnosis (25.34% in highest quartile vs. 21.05% in the lowest quartile). In terms of MOS, units with high mental health incidents have more soldiers in Combat MOS, compared to units in the lowest quartile of the mental health distribution (17.15% vs. 15.61%). Units in South Atlantic region, West

South Central region and military locations are over-represented in the highest quartile compared to lowest quartile units, but units in New England region, East North Central region and other locations are under-represented in the highest quartile compared to lowest quartile units. Consistent with our expectation, units in the highest quartile has higher % of soldiers divorced compared to units in the lowest quartile (6.46% vs. 2.69%). Similar for % of soldiers demoted. On the other hand, % of soldiers that were deployed is lower in units in the highest quartile compared to units in the lowest quartile (13.73% vs. 16.12%).

Table 8. Summary Statistics for E1 to E4 at the Platoon Level

	Overall n=1,291,165		Lower Quartile n=504,444		Upper Quartile n=321,601		Interquartile n=465,120	
	mean	sd	mean	sd	mean	sd	mean	sd
Mental Health Diagnosis								
% Any Mental	13.85%	17.45%	0.00%	0.00%	38.64%	16.10%	11.73%	5.35%
% Suicide Attempt	0.38%	2.56%	0.00%	0.00%	1.09%	4.79%	0.29%	1.36%
% Suicide Death	0.04%	1.08%	0.00%	0.00%	0.13%	2.09%	0.03%	0.42%
% PTSD	2.61%	7.58%	0.00%	0.00%	7.87%	13.17%	1.80%	3.52%
% Depression	1.65%	5.76%	0.00%	0.00%	4.83%	10.30%	1.24%	2.94%
% Anxiety	1.41%	5.38%	0.00%	0.00%	4.29%	9.75%	0.96%	2.57%
% Substance Misuse	1.11%	4.47%	0.00%	0.00%	3.21%	8.11%	0.85%	2.36%
% Alcohol Misuse	0.98%	4.19%	0.00%	0.00%	2.84%	7.64%	0.76%	2.24%
% Drug Misuse	0.90%	3.97%	0.00%	0.00%	2.59%	7.23%	0.71%	2.15%
% Other Mental	1.33%	5.31%	0.00%	0.00%	3.98%	9.70%	0.92%	2.52%
% Other Psychological	12.40%	16.47%	0.00%	0.00%	34.77%	17.22%	10.38%	5.55%
Gender								
% Male	78.26%	21.43%	78.95%	24.05%	74.66%	23.06%	80.00%	16.35%
% Female	21.74%	21.43%	21.05%	24.05%	25.34%	23.06%	20.00%	16.35%
Race								
% White	60.77%	27.59%	60.67%	32.85%	60.73%	26.08%	60.92%	21.72%
% Black	20.67%	22.86%	20.92%	27.24%	21.10%	21.94%	20.10%	17.68%
% Hispanic	8.93%	15.08%	8.67%	18.33%	8.35%	13.09%	9.61%	12.15%
% Asian	4.97%	11.00%	5.02%	13.66%	5.01%	9.97%	4.88%	8.04%
% Other Race	4.66%	9.87%	4.72%	12.15%	4.81%	10.07%	4.49%	6.32%
MOS								
% Combat	17.29%	27.77%	15.61%	26.06%	17.15%	26.88%	19.20%	29.97%
% Aviation	2.78%	12.20%	2.49%	11.92%	2.22%	10.19%	3.49%	13.65%
% Medical	10.93%	18.07%	10.76%	19.83%	11.86%	19.36%	10.48%	14.84%

	Overall n=1,291,165		Lower Quartile n=504,444		Upper Quartile n=321,601		Interquartile n=465,120	
	mean	sd	mean	sd	mean	sd	mean	sd
% Combat Service	12.91%	22.28%	11.85%	22.50%	12.68%	21.72%	14.21%	22.36%
% Service Support	30.17%	29.68%	30.43%	31.97%	29.90%	28.82%	30.07%	27.62%
% Other MOS	25.92%	27.29%	28.84%	29.97%	26.20%	26.82%	22.56%	23.97%
AFQT Categories								
% AFQT CAT 1 (0 to 30, include missing)	4.52%	10.08%	4.96%	12.74%	4.46%	9.67%	4.09%	6.40%
% AFQT CAT 2 (31 to 50)	32.73%	22.54%	32.40%	26.92%	33.61%	23.13%	32.48%	15.95%
% AFQT CAT 3 (51 to 65)	26.39%	19.12%	25.69%	23.54%	27.24%	20.07%	26.55%	11.60%
% AFQT CAT 4 (66 to 93)	31.68%	22.07%	31.97%	26.55%	30.61%	22.67%	32.10%	15.22%
% AFQT CAT 5 (>93)	4.68%	9.76%	4.97%	12.12%	4.08%	9.39%	4.78%	6.62%
Stressful Event								
% Divorced	3.96%	8.64%	2.69%	8.98%	6.46%	11.18%	3.61%	5.19%
% Demoted	1.62%	5.61%	1.30%	6.30%	2.34%	6.96%	1.47%	3.20%
% Deployed	18.56%	27.64%	16.12%	25.87%	13.73%	22.67%	24.54%	31.32%
Location of Units								
DIV 1—New England	1.48%	12.09%	1.97%	13.89%	1.00%	9.97%	1.29%	11.28%
DIV 2—Middle Atlantic	4.33%	20.36%	4.48%	20.70%	3.33%	17.94%	4.86%	21.51%
DIV 3—East North Central	4.32%	20.33%	5.48%	22.77%	2.82%	16.55%	4.10%	19.83%
DIV—West North Central	4.85%	21.49%	5.43%	22.66%	4.42%	20.55%	4.52%	20.78%
DIV 5—South Atlantic	14.18%	34.88%	12.60%	33.19%	14.34%	35.05%	15.78%	36.45%
DIV 6—East South Central	5.02%	21.83%	5.18%	22.16%	4.64%	21.03%	5.11%	22.01%
DIV 7—West South Central	8.75%	28.25%	6.08%	23.90%	10.59%	30.78%	10.36%	30.47%
DIV 8—Mountain	4.18%	20.01%	3.88%	19.32%	4.69%	21.14%	4.14%	19.92%
DIV 9—Pacific	5.35%	22.51%	5.17%	22.15%	5.12%	22.04%	5.71%	23.21%
Military Location	3.32%	17.91%	1.87%	13.54%	3.88%	19.31%	4.50%	20.73%
Other Location	0.80%	8.91%	1.21%	10.95%	0.31%	5.59%	0.69%	8.28%
Missing Location	43.42%	49.56%	46.63%	49.89%	44.85%	49.73%	38.94%	48.76%

G. DESCRIPTIVE STATISTICS FOR COMBAT UNIT SUBSET

1. Person-Month Observations

The summary statistics for the combat unit subset are shown in Table 9. There are 1,533,619 soldiers-month observations, of which 9.35% of the observations are officer, 39.06% are senior enlisted and 51.59% are junior enlisted. From the sample, approximately 13% of the soldiers are diagnosed with

any mental disorders, which is lower than the national average of 20% but higher than the overall Army. Of the mental disorders, which are of interest in this study, PTSD is highest at 3.66%, followed by depression at 1.25% and anxiety at 1.22%. Substance misuse, including alcohol and drug misuses, which are very common at the national level, are low for the subset. Nonetheless, the diagnosis of mental disorders might also likely appeared lower due to the possibility of non-reporting or lower propensity in care seeking, given concerns of career and social implications.

In terms of demographics, majority of the sample are males (96.97%), which is above to the overall Army distribution, possibly due to the highly concentration of Combat MOS. On the other hand, racial distribution for the subset are in alignment to the National distribution (73.6% of the U.S. population are Whites), with the majority of Whites at 71.48%. The subset are mainly located in South Atlantic region (20.1%).

For stressful event indicators, 25.79% of the soldiers have been through one or more deployments. In addition, 6.78% of the sample have experienced divorce and 0.80% have experienced demotion. Divorce cases lower for the junior enlisted compared to the officers and senior enlisted as mentioned previously. Demotion cases on the other hand are lower for the officers and senior enlisted compared to the junior enlisted.

Table 9. Summary Statistics for Combat Unit Subset

Combat Sub-Unit Peer Group		
n = 1,533,619	Overall	
	mean	sd
Mental Health Diagnosis		
Any Mental	12.78%	33.39%
Suicide Attempt	0.29%	5.39%
Suicide Death	0.05%	2.13%
PTSD	3.66%	18.77%
Depression	1.25%	11.09%
Anxiety	1.22%	10.98%
Substance Misuse	1.22%	10.98%
Alcohol Misuse	1.11%	10.47%
Drug Misuse	0.93%	9.57%
Other Mental	11.26%	31.62%
Other Psychological	1.38%	11.65%
Rank Group		
Officer	9.35%	29.11%
E1 to E4	51.59%	49.97%
E5 and above	39.06%	48.79%
Gender		
Male	96.97%	17.15%
Female	3.03%	17.15%
Race		
White	71.48%	45.15%
Black	11.46%	31.86%
Hispanic	6.67%	24.95%
Asian	4.09%	19.80%
Other Race	6.30%	24.30%
MOS		
Combat	87.53%	33.04%
Aviation	0.17%	4.13%
Medical	1.95%	13.81%
Combat Service	1.60%	12.56%
Service Support	4.09%	19.80%
Other MOS	4.67%	21.09%
AFQT CAT		
AFQT CAT 1 (0 to 30, include missing)	14.82%	35.53%
AFQT CAT 2 (31 to 50)	26.18%	43.96%
AFQT CAT 3 (51 to 65)	23.18%	42.20%
AFQT CAT 4 (66 to 93)	30.45%	46.02%
AFQT CAT 5 (>93)	5.37%	22.55%

Combat Sub-Unit Peer Group		
n = 1,533,619	Overall	
	mean	sd
Stressful Event		
Deployed	25.79%	43.75%
Divorced	6.78%	25.13%
Demoted	0.80%	8.91%
Location		
DIV 1—New England	0.40%	6.33%
DIV 2—Middle Atlantic	4.08%	19.78%
DIV 3—East North Central	1.54%	12.31%
DIV—West North Central	4.03%	19.68%
DIV 5—South Atlantic	20.05%	40.04%
DIV 6—East South Central	5.65%	23.09%
DIV 7—West South Central	8.78%	28.30%
DIV 8—Mountain	3.45%	18.26%
DIV 9—Pacific	6.49%	24.64%
Military Location	2.89%	16.75%
Other Location	0.22%	4.66%
Missing Location	42.41%	49.42%

2. Unit-Month Observations

In this selected combat unit subset of unit size between 5 and 50, made up with more than 80% of soldiers from the Combat MOS, there are 45,668 unit-month observations consisting 3,741 peer groups (platoons). The group is deliberately selected as such to focus on frontline combat units at the platoon level. Figure 12 illustrates the spread of peer group size for the selected subset of combat units.

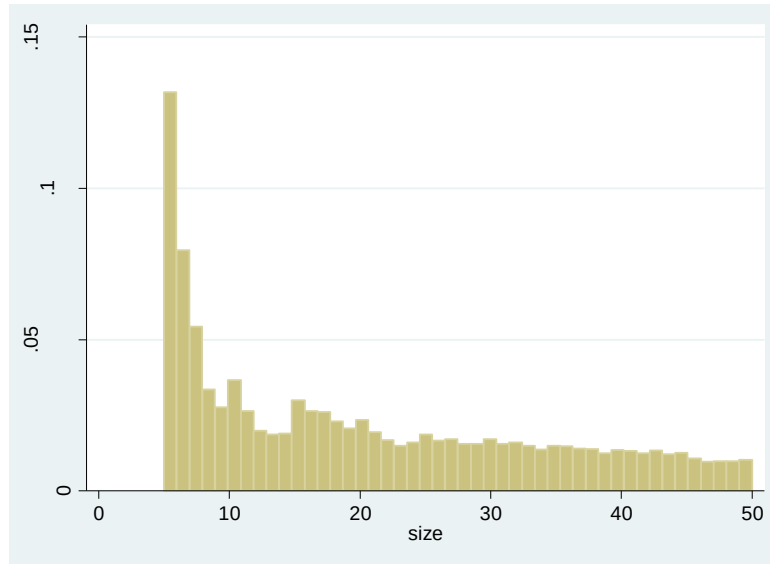


Figure 12. Histogram of the Peer Group Size for the Selected Subset of Combat Units

Table 10 presents the full summary statistics of combat unit subset. The summary statistics are broken out into 3 categories like the officer peer group, lowest quartile, interquartile, and upper quartile of the mental health prevalence distribution. We highlight a few noticeable differences across the three categories. First, Whites are under-represented in units with high incidents of mental health diagnosis (67.64% in highest quartile vs. 73.85% in the lowest quartile. In terms of AFQT categories, units with high mental health incidents have more soldiers in AFQT categories like 2, 3 and 4, but much fewer soldiers in AFQT category 1, compared to units in the lowest quartile of the mental health distribution. Units in West South Central region and South Atlantic region are over-represented in the highest quartile compared to lowest quartile units, but units in New England region, East North Central region, Pacific region and other locations are under-represented in the highest quartile compared to lowest quartile units. Consistent with our expectation, units in the highest quartile has higher % of soldiers divorced compared to units in the lowest quartile (10.45% vs. 4.81%). Similar for % of soldiers demoted. On the other hand, % of soldiers

that were deployed is lower in units in the highest quartile compared to units in the lowest quartile (14.00% vs. 24.50%).

Table 10. Summary Statistics for Selected Units at the Platoon Level

Unit Size of 5 to 50 More than 80% in MOS_Combat	Overall n=45,668		Lower Quartile n=12,905		Upper Quartile n=11,417		Interquartile n=21,346	
	mean	sd	mean	sd	mean	sd	mean	sd
Mental Health Diagnosis								
% Any Mental	12.29%	13.50%	0.00%	0.00%	31.09%	12.30%	9.66%	4.67%
% Suicide Attempt	0.25%	1.45%	0.00%	0.00%	0.67%	2.55%	0.17%	0.94%
% Suicide Death	0.06%	0.83%	0.00%	0.00%	0.16%	1.40%	0.04%	0.64%
% PTSD	3.70%	7.12%	0.00%	0.00%	10.68%	10.55%	2.20%	3.51%
% Depression	1.31%	3.39%	0.00%	0.00%	3.26%	5.37%	1.07%	2.46%
% Anxiety	1.27%	3.63%	0.00%	0.00%	3.68%	6.07%	0.75%	2.04%
% Substance Misuse	1.03%	2.99%	0.00%	0.00%	2.78%	4.92%	0.73%	1.96%
% Alcohol Misuse	0.93%	2.80%	0.00%	0.00%	2.46%	4.61%	0.67%	1.90%
% Drug Misuse	0.83%	2.63%	0.00%	0.00%	2.24%	4.38%	0.57%	1.72%
% Other Mental	1.46%	3.78%	0.00%	0.00%	3.95%	6.08%	1.01%	2.42%
% Other Psychological	10.91%	12.69%	0.00%	0.00%	27.95%	12.80%	8.39%	4.84%
Gender								
% Male	96.00%	6.62%	95.52%	8.06%	96.13%	6.46%	96.22%	5.64%
% Female	4.00%	6.62%	4.48%	8.06%	3.87%	6.46%	3.78%	5.64%
Race								
% White	70.74%	21.41%	73.85%	24.87%	67.64%	18.05%	70.52%	20.52%
% Black	12.87%	14.67%	12.27%	16.96%	13.80%	13.38%	12.74%	13.80%
% Hispanic	6.41%	11.82%	6.01%	14.47%	6.60%	9.10%	6.55%	11.30%
% Asian	3.88%	9.24%	3.44%	10.18%	4.61%	8.51%	3.76%	8.99%
% Other Race	6.10%	8.04%	4.43%	8.63%	7.35%	8.27%	6.43%	7.36%
MOS								
% Combat	87.81%	8.00%	87.60%	9.05%	87.69%	7.68%	88.00%	7.46%
% Aviation	0.22%	1.91%	0.30%	2.58%	0.18%	1.47%	0.19%	1.62%
% Medical	1.66%	3.63%	1.61%	4.10%	1.70%	3.77%	1.66%	3.22%
% Combat Service	1.34%	3.36%	1.30%	4.07%	1.46%	3.57%	1.30%	2.70%
% Service Support	4.03%	5.32%	3.54%	6.13%	4.34%	5.42%	4.15%	4.68%
% Other MOS	4.95%	6.46%	5.64%	7.83%	4.64%	6.35%	4.71%	5.51%
AFQT Categories								
% AFQT CAT 1 (0 to 30, include missing)	22.16%	26.25%	33.66%	34.81%	16.36%	19.97%	18.31%	20.38%
% AFQT CAT 2 (31 to 50)	24.74%	16.25%	19.43%	17.96%	29.20%	15.57%	25.56%	14.57%
% AFQT CAT 3 (51 to 65)	21.15%	13.11%	17.45%	15.73%	24.13%	12.94%	21.79%	10.74%

Unit Size of 5 to 50 More than 80% in MOS_Combat	Overall n=45,668		Lower Quartile n=12,905		Upper Quartile n=11,417		Interquartile n=21,346	
	mean	sd	mean	sd	mean	sd	mean	sd
% AFQT CAT 4 (66 to 93)	27.20%	15.88%	24.51%	18.91%	26.53%	14.49%	29.18%	14.22%
% AFQT CAT 5 (>93)	4.76%	6.70%	4.95%	7.95%	3.78%	5.92%	5.16%	6.20%
Stressful Event								
% Deployed	21.17%	28.06%	24.50%	29.60%	14.00%	20.52%	22.98%	29.88%
% Divorced	7.15%	8.56%	4.81%	8.21%	10.45%	10.06%	6.79%	7.25%
% Demoted	0.77%	2.82%	0.60%	2.92%	1.23%	3.68%	0.62%	2.11%
Location of Units								
DIV 1—New England	0.91%	9.51%	1.98%	13.92%	0.53%	7.23%	0.48%	6.90%
DIV 2—Middle Atlantic	3.38%	18.06%	3.94%	19.47%	4.04%	19.69%	2.68%	16.15%
DIV 3—East North Central	3.23%	17.69%	4.82%	21.42%	2.38%	15.25%	2.73%	16.30%
DIV—West North Central	5.36%	22.52%	5.63%	23.06%	4.53%	20.79%	5.64%	23.07%
DIV 5—South Atlantic	18.07%	38.48%	12.26%	32.80%	16.72%	37.32%	22.30%	41.63%
DIV 6—East South Central	3.43%	18.19%	2.84%	16.62%	3.77%	19.04%	3.60%	18.62%
DIV 7—West South Central	6.49%	24.64%	5.07%	21.93%	9.62%	29.48%	5.68%	23.15%
DIV 8—Mountain	2.14%	14.46%	1.64%	12.71%	2.48%	15.55%	2.25%	14.84%
DIV 9—Pacific	4.67%	21.09%	5.52%	22.83%	3.13%	17.41%	4.98%	21.74%
Military Location	1.65%	12.75%	1.54%	12.32%	1.28%	11.24%	1.92%	13.73%
Other Location	0.46%	6.80%	0.89%	9.40%	0.10%	3.10%	0.40%	6.33%
Missing Location	50.21%	50.00%	53.86%	49.85%	51.44%	49.98%	47.34%	49.93%

H. EMPIRICAL FRAMEWORK AND METHODOLOGY

With the four peer groups defined, we perform two sets of analysis. First at the unit level of each peer group and second at the individual level of the combat unit subset only. The unit level analysis will allow the understanding of systematic variations in unit composition and geographical locations across units within each peer group with respect to unit-level incidents of mental health outcomes. The unit-level variables we examine include the unit's location, size, MOS spread, AFQT categories, gender and race composition, percent soldiers in the unit experiencing stressful episodes (divorce, deployment and demotion). The individual level analysis will on the other hand allow the understanding of peer influence within the unit with respect to the individual's mental health outcomes.

1. Unit Level Analysis

To examine this, individual person-month observations are aggregated to their respective peer grouping and units; company level for Officers and Senior Enlisted (E5 and above), platoon level for Junior Enlisted (E1 to E4). There are two different models, which will be examined:

1. Binary outcomes of each of the eight different mental health indicators on the likelihood of at least one individual is diagnosed:
Any mental health diagnosis, Suicide attempt, PTSD, Depression, Anxiety, Substance misuse, Alcohol misuse, Drug misuse.
2. Percentages of person in each of the eight outcomes

The analysis will be done for each of the peer groups, including the selected subset of combat units. Variables used for both specifications will be unit composition in areas of demographic variables (such as % female and % of each race category), service information like MOS and AFQT, and stressful events (percentage of soldiers in each unit that were divorced, demoted, or deployed). Time-invariant variables of unit's location and size will be also be included for random-effects models, to be described in more details.

Both random and fixed effects regressions will be employed to facilitate the study. The fixed effects will allow the study of variations across units, eliminating unobserved time-invariant differences such as culture or leadership style. The random effects on the other hand will allow the study of variations in time-variant variables such as location and size.

For fixed effects, we will utilize the following general model:

$$y_{it} = \beta x1_{it} + \beta x2_{it} + \beta x3_{it} + a_i + \epsilon_{it}$$

y_{it} = mental health outcomes

$x1_{it}$ = Demographic information

$x2_{it}$ = Service information

$x3_{it}$ = Stressful event indicators

a_i = time-invariant variable (included only in random effects model)

ε_{it} = error term

For random effects, we will utilize the following general model:

$$y_{it} = \beta x_{1it} + \beta x_{2it} + \beta x_{3it} + v_{it}$$

y_{it} = mental health outcomes

x_{1it} = Demographic information

x_{2it} = Service information

x_{3it} = Stressful event indicators

v_{it} = composite error term

2. Individual Level Analysis

Peer influence could be largely affected by peer relationships (type and quality of interactions) and nature of work (stressful vs. non-stressful environment). Using the entire Army sample to estimate peer influence on individual outcomes would not be credible due to the huge variation in unit types (affecting the nature of work) and sizes (affecting the peer relationships). With the lack of more detailed UIC information to determine the correct classifications of the units, only individual person-month observations from the selected subset of combat units will be used. This will allow the focus on specific unit types and sizes, in this case, the combat units at the platoon level, where established peer relationships can be put into play to better estimate the extent of peer influence. The outcomes to be examined are the eight binary mental health diagnose indicators for each individual soldier: Any mental health diagnosis, Suicide attempt, PTSD, Depression, Anxiety, Substance misuse, Alcohol misuse, Drug misuse.

We estimate two separate models. Both models will include individual specific variables of demographic information like gender and race, service information like MOS and AFQT, stressful event indicators like divorce and demotion. Both models will also include unit-level variables designed to capture

peer influence. Besides the unit-level variables as described in the unit level analysis, two additional types of variables to distinguish between care seeking vs. condition influence are created:

(1) A binary variable, for instance, “X PTSD,” which will be coded with a value of “1” and “0” otherwise, if at least one soldier excluding him/herself is diagnosed with the seven mental disorders or any other mental disorders, and

(2) A binary variable, for instance, “Any Excluding PTSD,” which will be coded with a value of “1” and “0” otherwise, if at least one soldier excluding him/herself is diagnosed with any other mental disorders except the specific mental disorder of interest.

Model 2 refines Model 1 by replacing the binary indicators with three percentage categories, “Zero” (0 percentile), “Low” (>0 to 50 percentile), and “High” (>51 percentile) of individuals (excluding self) having the above events within the unit. Similar to the unit-level analysis, both random and fixed effects regressions will be employed to facilitate the study.

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IV. RESULTS AND ANALYSIS

The results of the analysis will be organized in two parts, unit level and individual level. Under the unit level analysis, all four peer groups (Officers, Senior Enlisted, Junior Enlisted and Selected Combat Unit Subset), will be analyzed in two separate models for each of the eight outcomes; examining variations across units within each peer group with respect to the mental health outcomes. There are no noticeable differences in the coefficients between the fixed and random effects regressions, suggesting that unobserved variations and time-invariant factors might not be causing significant biases within the same rank group in a unit. Therefore, only the random effect regression will be presented for the unit level analysis as it also contains the geographical differences of the units. Results from the fixed effect regression can be found in the appendix. Similarly, estimates for substance, alcohol and drug misuse are relatively consistent. Hence, only the estimates for substance misuse will be presented.

For the individual level analysis, only the selected combat unit subset will be examined for the extent of peer influence, in two separate models for each of the eight outcomes. Given that the individual level variables do not vary significantly in both models, only results of the unit level variables will be presented in model 2.

The regression results for the unit level analysis are organized into the specific two models:

1. The binary outcome of at least one individual diagnosed with the stated mental disorder
2. The percentage of individuals diagnosed with the stated mental disorder.

The eight outcomes are sub-categorized into five categories: (1) Any mental disorders, (2) Suicide attempt, (3) PTSD, (4) Mood disorders, and (5) Substance misuse.

A. UNIT LEVEL ANALYSIS FOR OFFICERS

1. Binary: The Unit Has at Least One Individual Diagnosed with the Given Outcome

Table 11 summarizes the regression outcomes of the likelihood of at least one individual diagnosed with the given outcome in an officer peer group. On average, the likelihood of at least one individual within the same rank group of a unit, being diagnosed with any mental disorders, increases 1.27 percentage points (pps) for every 10 pps increase in the proportion of females, holding other variables constant. Although this does imply that females within the same rank group of the unit are more likely to be diagnosed with any mental disorders as compared to males. It could also be due to the bias that females in general are more likely to report and seek for care vis-à-vis males. For race, a 10 pps increase of the proportion of Asians would decrease the likelihood of at least one individual being diagnosed with any mental disorders by 0.72 pps. This might again be caused by the differences in care seeking pattern that Asians being more conservative are less likely to seek for care. There does not seem to be significant differences in presence of mental health diagnoses by units' MOS composition among the officer population.

Units with higher percent of officers experiencing stressful events like deployment, divorce and demotion, have higher likelihood of at least one individual being diagnosed with any mental disorders, within the peer group. The likelihood increases by 0.22 and 1.04 pps, for every 10 pps increase in the proportion of officers who were currently deployed and post deployed respectively. On the other hand, the likelihood increases by 2.6 and 7.6 pps when at least one officer is currently going through divorced and post divorced

respectively in that unit. As officers are less susceptible to demotions, it is of no surprise that there are no significant differences for the demotion variables.

For geographical locations of the units, the likelihood of at least one individual being diagnosed with any mental disorders in a unit, as compared to those with missing unit locations, decreases by 5.7 and 3.9 pps when the unit is located in East North Central and West North Central regions respectively.

Not surprisingly, bigger unit sizes are associated with higher likelihood of at least one individual being diagnosed with any mental disorders within the peer group, from between 11.4 to 30.2 pps, as compared to small unit sizes of fewer than four officers.

As for suicide attempt, there are few significant predictors of unit-level variations in this outcome, most probably attributed to the very small sample (0.04%) diagnosed with suicide attempt among the officers.

Similar to overall mental disorders, having more female soldiers, higher AFQT soldiers, soldiers who are currently deployed or post deployed, at least one soldier who is post divorced, and those in bigger units, have higher likelihood of being diagnosed with PTSD. On the other hand, variables such as race and MOS do not seemed to have significant co-relations to the likelihood of being diagnosed with PTSD.

As for mood disorders, having more female soldiers, Medical MOS soldiers, those that are post deployed, at least one soldier who is currently experiencing divorce or post divorced, and those in larger units, have higher likelihood of being diagnosed with mood disorders; depression being more prominent of the two. On the other hand, having more Black or Asian soldiers, have a lower likelihood. Variables such as AFQT do not seemed to have significant co-relations to the likelihood of being diagnosed with mood disorders.

Similar to suicide attempt, there are few significant predictors of substance misuse at the unit level, most probably attributed to the very small sample (0.25%) diagnosed with substance misuse among the officers. However,

presence of officers going through stressful events, such as returning from deployment and going through divorce, are risk factors for unit level presence of substance misuse officers.

Table 11. Outcomes for Officers at the Company Level—Model 1

Model 1: Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.127**	0.003+	0.031**	0.062**	0.030**	-0.003
	(0.012)	(0.001)	(0.007)	(0.007)	(0.006)	(0.003)
Race—Reference: % White						
% Black	-0.006	-0.001	0.003	-0.016**	-0.006	-0.006+
	(0.011)	(0.001)	(0.007)	(0.006)	(0.005)	(0.003)
% Hispanic	-0.004	-0.001	0.016	-0.018	-0.013	-0.005
	(0.022)	(0.002)	(0.013)	(0.011)	(0.009)	(0.005)
% Asian	-0.072**	0	-0.025*	-0.027**	-0.012	-0.009
	(0.019)	(0.002)	(0.011)	(0.010)	(0.008)	(0.007)
% Other Race	0.058**	0.002	0.035**	-0.002	-0.014+	-0.003
	(0.017)	(0.002)	(0.011)	(0.009)	(0.008)	(0.005)
MOS—Reference: % Combat MOS						
% Aviation	0.038+	-0.005	-0.031*	0.007	-0.006	-0.005
	(0.021)	(0.003)	(0.013)	(0.012)	(0.009)	(0.006)
% Medical	0.064**	0.002	0.008	0.030**	0.023**	0.017**
	(0.016)	(0.003)	(0.010)	(0.009)	(0.007)	(0.005)
% Combat Service	0.004	0.002	-0.018*	0.005	-0.009	-0.005
	(0.013)	(0.002)	(0.009)	(0.008)	(0.006)	(0.004)
% Service Support	0.029*	0.001	0	0.013+	0.015*	0.007+
	(0.013)	(0.002)	(0.008)	(0.007)	(0.006)	(0.004)
% Other MOS	0.039**	0.002	0.002	-0.002	0.006	0.005
	(0.012)	(0.002)	(0.007)	(0.006)	(0.005)	(0.003)
Stressful Event Indicator						
% Currently Deployed	0.022**	0	0.034**	-0.001	0.004	0.001
	(0.006)	(0.001)	(0.004)	(0.004)	(0.003)	(0.002)
% Post Deployed	0.104**	0.001	0.093**	0.020**	0.018**	0.009**
	(0.008)	(0.001)	(0.005)	(0.004)	(0.003)	(0.002)
Currently Divorced	0.026**	0.001+	0.005	0.012**	0.005*	0.005**
	(0.004)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Post Divorced	0.076**	0.001*	0.028**	0.025**	0.017**	0.009**
	(0.004)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
Currently	-0.002	0.002	-0.013+	-0.008	-0.005	0.001

Model 1: Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Demoted						
	(0.011)	(0.002)	(0.007)	(0.007)	(0.006)	(0.004)
Post Demoted	0.008	0	0.005	-0.012	-0.01	-0.002
	(0.011)	(0.002)	(0.008)	(0.008)	(0.007)	(0.005)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.035	-0.005**	-0.01	0.005	-0.006	-0.020**
	(0.025)	(0.001)	(0.015)	(0.015)	(0.012)	(0.003)
DIV 2—Middle Atlantic	-0.008	-0.002	-0.005	0	-0.001	-0.007+
	(0.013)	(0.001)	(0.009)	(0.008)	(0.007)	(0.004)
DIV 3—East North Central	-0.057**	-0.002	-0.005	-0.007	-0.015**	-0.006
	(0.013)	(0.002)	(0.009)	(0.007)	(0.006)	(0.004)
DIV 4—West North Central	-0.039**	-0.004**	-0.021**	-0.017**	-0.003	-0.010**
	(0.012)	(0.001)	(0.008)	(0.006)	(0.006)	(0.003)
DIV 5—South Atlantic	0.01	-0.002*	-0.012*	-0.001	-0.001	0.003
	(0.007)	(0.001)	(0.005)	(0.004)	(0.004)	(0.003)
DIV 6—East South Central	-0.019+	-0.002*	-0.011	0.001	0.002	-0.007+
	(0.011)	(0.001)	(0.007)	(0.007)	(0.006)	(0.003)
DIV 7—West South Central	0.017+	0.003	0.008	0.014*	0.008	-0.001
	(0.009)	(0.002)	(0.007)	(0.006)	(0.005)	(0.003)
DIV 8—Mountain	-0.024+	-0.002	-0.007	-0.001	-0.004	-0.005
	(0.013)	(0.001)	(0.009)	(0.008)	(0.006)	(0.005)
DIV 9—Pacific	-0.009	-0.002	-0.014+	-0.006	-0.012*	-0.012**
	(0.012)	(0.001)	(0.008)	(0.007)	(0.005)	(0.003)
Military Location	0.019	-0.001	-0.005	0.005	0.009	0.003
	(0.012)	(0.002)	(0.009)	(0.008)	(0.007)	(0.005)
Other Location	-0.069**	-0.004**	-0.032*	0.006	-0.001	-0.012*
	(0.026)	(0.001)	(0.016)	(0.014)	(0.013)	(0.005)
Unit Size Category—Reference: Category 1 (<4 Officers)						
Size CAT 2 (4 to 8)	0.114**	0.001*	0.033**	0.027**	0.019**	0.007**
	(0.004)	(0.000)	(0.002)	(0.002)	(0.002)	(0.001)
Size CAT 3 (>8)	0.302**	0.004**	0.095**	0.083**	0.054**	0.027**
	(0.006)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
Year—Reference: Year 2002						
2003	0.013**	0.001+	-0.005**	0.001	0.002	0
	(0.005)	(0.000)	(0.002)	(0.003)	(0.002)	(0.001)
2004	0.022**	0.001	-0.009**	0.005	0.004	-0.003
	(0.007)	(0.001)	(0.003)	(0.004)	(0.003)	(0.002)
2005	0.057**	0.002*	0.003	0.012**	0.008*	-0.003

Model 1: Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.008)	(0.001)	(0.004)	(0.005)	(0.003)	(0.002)
2006	0.087**	0.003**	0.018**	0.020**	0.013**	0.001
	(0.008)	(0.001)	(0.004)	(0.005)	(0.003)	(0.003)
2007	0.123**	0.003**	0.044**	0.023**	0.023**	0.004
	(0.009)	(0.001)	(0.005)	(0.005)	(0.004)	(0.003)
2008	0.155**	0.004**	0.072**	0.027**	0.030**	0.007*
	(0.009)	(0.001)	(0.005)	(0.005)	(0.004)	(0.003)
2009	0.188**	0.005**	0.100**	0.035**	0.045**	0.011**
	(0.009)	(0.001)	(0.005)	(0.005)	(0.004)	(0.003)
2010	0.232**	0.006**	0.116**	0.045**	0.059**	0.019**
	(0.009)	(0.001)	(0.006)	(0.006)	(0.005)	(0.003)
2011	0.255**	0.007**	0.123**	0.054**	0.071**	0.028**
	(0.010)	(0.001)	(0.006)	(0.006)	(0.005)	(0.004)
Month—Reference: January						
Feb	0.004**	0	0.001**	0.001	0.001	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Mar	0.005**	0	0.003**	0.002**	0.001*	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Apr	0.005**	0	0.002**	0.002**	0.002**	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
May	0.008**	0	0.004**	0.003**	0.003**	0.001+
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Jun	0.011**	0.001*	0.006**	0.004**	0.004**	0.001**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Jul	0.013**	0.001*	0.006**	0.003**	0.005**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Aug	0.014**	0.001**	0.008**	0.004**	0.005**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Sep	0.017**	0.001**	0.009**	0.004**	0.006**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Oct	0.021**	0.001**	0.011**	0.004**	0.006**	0.003**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Nov	0.024**	0.001**	0.013**	0.005**	0.007**	0.003**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Dec	0.028**	0.001**	0.015**	0.006**	0.008**	0.003**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Constant	-0.049**	-0.003*	-0.047**	-0.016**	-0.024**	-0.003
	(0.011)	(0.002)	(0.006)	(0.006)	(0.005)	(0.003)
N	693413	693413	693413	693413	693413	693413

2. Percentage of Individuals Diagnosed

Table 12 summarizes the regression outcomes of the percentage of individuals diagnosed with the given outcome. The difference between Table 11 and 12 is that Table 11 shows the extent of the problem at the unit level, whereas Table 12 examines the intensity of the problem. On average, the percentage of individuals within the same rank group of a unit, being diagnosed with any mental disorders, increases by 0.42 pps, for every 10 pps increase in the proportion of females, holding other variables constant. For race, a 10 pps increase of the proportion of Asians would decrease the proportion of individuals in that unit being diagnosed with any mental disorders by 0.18. Similar to Table 11, MOS does not seem to explain differences in the intensity of mental health problems across units for officer sample.

Having officers experiencing stressful events like deployment is associated with higher percentage of individuals being diagnosed with any mental disorders, within the peer group, contrary to having officers experiencing stressful events like divorce and demotion. For example, the proportion increases by 0.07 and 0.33 pps for every 10 pps increase in the proportion of officers who were currently deployed and returned from deployment respectively. On the other hand, the proportion increases by 0.10 pps when there is at least one officer who was divorced.

For geographical locations of the units, the percentage of individuals being diagnosed with any mental disorders, as compared to those with missing unit locations, decreases by 1.8 pps when the unit is located in East North Central region.

On the other hand, bigger unit sizes is associated with lower percentage of individuals being diagnosed with any mental disorders, from between 0.6 to 1.0 pps, as compared to small unit sizes of fewer than four officers.

As for suicide attempt, there are very few significant predictors for unit level variations in the intensity of mental health outcomes, most probably

attributed to the very small sample (0.04%) diagnosed with suicide attempt among the officers.

Similar to any mental disorders, having more female soldiers, other race soldiers, those that are currently deployed or post deployed, and at least one soldier who is post divorced, are associated with higher percentage of individuals being diagnosed with any PTSD. On the other hand, being in larger units are associated with a lower percentage. Variables such as race, MOS do not seemed to have significant co-relations to the percentage of individuals being diagnosed with any PTSD.

As for mood disorders, having more female soldiers, those that are post deployed, and at least one soldier who is post divorced, are associated with a higher percentage of individuals being diagnosed with mood disorders; depression being more prominent of the two. On the other hand, having more black soldiers are associated with a lower percentage.

Similar to Table 11, having officers experiencing stressful events (such as returning from deployment and divorced) are associated with higher unit-level rates of substance misuse.

Table 12. Outcomes for Officers at the Company Level—Model 2

Model 2: % Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.042**	0.001+	0.007**	0.013**	0.007**	-0.001
	(0.004)	(0.000)	(0.002)	(0.002)	(0.002)	(0.001)
Race—Reference: % White						
% Black	-0.004	0	0	-0.004**	-0.003*	-0.002*
	(0.004)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
% Hispanic	0.006	0	0.003	-0.006+	-0.001	-0.002
	(0.008)	(0.001)	(0.003)	(0.003)	(0.003)	(0.001)
% Asian	-0.018**	0	-0.005+	-0.005+	0	-0.001
	(0.006)	(0.001)	(0.003)	(0.003)	(0.003)	(0.002)
% Other Race	0.022**	0	0.011**	0	-0.002	-0.001
	(0.006)	(0.000)	(0.003)	(0.002)	(0.002)	(0.001)
MOS—Reference: % Combat MOS						

Model 2: % Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
% Aviation	0.006 (0.007)	-0.001 (0.000)	-0.005 (0.004)	0.001 (0.002)	0.002 (0.002)	0.001 (0.001)
% Medical	0.013* (0.006)	0 (0.001)	0.002 (0.003)	0.004 (0.003)	0.005** (0.002)	0.003* (0.001)
% Combat Service	-0.006 (0.005)	0 (0.001)	-0.004 (0.003)	0 (0.002)	-0.001 (0.002)	-0.001 (0.001)
% Service Support	0.004 (0.005)	-0.001 (0.001)	-0.001 (0.002)	0.001 (0.002)	0.005** (0.002)	0.002+ (0.001)
% Other MOS	0.005 (0.004)	0 (0.001)	-0.001 (0.002)	-0.004* (0.002)	0.001 (0.001)	0.001 (0.001)
Stressful Event Indicator						
% Currently Deployed	0.007** (0.002)	0 (0.000)	0.006** (0.001)	0 (0.001)	0.001 (0.001)	0 (0.000)
% Post Deployed	0.033** (0.003)	0 (0.000)	0.018** (0.001)	0.003** (0.001)	0.003** (0.001)	0.001** (0.000)
Currently Divorced	0.002* (0.001)	0 (0.000)	0 (0.000)	0 (0.000)	0 (0.000)	0 (0.000)
Post Divorced	0.010** (0.001)	0 (0.000)	0.002** (0.001)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)
Currently Demoted	-0.001 (0.002)	0 (0.000)	-0.002* (0.001)	-0.001* (0.001)	-0.001 (0.001)	0 (0.000)
Post Demoted	-0.003 (0.003)	0 (0.000)	0 (0.001)	-0.002+ (0.001)	-0.001 (0.001)	0 (0.000)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.009 (0.010)	-0.001** (0.000)	-0.002 (0.004)	-0.002 (0.003)	0 (0.003)	-0.003** (0.001)
DIV 2—Middle Atlantic	0 (0.005)	0 (0.000)	0.001 (0.003)	0 (0.002)	0.001 (0.002)	-0.002** (0.001)
DIV 3—East North Central	-0.018** (0.005)	-0.000** (0.000)	0 (0.003)	-0.001 (0.002)	-0.003+ (0.002)	-0.001 (0.001)
DIV 4—West North Central	-0.010* (0.005)	-0.000** (0.000)	-0.003 (0.002)	-0.003+ (0.002)	0 (0.002)	-0.001** (0.001)
DIV 5—South Atlantic	-0.001 (0.003)	-0.000** (0.000)	-0.003* (0.001)	-0.001 (0.001)	-0.001 (0.001)	0 (0.001)
DIV 6—East South Central	-0.009* (0.004)	-0.000** (0.000)	-0.005** (0.001)	0.001 (0.002)	0.002 (0.002)	-0.002** (0.000)

Model 2: % Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
DIV 7—West South Central	0.008*	0.001	0.004*	0.003*	0.002+	0
	(0.003)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
DIV 8—Mountain	-0.005	0	-0.001	-0.001	-0.001	0
	(0.005)	(0.000)	(0.002)	(0.002)	(0.001)	(0.001)
DIV 9—Pacific	-0.002	0	-0.002	0	-0.003*	-0.001*
	(0.004)	(0.000)	(0.002)	(0.002)	(0.001)	(0.001)
Military Location	-0.002	0	-0.002	-0.001	0	0
	(0.004)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
Other Location	-0.024*	-0.001+	-0.007	-0.001	-0.001	-0.001
	(0.010)	(0.000)	(0.006)	(0.003)	(0.004)	(0.001)
Unit Size Category—Reference: Category 1 (<4 Officers)						
Size CAT 2 (4 to 8)	-0.006**	0	-0.002**	0	0	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Size CAT 3 (>8)	-0.010**	0	-0.004**	-0.002*	-0.001*	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Year—Reference: Year 2002						
2003	0.001	0	-0.002**	0	0	0
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
2004	0.002	0	-0.003**	0	0	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
2005	0.008**	0	-0.002**	0.001	0.001	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2006	0.015**	0.000*	-0.002*	0.002**	0.001*	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2007	0.023**	0.000**	0.002*	0.003**	0.002**	0.001
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2008	0.032**	0.000**	0.006**	0.003**	0.003**	0.001+
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2009	0.043**	0.001**	0.009**	0.005**	0.005**	0.001**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2010	0.057**	0.001**	0.012**	0.005**	0.006**	0.002**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2011	0.067**	0.001**	0.013**	0.006**	0.008**	0.003**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Month—Reference: January						
Feb	0.001**	0	0	0	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mar	0.002**	0	0.000*	0	0.000+	0.000+
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Apr	0.001**	0	0	0	0.000*	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
May	0.002**	0	0.000**	0.000+	0.000**	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Model 2: % Officer (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Jun	0.003** (0.000)	0 (0.000)	0.001** (0.000)	0.000* (0.000)	0.001** (0.000)	0 (0.000)
Jul	0.003** (0.000)	0 (0.000)	0.001** (0.000)	0.000* (0.000)	0.001** (0.000)	0 (0.000)
Aug	0.004** (0.000)	0 (0.000)	0.001** (0.000)	0.000** (0.000)	0.001** (0.000)	0.000* (0.000)
Sep	0.005** (0.000)	0 (0.000)	0.001** (0.000)	0.000** (0.000)	0.001** (0.000)	0.000** (0.000)
Oct	0.005** (0.000)	0.000* (0.000)	0.001** (0.000)	0.000** (0.000)	0.001** (0.000)	0.000** (0.000)
Nov	0.007** (0.000)	0.000+ (0.000)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)	0.000** (0.000)
Dec	0.008** (0.000)	0.000** (0.000)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)	0.000** (0.000)
Constant	0.017** (0.004)	0 (0.000)	0.005** (0.002)	0.005** (0.001)	0 (0.001)	0.001 (0.001)
N	693413	693413	693413	693413	693413	693413

B. UNIT LEVEL ANALYSIS FOR SENIOR ENLISTED

1. Binary: The Unit Has at Least One Individual Diagnosed with the Given Outcome

Table 13 summarizes the regression outcomes of the likelihood of at least one individual diagnosed with the given outcome in a senior enlisted peer group. On average, the likelihood of at least one individual within the same rank group of a unit, being diagnosed with any mental disorders, increases 1.31 pps for every 10 pps increase in the proportion of females, holding other variables constant. Although this does imply that females within the same rank group of the unit are more likely to be diagnosed with any mental disorders as compared to males. It could also be due to the bias that females in general are more likely to report and seek for care vis-à-vis males. For race, a 10 pps increase of the proportion of Blacks or Asians would decrease the likelihood of at least one individual being diagnosed with any mental disorders by 0.33 and 0.88 pps respectively. This might again be caused by the differences in care seeking

pattern that Asians being more conservative and Blacks being more wary of racial bias to seek for care.

For MOS, units with higher percentage of Service Support MOS have a lower likelihood of at least one individual being diagnosed with any mental disorders. A 10 pps increase of the proportion of Service Support MOS is associated with 0.57 pps reduction in presence of any mental health disorders, as compared to units with higher presence of the Combat MOS. On the other hand, presence of mental health disorders increases proportionally with higher percent of soldiers with higher AFQT scores. For example, a 10 pps increase in individuals in categories 2, 3 and 4 of AFQT scores are associated with an increased likelihood of presence of mental health disorders in this unit from between 0.43 to 0.67 pps, holding all else constant.

Units with higher percent of senior enlisted experiencing stressful events like deployment, divorce and demotion, have higher likelihood of at least one individual being diagnosed with any mental disorders, within the peer group. The likelihood increases by 0.52 pps for every 10 pps increase in the proportion of senior enlisted who were post deployed. On the other hand, the likelihood increases by 1.40 and 10.40 pps when at least one senior enlisted is currently going through divorced and post divorced respectively in that unit. Those units with at least one senior enlisted experiencing current episodes of demotion also increase the likelihood by 1.80 pps.

For geographical locations of the units, the likelihood of at least one individual being diagnosed with any mental disorders in a unit, as compared to those with missing unit locations, decreases by 8.0, 8.5 and 11.0 pps when the unit is located in New England region, East North Central region, and other locations outside the U.S. respectively. On the contrary, those located in South Atlantic region, West South Central region and military locations increases the likelihood by 2.5, 6.7 and 6.2 pps respectively.

Not surprisingly, bigger unit sizes are associated with higher likelihood of at least one individual being diagnosed with any mental disorders within the peer group, from between 19.2 to 29.8 pps, as compared to small unit sizes of fewer than 14 senior enlisted.

As for suicide attempt, there are few significant predictors of unit-level variations in this outcome, most probably attributed to the very small sample (0.17%) diagnosed with suicide attempt among the senior enlisted.

Similar to overall mental disorders, having more female soldiers, soldiers who are post deployed, at least one soldier who is currently or post divorced, and those in larger units, will have higher likelihood of being diagnosed with PTSD. On the other hand, units with more Black or Hispanic soldiers, non-Combat MOS soldiers, and high AFQT soldiers, will have lower likelihood.

As for mood disorders, having more female soldiers, Medical MOS soldiers, soldiers who are post deployed, at least one soldier who is currently experiencing divorce or post divorced, currently demoted, and those in larger units, have higher likelihood of being diagnosed with mood disorders. On the other hand, having more Black or Asian soldiers, Aviation MOS soldiers, high AFQT soldiers, and soldiers who are currently deployed, have a lower likelihood.

Unlike any mental disorders, having more female soldiers have lower likelihood of being diagnosed with substance misuse. Similarly, having more Black soldiers, soldiers with Medical and Service Support MOS, AFQT scores of CAT 5, and those who are currently being deployed, will also have lower likelihood. On the other hand, having at least one soldier who is currently or post divorced, currently or post demoted, and those in larger units, will have higher likelihood.

Table 13. Outcomes for Senior Enlisted at the Company Level—Model 1

Model 1: Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.131**	0.008*	0.026*	0.109**	0.049**	-0.019**
	(0.014)	(0.003)	(0.011)	(0.010)	(0.009)	(0.007)
Race—Reference: % White						
% Black	-0.033**	-0.006+	-0.054**	-0.044**	-0.061**	-0.035**
	(0.012)	(0.003)	(0.010)	(0.009)	(0.008)	(0.006)
% Hispanic	-0.034	0.017**	0.057**	0.030+	0.029+	0.016
	(0.021)	(0.006)	(0.018)	(0.016)	(0.015)	(0.012)
% Asian	-0.088**	0.012	-0.024	-0.056**	-0.032+	-0.014
	(0.026)	(0.008)	(0.022)	(0.019)	(0.017)	(0.015)
% Other Race	0.038*	-0.012*	-0.036*	0.021	-0.047**	-0.028**
	(0.018)	(0.005)	(0.015)	(0.013)	(0.011)	(0.010)
MOS—Reference: % Combat MOS						
% Aviation	-0.024	-0.011	-0.194**	-0.074**	-0.093**	-0.031
	(0.032)	(0.010)	(0.026)	(0.026)	(0.021)	(0.023)
% Medical	-0.032+	-0.010+	-0.068**	-0.01	-0.006	-0.036**
	(0.017)	(0.006)	(0.016)	(0.015)	(0.013)	(0.012)
% Combat Service	-0.042*	-0.008	-0.072**	-0.021	-0.018	-0.024*
	(0.017)	(0.006)	(0.015)	(0.014)	(0.012)	(0.011)
% Service Support	-0.057**	-0.008+	-0.073**	-0.014	-0.013	-0.030**
	(0.014)	(0.005)	(0.013)	(0.012)	(0.010)	(0.010)
% Other MOS	-0.032*	-0.011*	-0.066**	-0.008	-0.008	-0.035**
	(0.013)	(0.005)	(0.013)	(0.011)	(0.010)	(0.011)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.067**	0	0.036**	0.01	0.014	0.023**
	(0.014)	(0.004)	(0.012)	(0.010)	(0.009)	(0.008)
% AFQT CAT 3 (51 to 65)	0.043**	0.007+	0.005	-0.003	-0.006	0.008
	(0.014)	(0.004)	(0.012)	(0.010)	(0.009)	(0.007)
% AFQT CAT 4 (66 to 93)	0.044**	0.001	-0.018+	-0.011	-0.019*	-0.003
	(0.014)	(0.003)	(0.011)	(0.010)	(0.009)	(0.007)
% AFQT CAT 5 (>93)	-0.029	0	-0.080**	-0.039*	-0.046**	-0.040**
	(0.025)	(0.007)	(0.019)	(0.018)	(0.015)	(0.013)
Stressful Event Indicator						
% Currently Deployed	0.007	-0.014**	0.034**	-0.051**	-0.042**	-0.044**
	(0.007)	(0.003)	(0.006)	(0.006)	(0.005)	(0.005)
% Post Deployed	0.052**	0	0.146**	0.013+	0.035**	0.006

Model 1: Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.008)	(0.003)	(0.008)	(0.007)	(0.006)	(0.006)
Currently Divorced	0.014**	0.008**	0.020**	0.024**	0.020**	0.021**
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Post Divorced	0.104**	0.004**	0.061**	0.038**	0.032**	0.020**
	(0.004)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
Currently Demoted	0.018**	0.013**	0.023**	0.015*	0.015*	0.036**
	(0.004)	(0.004)	(0.006)	(0.007)	(0.006)	(0.006)
Post Demoted	0.014*	0.007+	0.011	0.013	0.012+	0.028**
	(0.006)	(0.004)	(0.007)	(0.009)	(0.007)	(0.006)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.080**	-0.005	-0.076**	-0.061**	-0.062**	-0.054**
	(0.026)	(0.010)	(0.022)	(0.018)	(0.018)	(0.013)
DIV 2—Middle Atlantic	-0.003	-0.016**	-0.031*	-0.018	-0.038**	-0.046**
	(0.013)	(0.004)	(0.013)	(0.012)	(0.010)	(0.008)
DIV 3—East North Central	-0.085**	-0.016**	-0.075**	-0.046**	-0.057**	-0.069**
	(0.015)	(0.004)	(0.012)	(0.011)	(0.009)	(0.007)
DIV 4—West North Central	-0.035*	-0.004	-0.040**	-0.016	0.01	-0.031**
	(0.014)	(0.005)	(0.012)	(0.011)	(0.011)	(0.009)
DIV 5—South Atlantic	0.025**	-0.005+	-0.035**	-0.019**	-0.031**	0.015**
	(0.007)	(0.003)	(0.007)	(0.007)	(0.006)	(0.006)
DIV 6—East South Central	-0.02	-0.016**	-0.052**	-0.025*	-0.029**	-0.015+
	(0.012)	(0.003)	(0.011)	(0.010)	(0.009)	(0.008)
DIV 7—West South Central	0.067**	0.011**	0.068**	0.044**	0.046**	0.013+
	(0.009)	(0.004)	(0.009)	(0.009)	(0.008)	(0.007)
DIV 8—Mountain	0.003	0.007	-0.019	-0.013	-0.006	0.009
	(0.013)	(0.005)	(0.013)	(0.011)	(0.010)	(0.010)
DIV 9—Pacific	0.014	-0.005	-0.040**	-0.027**	-0.047**	-0.030**
	(0.012)	(0.005)	(0.011)	(0.010)	(0.009)	(0.008)
Military Location	0.062**	0.007	0.002	0.028**	0.01	0.008
	(0.011)	(0.005)	(0.011)	(0.011)	(0.010)	(0.009)
Other Location	-0.110**	-0.024*	-0.199**	-0.031	-0.098**	-0.078**
	(0.033)	(0.011)	(0.025)	(0.026)	(0.020)	(0.019)
Unit Size Category—Reference: Category 1 (<14 Senior Enlisted)						
Size CAT 2 (14 to 18)	0.192**	0.014**	0.132**	0.110**	0.076**	0.058**
	(0.005)	(0.002)	(0.005)	(0.005)	(0.004)	(0.004)
Size CAT 3 (>18)	0.298**	0.033**	0.255**	0.238**	0.177**	0.141**
	(0.005)	(0.002)	(0.005)	(0.005)	(0.005)	(0.004)

Model 1: Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Year—Reference: Year 2002						
2003	0.024** (0.005)	0.005** (0.001)	0.012** (0.004)	0.019** (0.004)	0.023** (0.003)	0.019** (0.003)
2004	0.039** (0.007)	0.006** (0.002)	0.029** (0.006)	0.032** (0.006)	0.032** (0.005)	0.022** (0.004)
2005	0.081** (0.008)	0.012** (0.002)	0.070** (0.007)	0.060** (0.007)	0.056** (0.005)	0.032** (0.005)
2006	0.112** (0.008)	0.019** (0.003)	0.119** (0.007)	0.079** (0.007)	0.087** (0.006)	0.055** (0.006)
2007	0.145** (0.009)	0.028** (0.003)	0.202** (0.008)	0.110** (0.008)	0.121** (0.006)	0.082** (0.006)
2008	0.179** (0.009)	0.035** (0.003)	0.277** (0.008)	0.134** (0.008)	0.155** (0.007)	0.106** (0.007)
2009	0.205** (0.009)	0.044** (0.004)	0.327** (0.008)	0.157** (0.009)	0.201** (0.007)	0.139** (0.007)
2010	0.225** (0.010)	0.051** (0.004)	0.347** (0.009)	0.179** (0.009)	0.241** (0.008)	0.173** (0.007)
2011	0.247** (0.010)	0.058** (0.004)	0.364** (0.009)	0.196** (0.009)	0.272** (0.008)	0.196** (0.008)
Month—Reference: January						
Feb	0.002** (0.001)	0.001** (0.000)	0.003** (0.001)	0.003** (0.001)	0.002** (0.001)	0.001* (0.001)
Mar	0.005** (0.001)	0.001** (0.000)	0.006** (0.001)	0.005** (0.001)	0.005** (0.001)	0.003** (0.001)
Apr	0.007** (0.001)	0.002** (0.000)	0.008** (0.001)	0.006** (0.001)	0.006** (0.001)	0.004** (0.001)
May	0.009** (0.001)	0.003** (0.001)	0.012** (0.001)	0.008** (0.001)	0.009** (0.001)	0.006** (0.001)
Jun	0.012** (0.001)	0.003** (0.001)	0.016** (0.001)	0.010** (0.001)	0.012** (0.001)	0.008** (0.001)
Jul	0.014** (0.001)	0.004** (0.001)	0.019** (0.001)	0.011** (0.001)	0.015** (0.001)	0.010** (0.001)
Aug	0.016** (0.001)	0.005** (0.001)	0.024** (0.001)	0.013** (0.001)	0.016** (0.001)	0.011** (0.001)
Sep	0.019** (0.001)	0.004** (0.001)	0.027** (0.001)	0.014** (0.001)	0.018** (0.001)	0.012** (0.001)
Oct	0.022** (0.001)	0.005** (0.001)	0.033** (0.001)	0.018** (0.001)	0.023** (0.001)	0.016** (0.001)
Nov	0.023** (0.001)	0.006** (0.001)	0.037** (0.001)	0.019** (0.001)	0.026** (0.001)	0.018** (0.001)
Dec	0.026** (0.001)	0.006** (0.001)	0.042** (0.001)	0.022** (0.001)	0.029** (0.001)	0.021** (0.001)
Constant	0.247** (0.015)	-0.006 (0.005)	-0.014 (0.013)	0.011 (0.012)	-0.031** (0.010)	0.005 (0.010)

Model 1: Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
N	796858	796858	796858	796858	796858	796858

2. Percentage of Individuals Diagnosed

Table 14 summarizes the regression outcomes of the percentage of individuals diagnosed with the given outcome. The differences between Table 13 and 14 is that Table shows the extent of the problem at the unit level, whereas Table 14 examines the intensity of the problem. On average, the percentage of individuals within the same rank group of a unit, being diagnosed with any mental disorders, increases by 0.68 pps, for every 10 pps increase in the proportion of females, holding other variables constant. For race, a 10 pps increase of the proportion of Blacks and Asians would decrease the proportion of individuals in that unit being diagnosed with any mental disorders by 0.42 and 0.60 pps respectively.

For MOS, a 10 pps increase of the proportion of Aviation and Combat Service MOS, are associated with a lower percentage of individuals being diagnosed with any mental disorders, by between 0.20 to 0.48 pps. On the other hand, presence of mental health disorders decreases proportionally with higher percent of soldiers with higher AFQT scores. For example, a 10 pps increase in individuals in the highest categories of AFQT scores are associated with a lower percentage of individuals being diagnosed with any mental disorders by 0.49 pps, holding all else constant.

Having senior enlisted experiencing stressful events like deployment, divorce and demotion, is associated with higher percentage of individuals being diagnosed with any mental disorders, within the peer group. For example, the proportion increases by 0.3 pps, for every 10 pps increase in the proportion of senior enlisted who returned from deployment. On the other hand, the proportion increases by 0.2 and 0.9 pps when there is at least one senior enlisted who was

currently experiencing divorce and divorced respectively. Those units with at least one senior enlisted experiencing current episodes of demotion or post demotion also increase the proportion of individuals being diagnosed with any mental disorders by 0.6 and 0.5 pps respectively.

For geographical locations of the units, the percentage of individuals being diagnosed with any mental disorders, as compared to those with missing unit locations, decreases by between 1.3 to 7.9 pps when the unit is located in New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, Mountain, Pacific regions and other locations outside the U.S.. On the contrary, those located in West South Central region increases the proportion by 2.3 pps.

On the other hand, bigger unit sizes is associated with lower percentage of individuals being diagnosed with any mental disorders, from between 1.5 to 2.2 pps, as compared to small unit sizes of fewer than 14 senior enlisted.

As for suicide attempt, there are very few significant predictors for unit level variations in the intensity of mental health outcomes, most probably attributed to the very small sample (0.17%) diagnosed with suicide attempt among the senior enlisted.

Similar to any mental disorders, having more Black and Asian soldiers, soldiers with non-Combat MOS and AFQT score of 93 and above, are associated with a lower percentage of soldiers being diagnosed with PTSD. On the other hand, units with more soldiers who are post deployed, at least one soldier who is post divorced, currently or post demoted, are associated with a higher percentage.

As for mood disorders, having more female soldiers, soldiers who are post deployed, and at least one soldier who is post divorced, currently or post demoted, are associated with a higher percentage of soldiers being diagnosed with mood disorders; anxiety being more prominent of the two.

For substance misuse, having more female soldiers are associated with a lower percentage of soldiers being diagnosed with substance misuse. Similar to any mental, having more Black soldiers, AFQT score of 93 or more, and those who are currently being deployed are associated with a lower percentage. On the other hand, having at least one soldier who is currently or post demoted, are associated with a higher percentage of soldiers being diagnosed with substance misuse. Variables such as MOS do not seemed to explain differences in the intensity of substance misuse across units for senior enlisted sample.

In general, an increase in unit size are associated with a lower percentage of soldiers being diagnosed with mental health disorders.

Table 14. Outcomes for Senior Enlisted at the Company Level—Model 2

Model 2: % Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.068**	0.001	0.004	0.021**	0.008**	-0.005**
	(0.006)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)
Race—Reference: % White						
% Black	-0.042**	0	-0.017**	-0.008**	-0.009**	-0.004**
	(0.005)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
% Hispanic	-0.019*	0.001	0.005	0.003	0.002	-0.003
	(0.009)	(0.001)	(0.005)	(0.004)	(0.003)	(0.002)
% Asian	-0.060**	-0.001	-0.017**	-0.010*	-0.007+	-0.005
	(0.010)	(0.001)	(0.006)	(0.005)	(0.004)	(0.003)
% Other Race	-0.011	-0.001	-0.011*	0.003	-0.006*	0.001
	(0.008)	(0.001)	(0.005)	(0.004)	(0.002)	(0.003)
MOS—Reference: % Combat MOS						
% Aviation	-0.048**	0	-0.042**	-0.010*	-0.010**	-0.002
	(0.012)	(0.001)	(0.006)	(0.004)	(0.003)	(0.004)
% Medical	-0.007	-0.001	-0.016**	0	-0.002	-0.005*
	(0.007)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
% Combat Service	-0.025**	-0.001	-0.020**	-0.008*	-0.003	-0.004*
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
% Service Support	-0.020**	0	-0.018**	0	-0.001	-0.003
	(0.006)	(0.001)	(0.004)	(0.003)	(0.002)	(0.002)
% Other MOS	-0.012*	0	-0.013**	0.002	0.001	-0.003+

Model 2: % Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.014*	0	0.006+	0.002	0.003	0.003+
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
% AFQT CAT 3 (51 to 65)	0	0	-0.003	-0.004	0	0.002
	(0.006)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)
% AFQT CAT 4 (66 to 93)	-0.010+	0.001*	-0.008**	-0.004	-0.003	0.001
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
% AFQT CAT 5 (>93)	-0.049**	-0.001	-0.026**	-0.006	-0.012**	-0.007**
	(0.010)	(0.001)	(0.005)	(0.004)	(0.003)	(0.002)
Stressful Event Indicator						
% Currently Deployed	-0.022**	-0.001*	0.004**	-0.006**	-0.004**	-0.003**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
% Post Deployed	0.030**	0	0.032**	0.001	0.004**	0.001
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
Currently Divorced	0.002**	0.000**	0	0	0	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Divorced	0.009**	0.000+	0.002*	0.001	0.001*	0.001
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Currently Demoted	0.006**	0	0.003**	0.001	0.001*	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Post Demoted	0.005**	0	0.003**	0.001	0.001*	0.002**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.042**	0.004	-0.003	0.002	0.001	0.002
	(0.012)	(0.004)	(0.009)	(0.006)	(0.006)	(0.005)
DIV 2—Middle Atlantic	-0.024**	-0.001	-0.013**	-0.004*	-0.003+	-0.005**
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
DIV 3—East North Central	-0.053**	0	-0.017**	-0.005+	-0.007**	-0.006**
	(0.006)	(0.001)	(0.003)	(0.003)	(0.001)	(0.001)
DIV 4—West North Central	-0.026**	0	-0.010**	-0.001	0.004	-0.003*
	(0.006)	(0.001)	(0.003)	(0.003)	(0.003)	(0.001)
DIV 5—South Atlantic	-0.013**	0	-0.011**	-0.002	-0.003**	0
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
DIV 6—East	-0.023**	-0.001**	-0.014**	-0.004*	-0.005**	-0.001

Model 2: % Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
South Central						
	(0.005)	(0.000)	(0.003)	(0.002)	(0.001)	(0.002)
DIV 7—West South Central	0.023**	0.001	0.015**	0.007**	0.005**	0
	(0.004)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
DIV 8—Mountain	-0.009	0	-0.002	-0.004*	-0.002	0
	(0.006)	(0.000)	(0.004)	(0.002)	(0.002)	(0.001)
DIV 9—Pacific	-0.017**	0	-0.008**	-0.004*	-0.006**	-0.002
	(0.005)	(0.000)	(0.003)	(0.002)	(0.001)	(0.001)
Military Location	0.006	0	-0.003	0.001	0	0
	(0.005)	(0.000)	(0.003)	(0.002)	(0.002)	(0.001)
Other Location	-0.079**	-0.001	-0.038**	-0.008+	-0.010*	-0.005
	(0.012)	(0.001)	(0.005)	(0.004)	(0.004)	(0.003)
Unit Size Category—Reference: Category 1 (<14 Senior Enlisted)						
Size CAT 2 (14 to 18)	-0.015**	0	-0.005**	-0.003**	-0.002**	-0.001*
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Size CAT 3 (>18)	-0.022**	-0.000*	-0.008**	-0.005**	-0.003**	-0.001**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Year—Reference: Year 2002						
2003	0.017**	0	0.001	0.004**	0.002**	0.001**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
2004	0.024**	0	0	0.004**	0.002**	0.001+
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2005	0.040**	0	0.003*	0.007**	0.004**	0.001*
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2006	0.060**	0.001**	0.008**	0.009**	0.006**	0.003**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2007	0.083**	0.001**	0.020**	0.013**	0.009**	0.004**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2008	0.109**	0.002**	0.032**	0.015**	0.011**	0.006**
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
2009	0.135**	0.002**	0.042**	0.017**	0.015**	0.008**
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
2010	0.161**	0.002**	0.049**	0.020**	0.020**	0.012**
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
2011	0.184**	0.003**	0.052**	0.023**	0.024**	0.013**
	(0.004)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
Month—Reference: January						
Feb	0.002**	0.000**	0.001**	0.000*	0.000**	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mar	0.004**	0.000**	0.001**	0.001**	0.001**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Apr	0.005**	0.000**	0.001**	0.001**	0.001**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Model 2: % Senior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
May	0.007** (0.000)	0.000** (0.000)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Jun	0.009** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Jul	0.010** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Aug	0.012** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Sep	0.014** (0.000)	0.000** (0.000)	0.004** (0.000)	0.002** (0.000)	0.002** (0.000)	0.001** (0.000)
Oct	0.016** (0.000)	0.000** (0.000)	0.005** (0.000)	0.002** (0.000)	0.002** (0.000)	0.001** (0.000)
Nov	0.018** (0.000)	0.000** (0.000)	0.005** (0.000)	0.002** (0.000)	0.002** (0.000)	0.001** (0.000)
Dec	0.020** (0.000)	0.000** (0.000)	0.006** (0.000)	0.003** (0.000)	0.003** (0.000)	0.002** (0.000)
Constant	0.067** (0.006)	0 (0.001)	0.030** (0.003)	0.011** (0.003)	0.007** (0.002)	0.007** (0.002)
N	796858	796858	796858	796858	796858	796858

C. UNIT LEVEL ANALYSIS FOR JUNIOR ENLISTED

1. Binary: The Unit Has at Least One Individual Diagnosed with the Given Outcome

Table 15 summarizes the regression outcomes of the likelihood of at least one individual diagnosed with the given outcome in a unit among junior enlisted soldiers. On average, the likelihood of at least one individual within the unit being diagnosed with any mental disorders increases 1.45 pps for every 10 pps increase in the proportion of females, holding other variables constant. As discussed in all other peer groups' results, this can due to differences in care seeking pattern by gender in that females in general are more likely to report and seek for care vis-à-vis males. For race, a 10 pps increase in the proportion of non-Whites would decrease the likelihood of at least one individual being diagnosed with any mental disorders by between 0.73 to 1.48 pps. This might

again be caused by the differences in care seeking pattern that Asians being more conservative and Blacks being more wary of racial bias to seek for care.

For MOS, units with higher percentage of Aviation and Combat Service MOS have a lower likelihood of at least one individual being diagnosed with any mental disorders. A 10 pps increase of the proportion of Aviation and Combat Service MOS is associated with respectively 0.70 and 0.29 pps reduction in presence of any mental health disorders, as compared to units with higher presence of the Combat MOS. Presence of mental health disorders also decreases proportionally with higher percent of soldiers with higher AFQT scores. For example, a 10 pps increase in individuals in the highest category of AFQT scores is associated with a decrease likelihood of presence of mental health disorders in this unit by 0.95 pps, holding all else constant.

Having soldiers experiencing stressful events like deployment, divorce and demotion are strongly associated with a higher probability of at least one individual being diagnosed with any mental disorders within the peer group. For example, comparing two identical units but one unit has 10 pps more soldiers returning from deployment, that unit has a 1.35 pps higher likelihood of having at least one person diagnosed with any mental health disorders. On the other hand, having at least one junior enlisted currently going through divorce or was divorced is associated with a higher probability of unit level presence of any mental health disorders by 0.7 pps and 7.4 pps, respectively. Units where some soldiers experiencing current and post episodes of demotion also have higher likelihood of mental health disorder presence by 2.9 and 4.2 pps respectively.

For geographical locations of the units, the likelihood of at least one individual being diagnosed with any mental disorders in a unit, as compared to those with missing unit locations, decreases by between 3.2 to 11.3 pps when the unit is located in New England, East North Central, West North Central regions and other locations outside the U.S.. On the contrary, those located in South Atlantic, West South Central, Pacific regions and military locations increases the likelihood by between 2.5 to 10.0 pps.

Not surprisingly, bigger unit sizes are associated with higher likelihood of at least one individual being diagnosed with any mental disorders within the peer group, from between 26.7 to 35.6 pps, as compared to small unit sizes of fewer than 13 junior enlisted.

As for suicide attempt, having more female soldiers, at least one soldier who is currently experiencing divorce or post divorced, currently demoted or post demoted, and those in larger units, have higher likelihood of being diagnosed with suicide attempt. On the other hand, having more Black or other race soldiers, Service Support or other MOS soldiers, higher AFQT soldiers, and those that are currently deployed, have a lower likelihood.

Similar to any mental disorders, having more female soldiers, those that are currently deployed or post deployed, at least one soldier who is currently experiencing divorce or post divorced, currently demoted or post demoted, and those in larger units, have higher likelihood of being diagnosed with PTSD. On the other hand, having more non-White soldiers, non-Combat MOS soldiers, and higher AFQT soldiers, have a lower likelihood.

As for mood disorders, having more female soldiers, those that are post deployed, at least one soldier who is currently experiencing divorce or post divorced, currently demoted or post demoted, and those in larger units, have higher likelihood of being diagnosed with mood disorders. On the other hand, having more Black or Hispanic soldiers, non-Combat MOS soldiers, higher AFQT soldiers, and those that are currently deployed, have a lower likelihood.

For substance misuse, having more soldiers that are post deployed, at least one soldier who is currently experiencing divorce or post divorced, currently demoted or post demoted, and those in larger units, have higher likelihood of being diagnosed with substance misuse. On the other hand, having more female soldiers, Black or Hispanic soldiers, non-Combat MOS soldiers, higher AFQT soldiers, and those that are currently deployed, have a lower likelihood.

Table 15. Outcomes for Junior Enlisted at the Platoon Level—Model 1

Model 1: Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.145**	0.014**	0.039**	0.069**	0.045**	-0.020**
	(0.008)	(0.003)	(0.005)	(0.005)	(0.005)	(0.004)
Race—Reference: % White						
% Black	-0.073**	-0.017**	-0.059**	-0.031**	-0.051**	-0.029**
	(0.008)	(0.003)	(0.006)	(0.006)	(0.005)	(0.005)
% Hispanic	-0.079**	-0.005	-0.047**	-0.029**	-0.032**	-0.022**
	(0.012)	(0.004)	(0.009)	(0.008)	(0.007)	(0.006)
% Asian	-0.148**	0.005	-0.043**	-0.007	-0.01	0.020*
	(0.014)	(0.005)	(0.010)	(0.009)	(0.008)	(0.008)
% Other Race	-0.038*	-0.020**	-0.050**	-0.014	-0.024**	-0.001
	(0.015)	(0.005)	(0.010)	(0.009)	(0.009)	(0.008)
MOS—Reference: % Combat MOS						
% Aviation	-0.070**	-0.017+	-0.097**	-0.017	-0.037**	-0.042**
	(0.019)	(0.009)	(0.016)	(0.015)	(0.013)	(0.013)
% Medical	0.004	-0.007	-0.059**	-0.017*	-0.020*	-0.024**
	(0.011)	(0.006)	(0.009)	(0.008)	(0.008)	(0.008)
% Combat Service	-0.029**	-0.008	-0.057**	-0.020*	-0.018*	-0.024**
	(0.011)	(0.005)	(0.008)	(0.008)	(0.007)	(0.007)
% Service Support	-0.004	-0.012**	-0.059**	-0.006	-0.018**	-0.028**
	(0.009)	(0.004)	(0.007)	(0.007)	(0.006)	(0.006)
% Other MOS	0.027**	-0.025**	-0.056**	-0.019**	-0.032**	-0.036**
	(0.009)	(0.005)	(0.007)	(0.007)	(0.006)	(0.006)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	-0.018	-0.013**	-0.028**	-0.027**	-0.023**	-0.034**
	(0.016)	(0.005)	(0.010)	(0.010)	(0.008)	(0.008)
% AFQT CAT 3 (51 to 65)	-0.005	-0.020**	-0.049**	-0.028**	-0.034**	-0.052**
	(0.016)	(0.005)	(0.011)	(0.010)	(0.008)	(0.008)
% AFQT CAT 4 (66 to 93)	-0.038*	-0.017**	-0.064**	-0.028**	-0.037**	-0.046**
	(0.016)	(0.005)	(0.011)	(0.010)	(0.008)	(0.008)
% AFQT CAT 5 (>93)	-0.095**	-0.022**	-0.084**	-0.059**	-0.050**	-0.071**
	(0.021)	(0.007)	(0.014)	(0.013)	(0.011)	(0.011)
Stressful Event Indicator						
% Currently Deployed	0.042**	-0.042**	0.038**	-0.048**	-0.052**	-0.051**
	(0.005)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
% Post Deployed	0.135**	0	0.171**	0.051**	0.055**	0.040**

Model 1: Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.006)	(0.003)	(0.005)	(0.005)	(0.004)	(0.004)
Currently Divorced	0.007**	0.022**	0.032**	0.033**	0.033**	0.030**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Post Divorced	0.074**	0.024**	0.076**	0.061**	0.057**	0.048**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Currently Demoted	0.029**	0.021**	0.027**	0.035**	0.031**	0.039**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Post Demoted	0.042**	0.020**	0.038**	0.039**	0.035**	0.042**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.093**	-0.042**	-0.085**	-0.074**	-0.084**	-0.076**
	(0.016)	(0.005)	(0.012)	(0.009)	(0.009)	(0.008)
DIV 2—Middle Atlantic	-0.005	-0.035**	-0.028**	-0.018*	-0.039**	-0.047**
	(0.009)	(0.004)	(0.008)	(0.007)	(0.006)	(0.006)
DIV 3—East North Central	-0.053**	-0.037**	-0.080**	-0.065**	-0.071**	-0.076**
	(0.010)	(0.003)	(0.007)	(0.006)	(0.005)	(0.005)
DIV 4—West North Central	-0.032**	-0.017**	-0.050**	-0.031**	-0.032**	-0.038**
	(0.009)	(0.004)	(0.007)	(0.006)	(0.006)	(0.005)
DIV 5—South Atlantic	0.038**	-0.009**	-0.021**	-0.012**	-0.017**	0.008*
	(0.005)	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)
DIV 6—East South Central	-0.022*	-0.014**	-0.022**	-0.019**	-0.020**	-0.023**
	(0.009)	(0.004)	(0.007)	(0.006)	(0.006)	(0.005)
DIV 7—West South Central	0.071**	0.023**	0.075**	0.035**	0.036**	0.027**
	(0.006)	(0.004)	(0.006)	(0.005)	(0.005)	(0.005)
DIV 8—Mountain	0.020*	0.003	0.029**	0.017*	0.005	-0.011+
	(0.009)	(0.005)	(0.008)	(0.007)	(0.007)	(0.006)
DIV 9—Pacific	0.025**	-0.009*	-0.016*	-0.020**	-0.035**	-0.031**
	(0.008)	(0.004)	(0.007)	(0.006)	(0.006)	(0.006)
Military Location	0.100**	0.010+	0.036**	0.035**	0.023**	0.042**
	(0.010)	(0.006)	(0.009)	(0.008)	(0.008)	(0.008)
Other Location	-0.113**	-0.055**	-0.110**	-0.076**	-0.098**	-0.110**
	(0.023)	(0.004)	(0.014)	(0.012)	(0.010)	(0.007)
Unit Size Category—Reference: Category 1 (<13 Junior Enlisted)						
Size CAT 2 (13 to 39)	0.267**	0.042**	0.138**	0.119**	0.104**	0.084**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Size CAT 3 (>39)	0.356**	0.129**	0.288**	0.275**	0.244**	0.227**
	(0.004)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)

Model 1: Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Year—Reference: Year 2002						
2003	0.014** (0.004)	0.008** (0.002)	-0.005+ (0.003)	0.006* (0.003)	0.006* (0.003)	-0.008** (0.003)
2004	0.034** (0.005)	0.017** (0.002)	0.005 (0.004)	0.007+ (0.004)	0.020** (0.004)	-0.018** (0.004)
2005	0.068** (0.005)	0.027** (0.003)	0.031** (0.004)	0.028** (0.005)	0.045** (0.004)	-0.007+ (0.004)
2006	0.103** (0.006)	0.039** (0.003)	0.051** (0.005)	0.033** (0.005)	0.067** (0.004)	0.019** (0.004)
2007	0.147** (0.006)	0.052** (0.003)	0.109** (0.005)	0.047** (0.005)	0.088** (0.004)	0.045** (0.005)
2008	0.178** (0.006)	0.064** (0.003)	0.149** (0.005)	0.055** (0.005)	0.112** (0.005)	0.065** (0.005)
2009	0.200** (0.006)	0.068** (0.003)	0.162** (0.005)	0.064** (0.005)	0.131** (0.005)	0.090** (0.005)
2010	0.221** (0.006)	0.069** (0.004)	0.172** (0.005)	0.077** (0.005)	0.149** (0.005)	0.116** (0.005)
2011	0.244** (0.007)	0.073** (0.004)	0.179** (0.006)	0.086** (0.006)	0.158** (0.005)	0.125** (0.005)
Month—Reference: January						
Feb	0.002** (0.001)	0.001* (0.000)	0.002** (0.001)	0.001 (0.001)	0.002** (0.001)	0.001+ (0.001)
Mar	0.005** (0.001)	0.001** (0.000)	0.004** (0.001)	0.001 (0.001)	0.004** (0.001)	0.003** (0.001)
Apr	0.007** (0.001)	0.002** (0.001)	0.003** (0.001)	-0.001 (0.001)	0.003** (0.001)	0.002* (0.001)
May	0.010** (0.001)	0.003** (0.001)	0.006** (0.001)	0.002* (0.001)	0.007** (0.001)	0.004** (0.001)
Jun	0.014** (0.001)	0.004** (0.001)	0.008** (0.001)	0.003** (0.001)	0.009** (0.001)	0.005** (0.001)
Jul	0.017** (0.001)	0.004** (0.001)	0.010** (0.001)	0.003** (0.001)	0.009** (0.001)	0.006** (0.001)
Aug	0.018** (0.001)	0.004** (0.001)	0.012** (0.001)	0.004** (0.001)	0.010** (0.001)	0.008** (0.001)
Sep	0.020** (0.001)	0.004** (0.001)	0.013** (0.001)	0.005** (0.001)	0.010** (0.001)	0.008** (0.001)
Oct	0.023** (0.001)	0.005** (0.001)	0.014** (0.001)	0.005** (0.001)	0.012** (0.001)	0.010** (0.001)
Nov	0.025** (0.001)	0.006** (0.001)	0.017** (0.001)	0.007** (0.001)	0.013** (0.001)	0.011** (0.001)
Dec	0.028** (0.001)	0.007** (0.001)	0.021** (0.001)	0.010** (0.001)	0.017** (0.001)	0.014** (0.001)
Constant	0.248** (0.017)	0.013* (0.006)	0.075** (0.012)	0.066** (0.011)	0.032** (0.010)	0.088** (0.010)

Model 1: Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
N	1291165	1291165	1291165	1291165	1291165	1291165

2. Percentage of Individuals Diagnosed

Table 16 summarizes the regression outcomes of the percentage of individuals diagnosed with the given outcome. The difference between Table 15 and 16 is that Table 15 shows the extent of the problem at unit level, whereas Table 16 examines the intensity of the problem. On average, the percentage of individuals within the same rank group of a unit, being diagnosed with any mental disorders, increases by 0.67 pps, for every 10 pps increase in the proportion of females, holding other variables constant. For race, a 10 pps increase of the proportion of non-Whites would decrease the proportion of individuals in that unit being diagnosed with any mental disorders by between 0.27 to 0.57 pps.

For MOS, a 10 pps increase of the proportion of Aviation and Combat Service MOS, are associated with a lower percentage of individuals being diagnosed with any mental disorders, by 0.46 and 0.26 pps respectively. On the other hand, presence of mental health disorders decreases proportionally with higher percent of soldiers with higher AFQT scores. For example, a 10 pps increase in individuals in the two highest categories of AFQT scores are associated with a lower percentage of individuals being diagnosed with any mental disorders, by between 0.26 to 0.58 pps, holding all else constant.

Having junior enlisted experiencing stressful events like deployment, divorce and demotion, is associated with higher percentage of individuals being diagnosed with any mental disorders, within the peer group. With the exception for those currently deployed, which saw a decrease in the proportion by 0.07, a 10 pps increase in those returned from deployment increase the proportion by 0.77 pps. On the other hand, when there is at least one junior enlisted who

experienced current or post episodes of divorce or demotion, the proportion increased by between 0.5 to 1.8 pps, and 0.9 to 1.3 pps respectively.

For geographical locations of the units, the percentage of individuals being diagnosed with any mental disorders, as compared to those with missing unit locations, decreases by between 1.9 to 6.5 pps when the unit is located in New England, Middle Atlantic, East North Central, West North Central, East South Central, Pacific regions and other locations outside the U.S.. On the contrary, those located in West South Central region and military locations increase the proportion by 2.3 and 2.5 pps respectively.

On the other hand, bigger unit sizes is associated with lower percentage of individuals being diagnosed with any mental disorders, from between 2.3 to 4.1 pps, as compared to small unit sizes of fewer than 13 junior enlisted.

As for suicide attempt, there are very few significant predictors for unit level variations in the intensity of mental health outcomes, most probably attributed to the very small sample (0.38%) diagnosed with suicide attempt among the junior enlisted.

Similar to any mental disorders, having more female soldiers, those that are currently deployed or post deployed, and at least one soldier who is currently experiencing divorce or post divorced, currently demoted or post demoted, are associated with higher percentage of individuals being diagnosed with any PTSD. On the other hand, having more non-White soldiers, higher AFQT soldiers, and being in larger units are associated with a lower percentage.

As for mood disorders, having more female soldiers, those that are post deployed, and at least one soldier who is currently experiencing divorce or post divorced, currently demoted or post demoted, are associated with higher percentage of individuals being diagnosed with mood disorders. On the other hand, having more non-White soldiers, Combat Service MOS soldiers, high AFQT soldiers, those that are currently deployed, and being in larger units are associated with a lower percentage.

Similar to Table 15, having junior enlisted experiencing stressful events (such as returned from deployment, divorce and demotion) are associated with higher unit-level rates of substance misuse.

Table 16. Outcomes for Junior Enlisted at the Platoon Level—Model 2

Model 2: % Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.067**	0.002**	0.006**	0.013**	0.011**	-0.005**
	(0.003)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Race—Reference: % White						
% Black	-0.045**	-0.002**	-0.014**	-0.008**	-0.012**	-0.006**
	(0.004)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
% Hispanic	-0.047**	-0.001	-0.011**	-0.008**	-0.008**	-0.004**
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
% Asian	-0.057**	-0.001	-0.016**	-0.005*	-0.008**	-0.004*
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
% Other Race	-0.027**	-0.002	-0.010**	-0.001	-0.003	-0.002
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
MOS—Reference: % Combat MOS						
% Aviation	-0.046**	-0.003	-0.024**	-0.007+	-0.011**	-0.007**
	(0.008)	(0.002)	(0.003)	(0.004)	(0.003)	(0.002)
% Medical	0.001	0	-0.013**	-0.003	-0.003*	-0.002
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
% Combat Service	-0.026**	0	-0.019**	-0.005**	-0.004**	-0.004**
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
% Service Support	-0.011**	0	-0.016**	0.001	-0.002	-0.001
	(0.004)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
% Other MOS	0.006	-0.001	-0.012**	0	-0.002	-0.002+
	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	-0.013*	0.001	-0.003	-0.005+	-0.003	-0.006**
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 3 (51 to 65)	-0.012+	0.001	-0.008*	-0.006+	-0.003	-0.007**
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 4 (66 to 93)	-0.025**	0.002+	-0.012**	-0.006*	-0.005*	-0.007**
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 5	-0.058**	0.001	-0.020**	-0.013**	-0.009**	-0.012**

Model 2: % Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
(>93)	b/se	b/se	b/se	b/se	b/se	b/se
	(0.009)	(0.001)	(0.004)	(0.004)	(0.003)	(0.003)
Stressful Event Indicator						
% Currently Deployed	-0.007**	-0.002**	0.010**	-0.003**	-0.001*	-0.003**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
% Post Deployed	0.077**	0.001+	0.042**	0.007**	0.010**	0.006**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Currently Divorced	0.005**	0.000+	0.002**	0.001**	0.001**	0.001**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Divorced	0.018**	0	0.005**	0.003**	0.002**	0.001**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Currently Demoted	0.009**	0.000**	0.002**	0.001**	0.001**	0.002**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Demoted	0.013**	0.001**	0.002**	0.002**	0.001**	0.003**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.065**	-0.003**	-0.013**	-0.010**	-0.010**	-0.008**
	(0.007)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
DIV 2—Middle Atlantic	-0.034**	-0.002**	-0.007**	0	-0.005**	-0.005**
	(0.004)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
DIV 3—East North Central	-0.059**	-0.003**	-0.014**	-0.008**	-0.008**	-0.007**
	(0.004)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
DIV 4—West North Central	-0.027**	-0.001**	-0.007**	-0.002	-0.003*	-0.002+
	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
DIV 5—South Atlantic	-0.002	-0.001*	-0.003*	0	-0.001	0.002**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
DIV 6—East South Central	-0.029**	-0.001+	-0.005**	-0.003*	-0.002+	0
	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
DIV 7—West South Central	0.023**	0.002**	0.012**	0.004**	0.004**	0.003**
	(0.003)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
DIV 8—Mountain	-0.008+	0	0.007**	0.001	0	-0.003**
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
DIV 9—Pacific	-0.019**	0	-0.006**	-0.003**	-0.005**	-0.003**
	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Military Location	0.025**	0	0.002	0.004*	0.002	0.004**
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)
Other Location	-0.063**	-0.004**	-0.016**	-0.011**	-0.010**	-0.010**

Model 2: % Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.008)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)
Unit Size Category—Reference: Category 1 (<13 Junior Enlisted)						
Size CAT 2 (13 to 39)	-0.023**	-0.001**	-0.005**	-0.004**	-0.003**	-0.003**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Size CAT 3 (>39)	-0.041**	-0.002**	-0.009**	-0.007**	-0.006**	-0.004**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Year—Reference: Year 2002						
2003	0.007**	0.001**	-0.002**	0.002**	0.001*	0
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
2004	0.014**	0.001**	-0.003**	0.003**	0.002**	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
2005	0.026**	0.002**	-0.001	0.006**	0.004**	0.001
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2006	0.043**	0.002**	0.001+	0.006**	0.006**	0.002**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2007	0.064**	0.003**	0.009**	0.008**	0.008**	0.004**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2008	0.082**	0.004**	0.015**	0.009**	0.011**	0.006**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2009	0.100**	0.005**	0.019**	0.011**	0.014**	0.009**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2010	0.116**	0.005**	0.022**	0.013**	0.017**	0.013**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
2011	0.129**	0.005**	0.022**	0.015**	0.019**	0.014**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Month—Reference: January						
Feb	0.002**	0	0.001**	0.000*	0.000**	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mar	0.003**	0.000+	0.001**	0.000*	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Apr	0.003**	0.000**	0.001**	0.000*	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
May	0.005**	0.000**	0.001**	0.000**	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Jun	0.007**	0.000**	0.001**	0.001**	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Jul	0.008**	0.000**	0.001**	0.001**	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Aug	0.009**	0.000**	0.002**	0.001**	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Sep	0.009**	0.000**	0.002**	0.001**	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Oct	0.011**	0.000**	0.002**	0.001**	0.002**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Model 2: % Junior Enlisted (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Nov	0.012** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)
Dec	0.014** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)
Constant	0.088** (0.007)	0 (0.001)	0.030** (0.003)	0.014** (0.003)	0.011** (0.002)	0.016** (0.002)
N	1291165	1291165	1291165	1291165	1291165	1291165

D. UNIT LEVEL ANALYSIS FOR COMBAT UNIT SUBSET

1. Binary: The Unit Has at Least One Individual Diagnosed with the Given Outcome

Table 17 summarizes the regression outcomes of the likelihood of at least one individual diagnosed with the given outcome in the combat unit subset. There does not seem to be significant differences in presence of mental health diagnoses across genders, different races, AFQT categories or combat vs. non-combat MOS, possibly due to the imbalanced cases of any mental disorders across the different rank groups. This is evident when the likelihood of at least one individual within the unit, being diagnosed with any mental disorders, decreases by 2.14 pps for every 10 pps increase in the proportion for officers. Officers have a much lower count and percentage being diagnosed with any mental disorders as compared to the Senior and Junior Enlisted. Nonetheless, these could possibly be due to the officers having higher mental resilience or that they are less likely to seek for help, resulting in the lower rate of diagnosis.

Stressful events like deployment, divorce and demotion, are still associated with higher likelihood of at least one individual being diagnosed with any mental disorders. The likelihood increases by 1.44 pps for every 10 pps increase in the proportion of soldiers who returned from deployment. On the other hand, the likelihood increases by 5.0 and 1.7 pps when a soldier was divorced and currently experiencing demotion respectively.

For geographical locations of the units, the likelihood of at least one individual being diagnosed with any mental disorders in a unit, as compared to those with missing unit locations, increases by 4.9 pps and 5.3 pps when the unit is located in South Atlantic and West South Central regions respectively. Those located in other locations outside the U.S. decrease the likelihood by 26.0 pps. Noticeably, other locations outside the U.S. have significantly lower likelihood, possibly due to better soldiers are deployed outside the U.S..

Not surprisingly, bigger unit sizes are associated with higher likelihood of at least one individual being diagnosed with any mental disorders within the unit, from between 17.6 to 26.2 pps, as compared to small unit sizes of fewer than 15 soldiers.

As for suicide attempt, having more officers and senior enlisted soldiers are associated with lower likelihood of at least one individual being diagnosed with suicide attempt. However, having at least one soldier who is divorced, and is currently or post demoted are associated with a higher likelihood.

Similar to overall mental disorders, having more soldiers with higher AFQT scores, those who are currently or had returned from deployment, and at least one soldier who is currently or post divorced, currently or posted demoted, are associated their higher likelihood of at least one individual being diagnosed with PTSD.

As for mood disorders, having more soldiers who returned from deployment, and at least one soldier who is currently or post divorced, currently or posted demoted, are associated with higher likelihood of at least one individual being diagnosed with mood disorders. On the other hand, having more non-combat MOS soldiers is associated with a lower likelihood.

For substance misuse, there are no significant differences across in the rank groups in presence of substance misuse. Having more non-combat MOS soldiers, soldiers with AFQT scores in categories 2 and 3, or soldiers who returned from deployment, and at least one soldier who is currently or post

divorced, currently or posted demoted, are associated with higher likelihood of at least one individual being diagnosed with substance misuse.

In general, there are also no significant differences across variables such as gender and race in presence of any mental health disorders. However, bigger unit sizes are associated with higher likelihood of at least individual being diagnosed with mental health disorders.

Table 17. Outcomes for Combat Unit Subset at the Platoon Level—Model 1

Model 1: Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.101	0.006	-0.002	0.155+	0.122	-0.021
	(0.123)	(0.041)	(0.095)	(0.085)	(0.095)	(0.069)
Race—Reference: % White						
% Black	-0.066	0.004	-0.215**	-0.018	-0.147**	-0.115*
	(0.060)	(0.022)	(0.057)	(0.059)	(0.051)	(0.048)
% Hispanic	0.071	0.05	0.139+	0.005	0.089	0.051
	(0.084)	(0.031)	(0.072)	(0.051)	(0.063)	(0.055)
% Asian	0.084	0.033	-0.046	0.150*	-0.054	0.048
	(0.084)	(0.043)	(0.080)	(0.076)	(0.069)	(0.077)
% Other Race	0.06	0.011	0	0.181*	0.169*	-0.01
	(0.077)	(0.038)	(0.079)	(0.073)	(0.076)	(0.062)
Rank Group—Reference: E1 to E4						
% Officer	-0.214**	-0.077**	-0.107*	-0.069	-0.078+	-0.014
	(0.050)	(0.023)	(0.053)	(0.045)	(0.042)	(0.046)
% Senior Enlisted	0.075*	-0.046**	0.107**	0.035	0.021	0.032
	(0.034)	(0.015)	(0.035)	(0.032)	(0.030)	(0.029)
MOS—Reference: Combat						
% Non-Combat	0.029	0.049	0.08	0.184**	0.032	0.144**
	(0.064)	(0.034)	(0.064)	(0.054)	(0.052)	(0.053)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.158*	-0.034	0.269**	0.079	0.163**	0.172**
	(0.064)	(0.029)	(0.068)	(0.063)	(0.059)	(0.066)
% AFQT CAT 3 (51 to 65)	0.182**	-0.036	0.189**	0.079	0.101+	0.132*
	(0.062)	(0.031)	(0.067)	(0.059)	(0.058)	(0.060)
% AFQT CAT 4 (66 to 93)	0.126*	0.007	0.125*	0.085	0.132*	0.098+
	(0.061)	(0.028)	(0.063)	(0.056)	(0.052)	(0.050)

Model 1: Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
% AFQT CAT 5 (>93)	-0.124	-0.063+	0.012	-0.134	-0.051	-0.021
	(0.108)	(0.036)	(0.097)	(0.088)	(0.074)	(0.076)
Stressful Event Indicator						
% Currently Deployed	0.022	-0.027*	0.152**	0.024	0.023	-0.029
	(0.023)	(0.013)	(0.024)	(0.021)	(0.021)	(0.020)
% Post Deployed	0.144**	-0.003	0.352**	0.089**	0.151**	0.056*
	(0.030)	(0.015)	(0.031)	(0.028)	(0.027)	(0.025)
Currently Divorced	0.006	0.013+	0.028**	0.021*	0.016*	0.035**
	(0.005)	(0.007)	(0.007)	(0.009)	(0.008)	(0.008)
Post Divorced	0.050**	0.021**	0.055**	0.048**	0.037**	0.045**
	(0.012)	(0.005)	(0.012)	(0.009)	(0.008)	(0.009)
Currently Demoted	0.017**	0.051**	0.025**	0.046**	0.058**	0.051**
	(0.006)	(0.008)	(0.008)	(0.010)	(0.009)	(0.009)
Post Demoted	0.009	0.059**	0.026**	0.074**	0.070**	0.086**
	(0.010)	(0.008)	(0.009)	(0.010)	(0.010)	(0.011)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.1	-0.055**	-0.288**	-0.142**	-0.118*	-0.058
	(0.076)	(0.011)	(0.042)	(0.033)	(0.052)	(0.049)
DIV 2—Middle Atlantic	-0.028	-0.040**	-0.014	0.042	-0.031	0
	(0.030)	(0.014)	(0.031)	(0.027)	(0.025)	(0.023)
DIV 3—East North Central	-0.096*	-0.042**	-0.138**	-0.101**	-0.067*	-0.083**
	(0.039)	(0.014)	(0.035)	(0.025)	(0.031)	(0.025)
DIV 4—West North Central	0.021	0.004	-0.068**	-0.026	-0.078**	-0.066**
	(0.026)	(0.015)	(0.026)	(0.024)	(0.021)	(0.020)
DIV 5—South Atlantic	0.049**	0.005	-0.050**	-0.049**	-0.038*	0.008
	(0.015)	(0.010)	(0.017)	(0.016)	(0.015)	(0.015)
DIV 6—East South Central	-0.002	0.057**	-0.02	-0.002	-0.001	0.01
	(0.028)	(0.021)	(0.029)	(0.025)	(0.025)	(0.023)
DIV 7—West South Central	0.053**	0.060**	0.101**	0.065**	0.050*	0.035+
	(0.020)	(0.017)	(0.023)	(0.022)	(0.021)	(0.019)
DIV 8—Mountain	0.049	0.094**	0.084*	0.073*	0.075*	0.059+
	(0.031)	(0.029)	(0.034)	(0.033)	(0.032)	(0.032)
DIV 9—Pacific	-0.058*	0.028	-0.065*	-0.069**	-0.088**	-0.035
	(0.030)	(0.020)	(0.030)	(0.025)	(0.024)	(0.025)
Military Location	0.026	-0.027	-0.007	-0.055	-0.055	0.003
	(0.033)	(0.032)	(0.041)	(0.042)	(0.038)	(0.041)

Model 1: Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Other Location	-0.260**	-0.084**	-0.177*	-0.155**	-0.150**	-0.142**
	(0.100)	(0.022)	(0.087)	(0.055)	(0.052)	(0.046)
Unit Size Category—Reference: Category 1 (<15 Soldiers)						
Size CAT 2 (15 to 45)	0.176**	0.046**	0.178**	0.136**	0.103**	0.100**
	(0.014)	(0.006)	(0.013)	(0.012)	(0.010)	(0.010)
Size CAT 3 (>45)	0.262**	0.169**	0.334**	0.347**	0.299**	0.335**
	(0.017)	(0.015)	(0.020)	(0.021)	(0.019)	(0.022)
Year—Reference: Year 2002						
2003	-0.026	-0.001	-0.009	-0.007	-0.038*	-0.021
	(0.027)	(0.012)	(0.020)	(0.022)	(0.017)	(0.018)
2004	-0.023	0.005	-0.004	-0.006	-0.015	-0.041+
	(0.034)	(0.014)	(0.027)	(0.031)	(0.025)	(0.024)
2005	0.005	0.019	0.001	0	-0.018	-0.035
	(0.037)	(0.017)	(0.031)	(0.033)	(0.027)	(0.028)
2006	0.034	0.034+	0.063+	0.017	0.036	0.01
	(0.036)	(0.018)	(0.032)	(0.033)	(0.029)	(0.029)
2007	0.038	0.041*	0.135**	0.05	0.077*	0.059*
	(0.037)	(0.018)	(0.031)	(0.034)	(0.030)	(0.029)
2008	0.055	0.059**	0.182**	0.052	0.095**	0.085**
	(0.038)	(0.019)	(0.031)	(0.033)	(0.029)	(0.029)
2009	0.084*	0.068**	0.216**	0.059+	0.143**	0.120**
	(0.038)	(0.020)	(0.032)	(0.033)	(0.029)	(0.029)
2010	0.101*	0.058**	0.232**	0.060+	0.175**	0.161**
	(0.040)	(0.020)	(0.033)	(0.033)	(0.030)	(0.029)
2011	0.138**	0.064**	0.238**	0.067+	0.179**	0.158**
	(0.041)	(0.021)	(0.035)	(0.035)	(0.032)	(0.031)
Month—Reference: January						
Feb	0.002	0.003	0.003	0.004	0.003	0.006
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Mar	0.012**	0.002	0.003	0.007	0.009*	0.008+
	(0.005)	(0.003)	(0.005)	(0.005)	(0.004)	(0.004)
Apr	0.008	0.002	-0.004	0.002	0.004	0.006
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
May	0.008	0	-0.003	0.002	0.003	0.009+
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Jun	0.012*	0.004	0.005	0.010+	0.011*	0.012*
	(0.005)	(0.004)	(0.006)	(0.005)	(0.005)	(0.005)
Jul	0.010+	0.006	0.008	0.014*	0.010*	0.019**
	(0.005)	(0.004)	(0.006)	(0.005)	(0.005)	(0.005)
Aug	0.012*	0.009*	0.011+	0.011*	0.013*	0.018**
	(0.006)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)
Sep	0.016**	0.004	0.016**	0.011*	0.015**	0.017**
	(0.006)	(0.004)	(0.006)	(0.005)	(0.005)	(0.005)

Model 1: Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Oct	0.014* (0.006)	0.007+ (0.004)	0.015* (0.006)	0.015** (0.005)	0.022** (0.005)	0.025** (0.005)
Nov	0.020** (0.005)	0.006 (0.004)	0.021** (0.006)	0.013* (0.005)	0.024** (0.005)	0.026** (0.005)
Dec	0.021** (0.005)	0.008* (0.003)	0.021** (0.005)	0.009+ (0.005)	0.023** (0.005)	0.021** (0.005)
Constant	0.332** (0.061)	0.013 (0.025)	-0.203** (0.060)	-0.065 (0.057)	-0.116* (0.050)	-0.120* (0.055)
N	45668	45668	45668	45668	45668	45668

2. Percentage of Individuals Diagnosed

Table 18 summarizes the regression outcomes of the percentage of individuals diagnosed with the given outcome. The difference between Table 17 and 18 is that Table 17 shows the extent of the problem at the unit level, whereas Table 18 examines the intensity of the problem. For race, a 10 pps increase of the proportion of Black soldiers would decrease the proportion of individuals in that unit being diagnosed with any mental disorders by 0.62 pps.

For MOS, a 10 pps increase of the proportion of non- Combat MOS is associated with a higher percentage of individuals being diagnosed with any mental disorders by 0.5. For AFQT, a 10 pps increase in individuals in categories 2, 3 and 4 of AFQT scores are associated with a higher percentage of individuals being diagnosed with any mental disorders, by between 0.58 to 1.05 pps, holding all else constant.

Having soldiers experiencing stressful events like deployment, divorce and demotion is associated with higher percentage of individuals being diagnosed with any mental disorders, within the peer group. A 10 pps increase in soldiers who returned from deployment increase the proportion by 0.81 pps. On the other hand, at least one soldier who experienced current or post episodes of demotion, increase the proportion by 0.8 and 1.1 pps respectively.

For geographical locations of the units, the percentage of individuals being diagnosed with any mental disorders, as compared to those with missing unit locations, decreases by between 1.9 to 10.9 pps when the unit is located in New England, Middle Atlantic, East North Central, West North Central, East South Central, Pacific regions and other locations outside the U.S..

On the other hand, bigger unit sizes is associated with lower percentage of individuals being diagnosed with any mental disorders, from between 1.1 to 2.4 pps, as compared to small unit sizes of fewer than 15 soldiers.

As for suicide attempt, there are very few significant predictors for unit level variations in the intensity of mental health outcomes, most probably attributed to the very small sample (0.25%) diagnosed.

Similar to any mental disorders, having more Hispanic soldiers, senior enlisted, soldiers with AFQT scores in categories 2 and 3, and soldiers who are currently or have returned from deployment, are associated with higher percentage of soldiers being diagnosed with PTSD. On the other hand, having more Black soldiers and having a unit size of more than 45 soldiers, are associated with lower percentage.

As for mood disorders, having more officers is associated with lower percentage of soldiers developing depression. However, having more soldiers who returned from deployment is associated with a higher percentage of soldiers developing depression. On the other hand, having larger unit sizes is associated with lower percentage of soldiers developing anxiety, while having more soldiers who returned from deployment and at least one soldier who was demoted are associated with higher percentage of soldiers developing anxiety.

For substance misuse, having more non-Combat MOS soldiers, soldiers with AFQT scores in category 3, and at least one or more soldier who are divorced, currently demoted or post demoted, are associated with higher percentage of soldiers being diagnosed with substance misuse. On the other

hand, having more Black soldiers and soldiers who are currently deployed, are associated with lower percentage.

Table 18. Outcomes for Combat Unit Subset at the Platoon Level—Model 2

Model 2: % Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.069+	0.001	0.007	0.016+	0.024	-0.006
	(0.037)	(0.003)	(0.015)	(0.009)	(0.015)	(0.006)
Race—Reference: % White						
% Black	-0.062**	0.005+	-0.038**	-0.005	-0.015*	-0.013**
	(0.018)	(0.003)	(0.010)	(0.005)	(0.006)	(0.004)
% Hispanic	0.059*	0.003	0.044**	0.003	0.023*	0.009
	(0.030)	(0.002)	(0.014)	(0.005)	(0.010)	(0.006)
% Asian	0.039	0.008	0.026	0.017+	-0.004	0.01
	(0.035)	(0.005)	(0.026)	(0.009)	(0.011)	(0.009)
% Other Race	0.017	0.004	0.001	0.007	0.015+	-0.006
	(0.023)	(0.003)	(0.013)	(0.007)	(0.009)	(0.006)
Rank Group—Reference: E1 to E4						
% Officer	-0.038*	-0.006**	-0.003	-0.012**	-0.008+	-0.006
	(0.016)	(0.002)	(0.010)	(0.004)	(0.005)	(0.005)
% Senior Enlisted	0.055**	-0.003+	0.044**	0.005	0.003	0.003
	(0.012)	(0.002)	(0.008)	(0.004)	(0.004)	(0.004)
MOS—Reference: Combat						
% Non-Combat	0.050**	-0.001	0.018	0.011+	-0.003	0.013*
	(0.018)	(0.002)	(0.011)	(0.006)	(0.006)	(0.006)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.105**	-0.002	0.049**	-0.003	0.01	0.008
	(0.022)	(0.003)	(0.015)	(0.006)	(0.006)	(0.006)
% AFQT CAT 3 (51 to 65)	0.093**	0	0.040**	0.002	0.006	0.012*
	(0.021)	(0.002)	(0.015)	(0.006)	(0.006)	(0.006)
% AFQT CAT 4 (66 to 93)	0.058**	-0.001	0.018	0.003	0.014**	0.004
	(0.021)	(0.002)	(0.013)	(0.005)	(0.005)	(0.005)
% AFQT CAT 5 (>93)	-0.02	-0.006*	-0.011	-0.01	-0.012	-0.008
	(0.030)	(0.003)	(0.020)	(0.009)	(0.007)	(0.008)
Stressful Event Indicator						
% Currently Deployed	0.007	-0.001+	0.017**	0	0.002	-0.005**
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)

Model 2: % Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
% Post Deployed	0.081**	0	0.057**	0.007**	0.011**	0.004+
	(0.009)	(0.001)	(0.005)	(0.002)	(0.003)	(0.002)
Currently Divorced	0.001	0	0	0	0	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Post Divorced	0.005+	0	0.001	0.001	0.001	0.002*
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
Currently Demoted	0.008**	0.001**	0.001	0.001	0.001	0.002**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Post Demoted	0.011**	0.001**	0.002	0.002**	0.002*	0.003**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Unit Location—Reference: Missing Location						
DIV 1—New England	-0.071**	-0.003**	-0.043**	-0.014**	-0.003	-0.004
	(0.019)	(0.001)	(0.007)	(0.004)	(0.008)	(0.006)
DIV 2—Middle Atlantic	-0.022*	-0.002**	-0.013*	-0.003	-0.007**	-0.005**
	(0.010)	(0.000)	(0.005)	(0.003)	(0.002)	(0.002)
DIV 3—East North Central	-0.064**	-0.001	-0.017*	-0.009*	-0.006	-0.005
	(0.012)	(0.002)	(0.008)	(0.004)	(0.004)	(0.004)
DIV 4—West North Central	-0.031**	0.001	-0.019**	-0.004+	-0.010**	-0.004+
	(0.008)	(0.001)	(0.004)	(0.003)	(0.002)	(0.002)
DIV 5—South Atlantic	-0.019**	-0.001	-0.016**	-0.006**	-0.006**	-0.001
	(0.005)	(0.000)	(0.003)	(0.002)	(0.002)	(0.002)
DIV 6—East South Central	-0.018+	0.001	-0.008	-0.003	-0.001	-0.001
	(0.009)	(0.001)	(0.007)	(0.003)	(0.005)	(0.002)
DIV 7—West South Central	0.021*	0	0.022**	0.005+	0.005+	0.003
	(0.009)	(0.001)	(0.006)	(0.003)	(0.003)	(0.002)
DIV 8—Mountain	0.029*	0.002	0.016+	0.001	0.002	0.004
	(0.015)	(0.002)	(0.009)	(0.004)	(0.004)	(0.004)
DIV 9—Pacific	-0.050**	0.001	-0.024**	-0.011**	-0.012**	-0.005*
	(0.009)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)
Military Location	0	-0.001	-0.01	-0.005	-0.004	0
	(0.014)	(0.001)	(0.007)	(0.004)	(0.004)	(0.002)
Other Location	-0.109**	-0.007**	-0.049**	-0.018**	-0.022**	-0.017**
	(0.026)	(0.002)	(0.016)	(0.006)	(0.006)	(0.004)
Unit Size Category—Reference: Category 1 (<15 Soldiers)						
Size CAT 2 (15 to 45)	-0.011**	-0.001	-0.001	-0.001	-0.004**	-0.002+
	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)

Model 2: % Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Size CAT 3 (>45)	-0.024**	-0.001+	-0.007*	-0.003+	-0.006**	-0.002+
	(0.005)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
Year—Reference: Year 2002						
2003	-0.001	0	-0.001	-0.001	-0.003*	0
	(0.004)	(0.000)	(0.002)	(0.002)	(0.001)	(0.001)
2004	-0.003	0	-0.010**	0	-0.002	-0.003*
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
2005	-0.003	0	-0.014**	-0.001	-0.004	-0.002
	(0.007)	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)
2006	0.008	0.001	-0.013**	0	-0.001	0.001
	(0.008)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)
2007	0.025**	0.002*	-0.003	0.003	0	0.002
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
2008	0.043**	0.003**	0.006	0.003	0.003	0.005**
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
2009	0.064**	0.003**	0.018**	0.003	0.006*	0.009**
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
2010	0.077**	0.003**	0.021**	0.004	0.010**	0.012**
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
2011	0.091**	0.003*	0.019**	0.003	0.010**	0.011**
	(0.009)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
Month—Reference: January						
Feb	0.003**	0	0.001	0	0.001+	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Mar	0.005**	0	0.002*	0	0.001*	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Apr	0.003**	0	0	0	0.001	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
May	0.005**	0	0.001	0	0.001	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Jun	0.007**	0	0.002*	0.001	0.001+	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Jul	0.007**	0	0.002+	0.001*	0.001+	0.001
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Aug	0.008**	0	0.002*	0.001	0.001*	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Sep	0.009**	0	0.002**	0	0.001**	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Oct	0.012**	0	0.003**	0.001	0.002**	0.001**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Nov	0.013**	0	0.004**	0.001*	0.002**	0.002**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Dec	0.012**	0	0.004**	0	0.001**	0.001**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)

Model 2: % Combat Unit Subset (Random Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Constant	-0.011	0.003	-0.026*	0.010*	0.002	0.001
	(0.018)	(0.002)	(0.012)	(0.004)	(0.005)	(0.005)
N	45668	45668	45668	45668	45668	45668

E. INDIVIDUAL LEVEL ANALYSIS FOR COMBAT UNIT SUBSET

The regression results for the individual level analysis are organized into the specific two models:

1. The likelihood of an individual being diagnosed with the stated mental disorder using both individual level binary variables and unit-level variables (excluding self) in binary and percentages.
2. Model 2 is similar to model 1, except we refine unit-level variables (excluding self) from binary indicators (to indicate presence of a stressful event) to categorical (to capture whether the unit has 0, low, or high percent of soldiers experiencing a stressful event).

Both models will examine the eight outcomes similar to the unit level analysis: Any mental health diagnosis, Suicide attempt, PTSD, Depression, Anxiety, Substance misuse, Alcohol misuse, Drug misuse.

1. Model 1

In model 1, we attempt to estimate how the different variables will affect the probability of an individual developing mental health disorders. The individual level variables will show how individual specific characteristics, like being female or Black, will affect one's likelihood of developing mental health disorders; while the unit level variables will show how peer influences and unit compositions (such as gender and race distribution) will affect the likelihood of an individual developing mental health disorders. The regression results for model 1 are shown in Table 20.

a. *Regression Results of Individual Level Variables*

Consistent with prior literature, female soldiers, senior enlisted, non-Combat MOS soldiers, low AFQT soldiers, those that are currently experiencing divorce or post divorced, those that are currently experiencing demotion or post demoted, have higher probability of being diagnosed with mental health disorders. On the other hand, non-White soldiers, officers, Combat MOS soldiers, high AFQT soldiers are associated with lower likelihood of being diagnosed with mental health disorders. The rest of the discussion focuses on the estimated effects of peer influence and unit composition variables.

b. *Regression Results of Peer Influence Variables*

The regression results show stressful events experienced by peers increases the likelihood of an individual developing mental health disorder in that unit. A 10 pps increase in number of peers (i.e., excluding self) who returned from deployment is associated with a higher likelihood that the individual soldiers will develop any kind of mental health disorders by 0.6, PTSD by 0.35 pps, mood disorders by 0.43 pps, and substance misuse including alcohol and drug by 0.16 pps. Similarly, when the peer group has at least one case of divorce and demotion excluding the individual, it is associated with higher likelihood of developing all the mental health disorders by 0.1 to 2.3 pps. Post divorced peers and currently demoted peers seemed to have a higher significance.

Like how students with lower learning abilities influence their peers in education, this result suggests that soldiers in a unit are negatively affected when his peer group has more soldiers undergoing stressful events, increasing their probability of developing mental health disorders themselves.

In terms of the influence of mental health disorders among peers on an individual soldiers' own mental health, we find negative association in general. Individuals with one or more peers having any form of mental disorders have a lower likelihood of developing any mental disorders by 6.5 pps. Those with one or more peers having suicide attempt has a lower likelihood of attempting suicide

themselves by 1.0 pps. Similar for those with one or more peers having anxiety and drug misuse, the likelihood of developing the two types of disorder decreases by between 0.6 to 0.8 pps. However, those with one or more peers having PTSD is associated with lower likelihood of developing PTSD by 5.9 pps. These results are surprising as one might expect that units with higher share of peers with mental disorders might bring down other soldiers in the unit (i.e., higher likelihood of an individual developing mental disorders), but that is not the case once we control for unit level presence of stressful events and individual level risk factors. The possible reason is that the U.S. Army might have a robust system to manage soldiers with mental disorders, providing the necessary support and care, which in turn reduce the chances of new occurrences. It might also be the case of the higher the mental disorder occurrences, the tighter the control measure was put in place; a typical reaction of the military in handling such situations. PTSD, however might be an exception as it is mainly caused by the nature of the job and environment, which might be harder to prevent as soldiers who were deployed shared the same experiences to relate to.

When we examine specific mental health diagnosis, a consistent negative trend is observed for individuals with one or more peers having the same mental disorders. This might suggest the correlation of same condition influence, where for instance having peers attempting suicides is associated with higher likelihood of one attempting suicide, but not for the case where higher likelihood of one attempting suicide is associated with those having other mental disorders. Those with one or more peers having any mental disorders other than suicide attempt is associated with lower likelihood of having suicide attempt by 7.2 pps. Those with one or more peers having any mental disorders other than PTSD is associated with lower likelihood of having PTSD by a huge 48.7 pps. Similar pps decrease of between 19.5 to 24.5, are observed in the likelihood of one developing the specific mental disorder, for those with one or more peers having any mental disorders other than depression, anxiety, substance misuse, alcohol misuse or drug misuse.

In terms of the rest of the unit composition, while gender seemed to have significant differences in earlier unit level analysis, the number of females within the combat unit subset is possibly too small in exhibiting a similar trend. Only 4% of the sample in the subset are females. As for race, a 10 pps increase of the number of Black soldiers, as compared to White soldiers, are associated with lower likelihood of an individual developing mental health disorders, with any mental disorders and PTSD by 0.91 and 0.88 pps respectively, anxiety, substance misuse, alcohol misuse and drug misuse by between 0.4 to 0.5. Other non-White races do not appear to have significant differences.

For rank group, an increase of 10 pps in the proportion of officers, as compared to junior enlisted, is associated with lower likelihood of an individual developing depression by 0.44 pps. Similar increase of 10 pps in the proportion senior enlisted is associated with higher likelihood of any mental disorders by 0.65 pps. Changes in the number of non-Combat MOS soldiers, as compared to the Combat MOS soldiers seemed to be indifferent on the likelihood of one developing mental disorders. As for AFQT scores, a 10 pps increase in the number of soldiers with AFQT scores in AFQT Categories 2 and 3, are associated with higher likelihood for almost all the mental health disorders, with the exception of suicide attempt, by between 0.36 to 1.26 pps. This might be due to a much smaller sample in suicide attempt of only 0.25%.

Table 19. Outcomes for Combat Unit Subset at the Platoon Level—Model 1

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Unit Variables								
Mental Health (excluding self): Care Seeking vs Condition Influence Indicator								
Any Mental Disorders	-0.065**							
	(0.006)							
Suicide Attempt		-0.010**						
		(0.001)						
Any Mental Disorders Excluding Suicide Attempt		-0.072**						
		(0.006)						
PTSD			0.059**					
			(0.005)					
Any Mental Disorders Excluding PTSD			-0.487**					
			(0.017)					
Depression				-0.002				
				(0.002)				
Any Mental Disorders Excluding Depression				-0.245**				
				(0.013)				
Anxiety					-0.006**			
					(0.002)			
Any Mental Disorders Excluding Anxiety					-0.240**			
					(0.013)			
Substance Misuse						-0.002		
						(0.002)		
Any Mental Disorders Excluding Substance						-0.242**		

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Misuse								
						(0.013)		
Alcohol Misuse							-0.005*	
							(0.002)	
Any Mental Disorders Excluding Alcohol Misuse							-0.225**	
							(0.013)	
Drug Misuse								-0.008**
								(0.002)
Any Mental Disorders Excluding Drug Misuse								-0.195**
								(0.012)
Stressful Event Indicator								
% Currently Deployed	-0.002	0	0.011	0.007+	0.007+	0.004	0.003	0.004
	(0.005)	(0.001)	(0.007)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)
% Post Deployed	0.060**	0.004*	0.035**	0.020**	0.023**	0.016**	0.015**	0.015**
	(0.007)	(0.002)	(0.011)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)
Currently Divorced	0	0	0	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Post Divorced	0	0.005**	0.023**	0.015**	0.014**	0.015**	0.014**	0.013**
	(0.003)	(0.001)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Currently Demoted	0.003*	0.001**	0.004**	0.002**	0.002**	0.002**	0.002**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Post Demoted	0.005**	0.001*	0.003	0.002	0.002	0.001	0.002	0.002
	(0.002)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender—Reference: % Male								
% Female	0.092*	0.011	0.06	0.041	0.046	0.031	0.028	0.032
	(0.037)	(0.009)	(0.057)	(0.031)	(0.031)	(0.030)	(0.028)	(0.024)
Race—Reference: % White								
% Black	-0.091**	-0.012*	-0.088**	-0.040*	-0.053**	-0.050**	-0.050**	-0.040**

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
	(0.020)	(0.005)	(0.031)	(0.017)	(0.017)	(0.016)	(0.015)	(0.014)
% Hispanic	0.042	0.006	-0.019	-0.005	-0.002	-0.008	-0.008	-0.012
	(0.029)	(0.007)	(0.042)	(0.022)	(0.022)	(0.022)	(0.020)	(0.018)
% Asian	0.017	0	0.002	0.005	-0.009	-0.004	-0.004	0.008
	(0.034)	(0.008)	(0.043)	(0.023)	(0.023)	(0.022)	(0.021)	(0.019)
% Other Race	-0.023	-0.004	-0.029	0.001	-0.003	-0.018	-0.019	-0.007
	(0.026)	(0.007)	(0.038)	(0.020)	(0.020)	(0.019)	(0.018)	(0.016)
Rank Group—Reference: % E1 to E4								
% Officer	0.047*	-0.013*	-0.052	-0.044**	-0.037*	-0.034*	-0.031*	-0.031*
	(0.021)	(0.005)	(0.032)	(0.017)	(0.016)	(0.017)	(0.016)	(0.013)
% E5 and above	0.065**	0	0.016	0	0.002	0.005	0.006	0.001
	(0.014)	(0.004)	(0.021)	(0.012)	(0.012)	(0.012)	(0.011)	(0.010)
MOS—Reference: % Combat MOS								
% Non-Combat	0.007	-0.003	-0.028	-0.009	-0.015	-0.007	-0.008	-0.01
	(0.017)	(0.005)	(0.024)	(0.013)	(0.012)	(0.013)	(0.012)	(0.010)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)								
% AFQT CAT 2 (31 to 50)	0.126**	0.009	0.102**	0.043*	0.052**	0.052**	0.048**	0.036**
	(0.025)	(0.006)	(0.034)	(0.017)	(0.017)	(0.017)	(0.016)	(0.014)
% AFQT CAT 3 (51 to 65)	0.095**	0.012*	0.110**	0.049**	0.054**	0.060**	0.055**	0.044**
	(0.026)	(0.006)	(0.035)	(0.017)	(0.018)	(0.017)	(0.016)	(0.014)
% AFQT CAT 4 (66 to 93)	0.054*	0.009+	0.066*	0.030+	0.039*	0.035*	0.033*	0.022+
	(0.024)	(0.006)	(0.032)	(0.017)	(0.017)	(0.016)	(0.015)	(0.014)
% AFQT CAT 5 (>93)	0	-0.007	-0.03	-0.022	-0.02	-0.01	-0.009	-0.005
	(0.034)	(0.009)	(0.054)	(0.029)	(0.027)	(0.028)	(0.026)	(0.023)
Individual Variables								
Gender—Reference: Male								
Female	0.070**	0.002+	0.002	0.014**	0.008**	-0.002	-0.002	-0.002
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)
Race—Reference: White								

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Black	-0.036** (0.003)	-0.001** (0.000)	-0.010** (0.002)	-0.005** (0.001)	-0.008** (0.001)	-0.006** (0.001)	-0.005** (0.001)	-0.004** (0.001)
Hispanic	-0.028** (0.004)	0 (0.001)	-0.004** (0.002)	-0.003** (0.001)	-0.003* (0.001)	-0.004** (0.001)	-0.003** (0.001)	-0.003** (0.001)
Asian	-0.033** (0.004)	0.001 (0.001)	-0.010** (0.002)	-0.001 (0.001)	-0.002* (0.001)	-0.005** (0.001)	-0.005** (0.001)	0.001 (0.001)
Other Race	-0.007+ (0.004)	0 (0.000)	-0.001 (0.002)	0 (0.001)	-0.001 (0.001)	-0.002* (0.001)	-0.002* (0.001)	-0.001 (0.001)
Rank Group—Reference: E1 to E4								
Officer	-0.054** (0.004)	-0.004** (0.000)	-0.008** (0.002)	-0.005** (0.001)	-0.007** (0.001)	-0.009** (0.001)	-0.008** (0.001)	-0.006** (0.001)
E5 and above	0.021** (0.003)	-0.003** (0.000)	0.012** (0.001)	0.002** (0.001)	0.001+ (0.001)	-0.001* (0.001)	0 (0.001)	-0.001 (0.001)
MOS—Reference: Combat MOS								
Non-Combat	0.008** (0.003)	0 (0.000)	-0.005** (0.001)	0.002** (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002** (0.001)
AFQT Score Category—Reference: Category 1 (0 to 30, including missing AFQT)								
AFQT CAT 2 (31 to 50)	0.021** (0.004)	0.001 (0.000)	0.007** (0.002)	0.001 (0.001)	0.002* (0.001)	0.003** (0.001)	0.003* (0.001)	0.004** (0.001)
AFQT CAT 3 (51 to 65)	0.023** (0.004)	0.001+ (0.000)	0.006** (0.002)	0.003* (0.001)	0.003** (0.001)	0.003** (0.001)	0.003* (0.001)	0.004** (0.001)
AFQT CAT 4 (66 to 93)	0.003 (0.003)	0.001 (0.000)	0.002 (0.002)	0.002* (0.001)	0.002+ (0.001)	0 (0.001)	0 (0.001)	0.002** (0.001)
AFQT CAT 5 (>93)	-0.020** (0.005)	-0.001 (0.001)	-0.006** (0.002)	-0.001 (0.001)	-0.001 (0.001)	-0.003* (0.001)	-0.003+ (0.001)	0 (0.001)
Stressful Event Indicator								
Currently Divorced	0.057** (0.007)	0.002+ (0.001)	0.009** (0.003)	0.003 (0.002)	0.006* (0.002)	0.006** (0.002)	0.007** (0.002)	0.004+ (0.002)
Post Divorced	0.066**	0.002**	0.014**	0.008**	0.009**	0.008**	0.008**	0.003**

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
	(0.005)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Currently Demoted	0.155**	0.009**	0.019**	0.015**	0.019**	0.030**	0.026**	0.036**
	(0.009)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
Post Demoted	0.161**	0.009**	0.019**	0.015**	0.016**	0.030**	0.027**	0.031**
	(0.009)	(0.002)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)
Year—Reference: Year 2002								
2003	0.001	-0.003*	-0.025**	-0.013**	-0.014**	-0.013**	-0.013**	-0.012**
	(0.004)	(0.001)	(0.008)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)
2004	-0.003	-0.004+	-0.031**	-0.014*	-0.015**	-0.016**	-0.015**	-0.014**
	(0.006)	(0.002)	(0.011)	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)
2005	0.003	-0.002	-0.029*	-0.011	-0.013*	-0.012+	-0.012+	-0.012*
	(0.007)	(0.002)	(0.013)	(0.007)	(0.006)	(0.006)	(0.006)	(0.005)
2006	0.023**	0.001	-0.02	-0.004	-0.004	-0.005	-0.005	-0.005
	(0.007)	(0.002)	(0.012)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
2007	0.043**	0.001	-0.019	-0.003	-0.002	-0.003	-0.002	-0.003
	(0.007)	(0.002)	(0.012)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
2008	0.058**	0.002	-0.017	-0.003	-0.001	-0.001	0	-0.002
	(0.008)	(0.002)	(0.012)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
2009	0.077**	0.003	-0.01	0	0.004	0.005	0.005	0.002
	(0.008)	(0.002)	(0.013)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
2010	0.093**	0.003	-0.004	0.002	0.009	0.009	0.01	0.004
	(0.008)	(0.002)	(0.013)	(0.007)	(0.007)	(0.007)	(0.006)	(0.005)
2011	0.110**	0.005+	0.006	0.008	0.014*	0.014*	0.014*	0.009
	(0.008)	(0.003)	(0.014)	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)
Month—Reference: January								
Feb	0.002*	0	-0.001	0	0	0	0	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Mar	0.004**	0	0.003*	0.001+	0.002*	0.001	0.001	0.001
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Apr	0.003**	0	0.002	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
May	0.006**	0	0.004*	0.002+	0.002*	0.002+	0.001+	0.001+
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Jun	0.008**	0.001	0.004*	0.002*	0.002**	0.002*	0.002*	0.002*
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Jul	0.009**	0.001+	0.002	0.002+	0.002*	0.002*	0.002*	0.002*
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Aug	0.010**	0.001**	0.004*	0.002*	0.003**	0.003**	0.003**	0.002**
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sep	0.010**	0	0.004+	0.002*	0.003**	0.002*	0.002*	0.002*
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Oct	0.012**	0	0.002	0.001	0.002+	0.002+	0.002+	0.001
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Nov	0.012**	0	0.004+	0.002*	0.003**	0.003**	0.003**	0.002*
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dec	0.014**	0.001*	0.004*	0.002*	0.003**	0.003**	0.003**	0.002**
	(0.001)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	-0.01	0.058**	0.331**	0.185**	0.176**	0.178**	0.166**	0.149**
	(0.022)	(0.007)	(0.036)	(0.020)	(0.020)	(0.020)	(0.019)	(0.017)
N	1533619	1533619	1533619	1533619	1533619	1533619	1533619	1533619

2. Model 2

Similar to model 1, model 2 includes individual level and unit level variables in the regression. Key changes in this model are the unit level variables. Unit level variables of divorce and demotion are changed from binary indicators of depicting at least one or more peer who are currently and post divorced or demoted to percentage variables showing the proportion of peers having such stress events. The mental health diagnosis binary indicators, which excludes the individual, are also re-classified into three categories, (1) Zero: individual with no peers having the specific mental disorders, (2) Low: individual with peers having the specific mental disorders up to the 50th percentile, and (3) High: individual with peers having the specific mental disorders from the 50th percentile onwards. The regression results for model 2 are shown in Table 21. Similar results and analysis are observed for all the individual level variables as well as the unit level variables which are unchanged, as compared to model 1. There are only very small magnitude difference, if any. Hence, this section will only focus on the results of those unit-level variables which changed.

a. Regression Results of Unit Level Variables

The variable change for divorce and demote, from binary to percentage, will show how the change in magnitude for each variable will affect the likelihood of a soldier in the unit developing mental health disorders. Possibly attributed to the low proportions of peers having such stressful events, the level of correlation reduces in significance as a one pps change might not be big enough to have an impact on likelihood of peer influence and development of mental health disorders, as compared to deployment which has a much larger sample. A 10 pps increase in number of peers who were divorced, is associated with higher likelihood of the individual developing substance misuse and alcohol misuse by 0.26 pps. On the other hand, those with peers who were currently or post demoted are associated with higher likelihood of the individual any mental disorders by 1.22 and 1.56 pps respectively, while those with peers who were

post demoted is associated with higher the likelihood of developing Anxiety by 0.56 pps.

On the care seeking and condition influence indicators, breaking the binary indicator into categorical did not reveal new insights. Model 2 is showing the same story as model 1 — we observe a similar and consistent negative trend for individuals with peers having any mental disorders excluding the specific mental disorders of interest, as well as those with peers having the specific mental disorders, compared to those with no peers havign any form of mental disorders. The only exception is in the PTSD diagnosis (exclude self) variable, which was surprisingly different, as it changes from +5.9 pps to -2.5 pps.

Table 20. Outcomes for Combat Unit Subset at the Platoon Level—Model 2

Combat Unit Subset (Fixed Effects)	Any Mental b/se	Suicide Attempt b/se	PTSD b/se	Depression b/se	Anxiety b/se	Substance Misuse b/se	Alcohol Misuse b/se	Drug Misuse b/se
Unit Variables								
Mental Health: Care Seeking vs Condition Influence Indicator—Reference: Category 0 where 0% of diagnosis								
Any Mental Disorders (Low Occurrence)	-0.059** (0.006)							
Any Mental Disorders (High Occurrence)	-0.088** (0.008)							
Suicide (Low)		-0.008** (0.001)						
Suicide (High)		-0.017** (0.001)						
Any Mental Disorders Excluding Suicide (Low)		-0.004** (0.001)						
Any Mental Disorders Excluding Suicide (High)		-0.006** (0.001)						
PTSD (Low)			-0.020** (0.003)					
PTSD (High)			-0.025** (0.004)					
Any Mental Disorders Excluding PTSD (Low)			-0.050** (0.004)					
Any Mental Disorders Excluding PTSD (High)			-0.082** (0.005)					
Depression (Low)				-0.014** (0.002)				

Combat Unit Subset (Fixed Effects)	Any Mental b/se	Suicide Attempt b/se	PTSD b/se	Depression b/se	Anxiety b/se	Substance Misuse b/se	Alcohol Misuse b/se	Drug Misuse b/se
Depression (High)				-0.032** (0.002)				
Any Mental Disorders Excluding Depression (Low)				-0.020** (0.002)				
Any Mental Disorders Excluding Depression (High)				-0.031** (0.003)				
Anxiety (Low)					-0.015** (0.002)			
Anxiety (High)					-0.027** (0.002)			
Any Mental Disorders Excluding Anxiety (Low)					-0.015** (0.002)			
Any Mental Disorders Excluding Anxiety (High)					-0.023** (0.002)			
Substance Misuse (Low)						-0.011** (0.002)		
Substance Misuse (High)						-0.024** (0.002)		
Any Mental Disorders Excluding Substance Misuse (Low)						-0.015** (0.002)		
Any Mental Disorders Excluding Substance Misuse (High)						-0.023** (0.002)		

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Alcohol Misuse (Low)							-0.010**	
							(0.002)	
Alcohol Misuse (High)							-0.024**	
							(0.002)	
Any Mental Disorders Excluding Alcohol Misuse (Low)							-0.014**	
							(0.002)	
Any Mental Disorders Excluding Alcohol Misuse (High)							-0.021**	
							(0.002)	
Drug Misuse (Low)								-0.011**
								(0.002)
Drug Misuse (High)								-0.022**
								(0.002)
Any Mental Disorders Excluding Drug Misuse (Low)								-0.012**
								(0.001)
Any Mental Disorders Excluding Drug Misuse (High)								-0.018**
								(0.002)
Stressful Event Indicator								
% Currently Deployed	-0.005	-0.003**	0.005+	-0.002	-0.002	-0.007**	-0.006**	-0.003+
	(0.005)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
% Post Deployed	0.062**	-0.001	0.042**	0.009**	0.013**	0.003	0.003	0.006*
	(0.008)	(0.001)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
% Currently Divorced	-0.009	0	0.002	0.012	0.004	0.023	0.016	-0.012
	(0.046)	(0.008)	(0.028)	(0.019)	(0.017)	(0.015)	(0.015)	(0.012)
% Post Divorced	0.036	0.001	0.03	0.009	0.017+	0.026**	0.026**	-0.003

Combat Unit Subset (Fixed Effects)	Any Mental b/se	Suicide Attempt b/se	PTSD b/se	Depression b/se	Anxiety b/se	Substance Misuse b/se	Alcohol Misuse b/se	Drug Misuse b/se
	(0.027)	(0.004)	(0.019)	(0.010)	(0.010)	(0.009)	(0.009)	(0.007)
% Currently Demoted	0.122**	0.022*	0.034	0.034	0.037*	0.035+	0.038+	0.022
	(0.046)	(0.010)	(0.027)	(0.022)	(0.018)	(0.020)	(0.020)	(0.016)
% Post Demoted	0.156**	0.028+	0.052*	0.023	0.056**	0.031	0.021	0.029
	(0.051)	(0.016)	(0.026)	(0.028)	(0.018)	(0.027)	(0.026)	(0.025)
Gender—Reference: % Male								
% Female	0.099*	0.004	0.039+	0.033*	0.031*	0.011	0.009	0.021*
	(0.038)	(0.004)	(0.021)	(0.013)	(0.014)	(0.010)	(0.010)	(0.009)
Race—Reference: % White								
% Black	-0.098**	-0.001	-0.072**	-0.008	-0.028**	-0.021**	-0.023**	-0.016*
	(0.021)	(0.003)	(0.014)	(0.009)	(0.008)	(0.008)	(0.007)	(0.007)
% Hispanic	0.042	0.011**	0.034+	0.011	0.015	0.005	0.004	-0.004
	(0.031)	(0.004)	(0.018)	(0.010)	(0.011)	(0.010)	(0.010)	(0.008)
% Asian	0.023	0.002	-0.001	0.014	-0.007	0.001	0	0.015
	(0.037)	(0.006)	(0.024)	(0.012)	(0.012)	(0.012)	(0.011)	(0.009)
% Other	-0.024	0	-0.021	0.019+	0.01	-0.012	-0.016+	0
	(0.028)	(0.004)	(0.017)	(0.011)	(0.010)	(0.009)	(0.009)	(0.009)
Rank Group—Reference: E1 to E4								
% Officer	0.045*	-0.003	0.01	-0.013+	-0.004	0.001	0.002	-0.002
	(0.022)	(0.003)	(0.015)	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)
% E5 and above	0.071**	0.001	0.037**	0.003	0.005	0.010*	0.011*	0.005
	(0.015)	(0.002)	(0.009)	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)
MOS—Reference: Combat								
% Not Combat	0.006	0.001	-0.012	0.008	-0.001	0.009	0.004	-0.001
	(0.018)	(0.003)	(0.011)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)
AFQT Score Category—Reference: Category 1 (0 to 30, including missing AFQT)								
% AFQT CAT 2 (31 to 50)	0.128**	-0.004	0.102**	0.006	0.015	0.015	0.012	0.006
	(0.027)	(0.003)	(0.020)	(0.009)	(0.010)	(0.010)	(0.009)	(0.007)
% AFQT CAT 3 (51 to 65)	0.093**	-0.003	0.081**	0.003	0.008	0.016+	0.013+	0.009

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
	(0.028)	(0.003)	(0.020)	(0.008)	(0.009)	(0.009)	(0.008)	(0.006)
% AFQT CAT 4 (66 to 93)	0.053*	0	0.054**	0	0.009	0.003	0.002	-0.003
	(0.026)	(0.003)	(0.017)	(0.008)	(0.008)	(0.008)	(0.007)	(0.006)
% AFQT CAT 5 (>93)	-0.005	-0.005	0.032	-0.018	-0.015	0.001	0	0.003
	(0.036)	(0.004)	(0.023)	(0.012)	(0.011)	(0.012)	(0.011)	(0.010)
Year—Reference: Year 2002								
2003	0.002	0	-0.001	0.002	-0.001	0	-0.001	-0.001
	(0.004)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)
2004	-0.002	0.001	-0.005+	0.003	-0.001	-0.003	-0.004+	-0.002
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
2005	0.005	0.002	-0.005	0.005+	-0.001	-0.001	-0.001	-0.002
	(0.007)	(0.001)	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)
2006	0.030**	0.003*	0.009*	0.010**	0.006*	0.004	0.003	0.003
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
2007	0.053**	0.005**	0.025**	0.014**	0.011**	0.010**	0.009**	0.008**
	(0.008)	(0.001)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
2008	0.070**	0.005**	0.036**	0.016**	0.014**	0.014**	0.013**	0.009**
	(0.009)	(0.002)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
2009	0.090**	0.006**	0.045**	0.018**	0.020**	0.020**	0.019**	0.013**
	(0.009)	(0.002)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
2010	0.108**	0.006**	0.052**	0.019**	0.023**	0.024**	0.023**	0.015**
	(0.009)	(0.002)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
2011	0.126**	0.006**	0.054**	0.020**	0.025**	0.025**	0.024**	0.016**
	(0.010)	(0.002)	(0.006)	(0.004)	(0.003)	(0.004)	(0.004)	(0.003)
Month—Reference: January								
Feb	0.002*	0	0.001*	0	0	0	0	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mar	0.004**	0	0.002**	0.001	0.001**	0	0	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Apr	0.004**	0	0.001+	0	0.001	0	0	0.001
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)

Combat Unit Subset (Fixed Effects)	Any Mental	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse	Alcohol Misuse	Drug Misuse
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
May	0.007** (0.001)	0 (0.000)	0.003** (0.001)	0.001 (0.001)	0.001* (0.000)	0.001 (0.001)	0.001 (0.000)	0.001 (0.000)
Jun	0.009** (0.001)	0 (0.000)	0.004** (0.001)	0.001* (0.001)	0.002** (0.001)	0.001* (0.001)	0.001** (0.001)	0.001** (0.000)
Jul	0.010** (0.001)	0.001* (0.000)	0.005** (0.001)	0.002** (0.001)	0.003** (0.001)	0.003** (0.001)	0.002** (0.001)	0.002** (0.000)
Aug	0.012** (0.001)	0.001* (0.000)	0.006** (0.001)	0.003** (0.001)	0.002** (0.001)	0.003** (0.001)	0.003** (0.001)	0.002** (0.000)
Sep	0.011** (0.001)	0 (0.000)	0.005** (0.001)	0.003** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.000)	0.002** (0.000)
Oct	0.014** (0.001)	0 (0.000)	0.006** (0.001)	0.002** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.002** (0.000)
Nov	0.014** (0.001)	0 (0.000)	0.006** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.002** (0.000)
Dec	0.016** (0.001)	0.001** (0.000)	0.007** (0.001)	0.003** (0.001)	0.004** (0.000)	0.003** (0.000)	0.003** (0.000)	0.002** (0.000)
_cons	-0.016 (0.024)	0.008** (0.002)	-0.025 (0.017)	0.020** (0.007)	0.01 (0.007)	0.013+ (0.008)	0.012+ (0.007)	0.014* (0.006)
N	1533619	1533619	1533619	1533619	1533619	1533619	1533619	1533619

V. CONCLUSION AND RECOMMENDATIONS

For the unit level analysis, we examine four distinctive peer groups. We consistently find that an increase in the proportion of female soldiers and those deployed, and units with at least one soldier who experienced stressful events in personal life, such as divorce or demote, are associated with an increase in both the likelihood of an individual being diagnosed with mental disorders and the percentage of individuals being diagnosed with mental disorders in that unit. These trends are likely due to the possibilities that females in general are more likely to report and seek for care vis-à-vis males. Of note, demotion episodes, though less relevant to the officers, are positively associated with mental health diagnoses among the enlisted. On the other hand, an increase in the proportion of non-White soldiers, non-Combat MOS soldiers, and high AFQT soldiers (scoring >93), are associated with lower likelihood of having soldiers with mental health disorders in the unit. While the trends are not as distinct for MOS and AFQT, variations in race could be possibly attributed to Asians being more conservative, and Blacks being more wary of racial discrimination in seeking for care.

There appear to be systematic variations in unit level mental health diagnoses by geographical locations of the units, but further research is needed to determine why this variation exists. Units in New England, East North Central, West North Central regions and other locations outside the U.S., are associated with a decrease in both the likelihood of an individual being diagnosed with mental disorders and the percentage of individuals being diagnosed with mental disorders, while units in South Atlantic, West South Central regions and military locations, are associated with an increase in contrast. Large unit sizes on the other hand, are associated with an increase in the likelihood of an individual being diagnosed with mental disorders but a decrease in the percentage of individuals being diagnosed with mental disorders, which is logical given the concept of probability and percentage changes with a larger denominator.

For the individual level analysis, similar results and trends to the unit level analysis are observed for the individual-level variables like demographics (gender and race), service specifics (rank group, MOS and AFQT), and stress event indicators (divorce and demotion). However, the same types of unit level variables with the exception of stressful event indicators, do not seemed to exhibit similar trends possibly due to the small sample size distribution. Care seeking and condition influence variables showed consistent negative trends across the two models. Having one or more peers with mental disorders are not associated with an increase in the likelihood of an individual developing mental disorders, except PTSD which showed otherwise as it is more likely to be attributed to common traumatic events coupled with the harsh environment that soldiers who were deployed can share and relate to. As discussed previously, such outcomes could be due to internal control measures and culture of the U.S. Army, where there is a robust system to manage soldiers with mental disorders and reduce the chances of new occurrences or implementing tighter measures whenever more cases are reported (a typical military reaction to situations). On the other hand, negative trends for having peers with any mental disorders excluding the specific mental disorders of interest, could be suggesting the correlation of same condition influence, where for instance having peers attempting suicides will likely increase the likelihood of one attempting suicide, but not for the case where likelihood of one attempting suicide is increased by those having other mental disorders.

In summary, trends and findings from the unit level analysis are consistent with results from the individual level analysis. Female soldiers, non-White soldiers, non-combat MOS soldiers and those with lower AFQT scores are generally observed to exhibit higher tendencies in being diagnosed with mental disorders. On the other hand, having one or more peers with mental disorders are not associated with an increase in the likelihood of an individual developing mental disorders, but having peers who has or had stressful events like deployment, divorce and demotion are. Results also suggested similar outcomes

when the individual him/herself experienced such events. While geographical variables suggested variations across different unit locations, further research would need to be done to determine why these variation exist. Moving ahead, it is recommended to (1) expand the study to understand and scrutinize the internal control measures and policies on handling mental health disorders in the U.S. Army, and (2) obtain more information on the missing unit locations and unit types in the respective regions, which will support a more in-depth analysis on the variations observed across geographical locations. It is also recommended to review manpower policies to facilitate better management in handling soldiers who are experiencing or have experienced stressful events like deployment, divorce and demotion, in order to lower the likelihood of the individual in developing mental disorders.

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APPENDIX. UNIT LEVEL ANALYSIS: RESULTS OF FIXED EFFECT REGRESSION

A. OFFICERS AT THE COMPANY LEVEL

Table 21. Outcomes (FE) for Officers at the Company Level—Model 1

Model 1: Officer (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.125**	0.003+	0.030**	0.061**	0.029**	-0.003
	(0.012)	(0.002)	(0.008)	(0.007)	(0.006)	(0.003)
Race—Reference: % White						
% Black	-0.008	-0.001	0.001	-0.017**	-0.007	-0.007+
	(0.012)	(0.001)	(0.007)	(0.006)	(0.005)	(0.004)
% Hispanic	-0.004	-0.002	0.017	-0.018	-0.014	-0.005
	(0.023)	(0.002)	(0.014)	(0.012)	(0.010)	(0.006)
% Asian	-0.075**	0	-0.025*	-0.027*	-0.013	-0.01
	(0.020)	(0.002)	(0.011)	(0.010)	(0.009)	(0.007)
% Other Race	0.054**	0.002	0.035**	-0.003	-0.016*	-0.005
	(0.018)	(0.002)	(0.012)	(0.009)	(0.008)	(0.005)
MOS—Reference: % Combat MOS						
% Aviation	0.01	-0.009*	-0.040*	0.007	0	-0.004
	(0.027)	(0.005)	(0.017)	(0.016)	(0.012)	(0.009)
% Medical	0.057**	0.001	0.008	0.026*	0.019*	0.021**
	(0.021)	(0.004)	(0.013)	(0.012)	(0.009)	(0.007)
% Combat Service	-0.01	0.002	-0.026*	0.002	-0.015+	-0.006
	(0.016)	(0.003)	(0.011)	(0.009)	(0.008)	(0.005)
% Service Support	0.019	0.001	-0.006	0.011	0.014*	0.009*
	(0.015)	(0.002)	(0.010)	(0.008)	(0.007)	(0.004)
% Other MOS	0.035**	0.002	-0.003	-0.005	0.004	0.006+
	(0.013)	(0.002)	(0.008)	(0.007)	(0.006)	(0.004)
Stressful Event Indicator						
% Currently Deployed	0.024**	0	0.036**	0	0.005+	0.001
	(0.007)	(0.001)	(0.004)	(0.004)	(0.003)	(0.002)
% Post Deployed	0.100**	0.001	0.093**	0.019**	0.018**	0.009**
	(0.008)	(0.001)	(0.005)	(0.005)	(0.004)	(0.003)
Currently Divorced	0.025**	0.001+	0.004	0.011**	0.005+	0.005**
	(0.004)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Post Divorced	0.073**	0.001+	0.027**	0.024**	0.016**	0.008**
	(0.004)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)

Model 1: Officer (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Currently Demoted	-0.001	0.002	-0.013+	-0.008	-0.005	0.001
	(0.011)	(0.002)	(0.007)	(0.007)	(0.006)	(0.004)
Post Demoted	0.009	0	0.004	-0.013+	-0.01	-0.002
	(0.012)	(0.002)	(0.009)	(0.008)	(0.007)	(0.005)
Unit Size Category—Reference: Category 1 (<4 Officers)						
Size CAT 2 (4 to 8)	0.111**	0.001+	0.033**	0.026**	0.018**	0.007**
	(0.004)	(0.000)	(0.002)	(0.002)	(0.002)	(0.001)
Size CAT 3 (>8)	0.291**	0.004**	0.091**	0.078**	0.051**	0.026**
	(0.006)	(0.001)	(0.004)	(0.004)	(0.003)	(0.002)
Year—Reference: Year 2002						
2003	0.015**	0.001*	-0.005*	0.001	0.002	0
	(0.005)	(0.000)	(0.002)	(0.003)	(0.002)	(0.001)
2004	0.026**	0.001	-0.008*	0.006	0.004	-0.002
	(0.007)	(0.001)	(0.003)	(0.004)	(0.003)	(0.002)
2005	0.061**	0.002*	0.004	0.013**	0.008*	-0.003
	(0.008)	(0.001)	(0.004)	(0.005)	(0.003)	(0.003)
2006	0.090**	0.003**	0.018**	0.021**	0.014**	0.002
	(0.008)	(0.001)	(0.004)	(0.005)	(0.004)	(0.003)
2007	0.126**	0.004**	0.044**	0.024**	0.023**	0.005
	(0.009)	(0.001)	(0.005)	(0.005)	(0.004)	(0.003)
2008	0.158**	0.004**	0.073**	0.027**	0.030**	0.007*
	(0.009)	(0.001)	(0.005)	(0.005)	(0.004)	(0.003)
2009	0.191**	0.005**	0.101**	0.035**	0.045**	0.011**
	(0.009)	(0.001)	(0.005)	(0.006)	(0.004)	(0.003)
2010	0.235**	0.006**	0.117**	0.045**	0.060**	0.019**
	(0.010)	(0.001)	(0.006)	(0.006)	(0.005)	(0.003)
2011	0.257**	0.008**	0.124**	0.054**	0.071**	0.028**
	(0.010)	(0.001)	(0.006)	(0.006)	(0.005)	(0.004)
Month—Reference: January						
Feb	0.004**	0	0.001**	0.001	0.001	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Mar	0.005**	0	0.003**	0.002**	0.001*	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Apr	0.005**	0	0.002**	0.002**	0.002**	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
May	0.008**	0	0.004**	0.003**	0.004**	0.001+
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Jun	0.011**	0.001*	0.006**	0.004**	0.004**	0.001**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Jul	0.013**	0.001*	0.006**	0.003**	0.005**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Aug	0.014**	0.001**	0.008**	0.004**	0.005**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)

Model 1: Officer (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Sep	0.017** (0.001)	0.001** (0.000)	0.009** (0.001)	0.004** (0.001)	0.006** (0.001)	0.002** (0.001)
Oct	0.021** (0.001)	0.001** (0.000)	0.011** (0.001)	0.004** (0.001)	0.006** (0.001)	0.003** (0.001)
Nov	0.024** (0.001)	0.001** (0.000)	0.013** (0.001)	0.005** (0.001)	0.007** (0.001)	0.003** (0.000)
Dec	0.028** (0.001)	0.001** (0.000)	0.015** (0.001)	0.006** (0.001)	0.008** (0.001)	0.003** (0.000)
Constant	-0.034** (0.012)	-0.003+ (0.002)	-0.049** (0.008)	-0.011 (0.007)	-0.022** (0.006)	-0.005 (0.004)
N	693413	693413	693413	693413	693413	693413

Table 22. Outcomes (FE) for Officers at the Company Level—Model 2

Model 2: % Officer (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.042** (0.004)	0.001+ (0.000)	0.007** (0.002)	0.013** (0.002)	0.007** (0.002)	-0.001 (0.001)
Race—Reference: % White						
% Black	-0.004 (0.004)	0 (0.000)	0 (0.002)	-0.005** (0.001)	-0.003* (0.001)	-0.002* (0.001)
% Hispanic	0.006 (0.008)	0 (0.001)	0.003 (0.004)	-0.006+ (0.003)	-0.001 (0.003)	-0.002 (0.001)
% Asian	-0.018** (0.007)	0 (0.001)	-0.005+ (0.003)	-0.005+ (0.003)	0 (0.003)	-0.001 (0.002)
% Other Race	0.022** (0.006)	0 (0.001)	0.011** (0.004)	0 (0.002)	-0.002 (0.002)	-0.001 (0.001)
MOS—Reference: % Combat MOS						
% Aviation	0.004 (0.008)	-0.001 (0.001)	-0.006 (0.004)	0.001 (0.003)	0.003 (0.002)	0.001 (0.001)
% Medical	0.012+ (0.007)	0 (0.001)	0.002 (0.004)	0.004 (0.003)	0.005* (0.002)	0.003* (0.001)
% Combat Service	-0.008 (0.005)	0 (0.001)	-0.005+ (0.003)	0 (0.002)	-0.002 (0.002)	-0.001 (0.001)
% Service Support	0.002 (0.005)	-0.001 (0.001)	-0.001 (0.003)	0 (0.002)	0.005** (0.002)	0.002+ (0.001)
% Other MOS	0.004 (0.004)	0 (0.001)	-0.001 (0.002)	-0.004* (0.002)	0.001 (0.001)	0.001 (0.001)

Model 2: % Officer (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Stressful Event Indicator						
% Currently Deployed	0.007**	0	0.007**	0	0.001	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
% Post Deployed	0.033**	0	0.018**	0.003**	0.003**	0.001**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Currently Divorced	0.001+	0	0	0	0	0
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Divorced	0.010**	0	0.002**	0.002**	0.001*	0.001**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Currently Demoted	-0.001	0	-0.002*	-0.001*	-0.001	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Post Demoted	-0.003	0	0	-0.002+	-0.001	0
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Unit Size Category—Reference: Category 1 (<4 Officers)						
Size CAT 2 (4 to 8)	-0.006**	0	-0.002*	0	0	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Size CAT 3 (>8)	-0.010**	0	-0.004**	-0.002*	-0.001*	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Year—Reference: Year 2002						
2003	0.002	0	-0.002**	0	0	0
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
2004	0.002	0	-0.003**	0	0	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
2005	0.008**	0	-0.002**	0.001	0.001	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2006	0.015**	0.000*	-0.002+	0.002**	0.001*	0
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2007	0.023**	0.000**	0.002*	0.003**	0.002**	0.001
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2008	0.032**	0.000**	0.006**	0.003**	0.003**	0.001+
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2009	0.043**	0.001**	0.009**	0.005**	0.005**	0.001**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2010	0.057**	0.001**	0.012**	0.005**	0.006**	0.002**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
2011	0.067**	0.001**	0.013**	0.006**	0.008**	0.003**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Month—Reference: January						
Feb	0.001**	0	0	0	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mar	0.002**	0	0.000*	0	0.000+	0.000+

Model 2: % Officer (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Apr	0.001**	0	0	0	0.000*	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
May	0.002**	0	0.000**	0.000+	0.000**	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Jun	0.003**	0	0.001**	0.000*	0.001**	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Jul	0.003**	0	0.001**	0.000+	0.001**	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Aug	0.004**	0	0.001**	0.000**	0.001**	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Sep	0.004**	0	0.001**	0.000**	0.001**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Oct	0.005**	0.000*	0.001**	0.000**	0.001**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nov	0.007**	0.000+	0.001**	0.001**	0.001**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Dec	0.008**	0.000**	0.002**	0.001**	0.001**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.015**	0	0.003+	0.005**	-0.001	0.001
	(0.004)	(0.000)	(0.002)	(0.002)	(0.001)	(0.001)
N	693413	693413	693413	693413	693413	693413

B. SENIOR ENLISTED AT THE COMPANY LEVEL

Table 23. Outcomes (FE) for Senior Enlisted at the Company Level—
Model 1

Model 1: Senior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.132**	0.009**	0.031**	0.112**	0.051**	-0.015*
	(0.014)	(0.004)	(0.011)	(0.011)	(0.009)	(0.007)
Race—Reference: % White						
% Black	-0.043**	-0.009*	-0.063**	-0.054**	-0.070**	-0.042**
	(0.013)	(0.004)	(0.011)	(0.010)	(0.009)	(0.007)
% Hispanic	-0.035	0.019**	0.062**	0.033+	0.034*	0.018
	(0.023)	(0.007)	(0.020)	(0.018)	(0.016)	(0.013)
% Asian	-0.090**	0.012	-0.026	-0.058**	-0.033+	-0.015
	(0.027)	(0.009)	(0.024)	(0.021)	(0.019)	(0.016)
% Other Race	0.029	-0.014**	-0.042**	0.016	-0.051**	-0.034**
	(0.019)	(0.006)	(0.016)	(0.014)	(0.012)	(0.011)
MOS—Reference: % Combat MOS						
% Aviation	-0.026	-0.013	-0.186**	-0.091**	-0.098**	-0.023
	(0.037)	(0.013)	(0.032)	(0.032)	(0.027)	(0.029)
% Medical	-0.033+	-0.011	-0.068**	-0.022	-0.013	-0.031*
	(0.020)	(0.007)	(0.019)	(0.017)	(0.016)	(0.015)
% Combat Service	-0.046*	-0.007	-0.070**	-0.033+	-0.02	-0.011
	(0.020)	(0.007)	(0.019)	(0.017)	(0.016)	(0.015)
% Service Support	-0.056**	-0.006	-0.067**	-0.023	-0.015	-0.018
	(0.017)	(0.006)	(0.016)	(0.014)	(0.013)	(0.013)
% Other MOS	-0.025	-0.009	-0.058**	-0.009	-0.005	-0.023+
	(0.015)	(0.006)	(0.015)	(0.014)	(0.013)	(0.013)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.060**	-0.004	0.027*	0.005	0.008	0.013
	(0.015)	(0.004)	(0.012)	(0.011)	(0.010)	(0.009)
% AFQT CAT 3 (51 to 65)	0.038*	0.004	0.003	-0.006	-0.009	0.001
	(0.015)	(0.004)	(0.012)	(0.011)	(0.010)	(0.008)
% AFQT CAT 4 (66 to 93)	0.044**	0	-0.014	-0.009	-0.018+	-0.006
	(0.014)	(0.004)	(0.012)	(0.011)	(0.009)	(0.008)
% AFQT CAT 5 (>93)	-0.025	0.001	-0.067**	-0.034+	-0.039*	-0.041**
	(0.026)	(0.007)	(0.021)	(0.020)	(0.016)	(0.015)
Stressful Event Indicator						
% Currently	0.005	-0.016**	0.031**	-0.051**	-0.043**	-0.047**

Model 1: Senior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Deployed						
	(0.007)	(0.003)	(0.007)	(0.006)	(0.006)	(0.005)
% Post Deployed	0.047**	-0.003	0.141**	0.009	0.032**	0.001
	(0.009)	(0.003)	(0.008)	(0.008)	(0.007)	(0.006)
Currently Divorced	0.013**	0.008**	0.018**	0.022**	0.019**	0.019**
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Post Divorced	0.099**	0.003*	0.057**	0.034**	0.028**	0.017**
	(0.004)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
Currently Demoted	0.017**	0.012**	0.021**	0.014*	0.014*	0.035**
	(0.004)	(0.004)	(0.006)	(0.007)	(0.006)	(0.006)
Post Demoted	0.014*	0.007+	0.011	0.013	0.012+	0.029**
	(0.006)	(0.004)	(0.008)	(0.009)	(0.007)	(0.006)
Unit Size Category—Reference: Category 1 (<14 Senior Enlisted)						
Size CAT 2 (14 to 18)	0.183**	0.012**	0.123**	0.102**	0.069**	0.051**
	(0.005)	(0.002)	(0.005)	(0.005)	(0.004)	(0.004)
Size CAT 3 (>18)	0.286**	0.029**	0.239**	0.224**	0.165**	0.129**
	(0.005)	(0.002)	(0.006)	(0.006)	(0.005)	(0.004)
Year—Reference: Year 2002						
2003	0.028**	0.006**	0.016**	0.021**	0.026**	0.023**
	(0.005)	(0.001)	(0.004)	(0.004)	(0.003)	(0.003)
2004	0.047**	0.008**	0.036**	0.038**	0.037**	0.028**
	(0.007)	(0.002)	(0.006)	(0.006)	(0.005)	(0.005)
2005	0.089**	0.014**	0.078**	0.066**	0.062**	0.038**
	(0.008)	(0.002)	(0.007)	(0.007)	(0.006)	(0.005)
2006	0.120**	0.022**	0.126**	0.085**	0.093**	0.062**
	(0.009)	(0.003)	(0.007)	(0.008)	(0.006)	(0.006)
2007	0.153**	0.031**	0.211**	0.117**	0.127**	0.089**
	(0.009)	(0.003)	(0.008)	(0.008)	(0.007)	(0.007)
2008	0.187**	0.039**	0.288**	0.141**	0.162**	0.115**
	(0.009)	(0.003)	(0.009)	(0.009)	(0.007)	(0.007)
2009	0.213**	0.047**	0.337**	0.165**	0.209**	0.148**
	(0.010)	(0.004)	(0.009)	(0.009)	(0.008)	(0.008)
2010	0.233**	0.055**	0.358**	0.187**	0.249**	0.183**
	(0.010)	(0.004)	(0.009)	(0.009)	(0.008)	(0.008)
2011	0.256**	0.062**	0.376**	0.204**	0.280**	0.207**
	(0.010)	(0.004)	(0.010)	(0.010)	(0.009)	(0.008)
Month—Reference: January						
Feb	0.002**	0.001**	0.003**	0.003**	0.002**	0.001+
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mar	0.005**	0.001**	0.007**	0.005**	0.005**	0.003**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Apr	0.007**	0.002**	0.008**	0.007**	0.006**	0.005**

Model 1: Senior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
May	0.009**	0.003**	0.012**	0.008**	0.010**	0.006**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Jun	0.012**	0.003**	0.016**	0.010**	0.013**	0.008**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Jul	0.014**	0.004**	0.019**	0.012**	0.015**	0.010**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Aug	0.017**	0.005**	0.024**	0.013**	0.017**	0.011**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sep	0.020**	0.005**	0.027**	0.015**	0.019**	0.013**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Oct	0.022**	0.005**	0.034**	0.018**	0.024**	0.017**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Nov	0.024**	0.006**	0.038**	0.020**	0.027**	0.019**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dec	0.026**	0.007**	0.042**	0.022**	0.030**	0.021**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.295**	-0.004	-0.004	0.032*	-0.024*	0.01
	(0.016)	(0.006)	(0.015)	(0.014)	(0.012)	(0.012)
N	796858	796858	796858	796858	796858	796858

Table 24. Outcomes (FE) for Senior Enlisted at the Company Level—
Model 2

Model 2: % Senior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.068**	0.001	0.005	0.021**	0.008**	-0.005**
	(0.006)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)
Race—Reference: % White						
% Black	-0.045**	0	-0.018**	-0.009**	-0.009**	-0.005**
	(0.005)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
% Hispanic	-0.019*	0.001	0.005	0.003	0.002	-0.003
	(0.009)	(0.001)	(0.005)	(0.004)	(0.003)	(0.002)
% Asian	-0.061**	-0.001	-0.018**	-0.010*	-0.007+	-0.005
	(0.011)	(0.001)	(0.006)	(0.005)	(0.004)	(0.003)
% Other Race	-0.014+	-0.001	-0.011*	0.003	-0.006*	0.001
	(0.008)	(0.001)	(0.005)	(0.004)	(0.003)	(0.003)
MOS—Reference: % Combat MOS						
% Aviation	-0.047**	0.001	-0.041**	-0.011*	-0.010**	-0.002

Model 2: % Senior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.013)	(0.002)	(0.006)	(0.004)	(0.003)	(0.004)
% Medical	-0.006	-0.001	-0.016**	0	-0.002	-0.005*
	(0.008)	(0.001)	(0.005)	(0.004)	(0.003)	(0.002)
% Combat Service	-0.024**	-0.001	-0.019**	-0.008*	-0.003	-0.004+
	(0.008)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
% Service Support	-0.018**	0	-0.017**	0	-0.001	-0.003
	(0.007)	(0.001)	(0.004)	(0.003)	(0.002)	(0.002)
% Other MOS	-0.010+	0	-0.012**	0.002	0.002	-0.003
	(0.006)	(0.001)	(0.004)	(0.002)	(0.002)	(0.002)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.010+	0	0.005	0.002	0.003	0.003+
	(0.006)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 3 (51 to 65)	-0.002	0	-0.004	-0.004	-0.001	0.002
	(0.006)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 4 (66 to 93)	-0.011+	0.001*	-0.008**	-0.004	-0.003	0.001
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
% AFQT CAT 5 (>93)	-0.049**	-0.001	-0.025**	-0.006	-0.011**	-0.007**
	(0.010)	(0.001)	(0.005)	(0.004)	(0.003)	(0.003)
Stressful Event Indicator						
% Currently Deployed	-0.022**	-0.001*	0.004**	-0.006**	-0.004**	-0.003**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
% Post Deployed	0.029**	0	0.032**	0	0.004**	0.001
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
Currently Divorced	0.002**	0.000**	0	0	0	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Divorced	0.008**	0	0.001+	0	0.001+	0.001
	(0.002)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Currently Demoted	0.006**	0	0.003**	0.001	0.001*	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Post Demoted	0.005**	0	0.003**	0.001	0.001*	0.002**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Unit Size Category—Reference: Category 1 (<14 Senior Enlisted)						
Size CAT 2 (14 to 18)	-0.016**	0	-0.005**	-0.004**	-0.003**	-0.001*
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Size CAT 3 (>18)	-0.024**	-0.000*	-0.008**	-0.005**	-0.003**	-0.001**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Year—Reference: Year 2002						

Model 2: % Senior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
2003	0.018** (0.001)	0 (0.000)	0.001 (0.001)	0.004** (0.001)	0.002** (0.000)	0.001** (0.000)
2004	0.025** (0.002)	0 (0.000)	0 (0.001)	0.004** (0.001)	0.003** (0.001)	0.001+ (0.001)
2005	0.041** (0.002)	0.000+ (0.000)	0.003* (0.001)	0.007** (0.001)	0.004** (0.001)	0.001* (0.001)
2006	0.061** (0.003)	0.001** (0.000)	0.008** (0.001)	0.009** (0.001)	0.006** (0.001)	0.003** (0.001)
2007	0.085** (0.003)	0.001** (0.000)	0.020** (0.001)	0.013** (0.001)	0.009** (0.001)	0.005** (0.001)
2008	0.111** (0.003)	0.002** (0.000)	0.032** (0.002)	0.015** (0.001)	0.012** (0.001)	0.006** (0.001)
2009	0.137** (0.003)	0.002** (0.000)	0.042** (0.002)	0.018** (0.001)	0.015** (0.001)	0.008** (0.001)
2010	0.163** (0.003)	0.003** (0.000)	0.050** (0.002)	0.020** (0.001)	0.020** (0.001)	0.012** (0.001)
2011	0.186** (0.004)	0.003** (0.000)	0.053** (0.002)	0.023** (0.001)	0.024** (0.001)	0.013** (0.001)
Month—Reference: January						
Feb	0.002** (0.000)	0.000** (0.000)	0.001** (0.000)	0.000* (0.000)	0.000** (0.000)	0.000* (0.000)
Mar	0.004** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.000** (0.000)
Apr	0.005** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
May	0.007** (0.000)	0.000** (0.000)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Jun	0.009** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Jul	0.010** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Aug	0.012** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Sep	0.014** (0.000)	0.000** (0.000)	0.004** (0.000)	0.002** (0.000)	0.002** (0.000)	0.001** (0.000)
Oct	0.016** (0.000)	0.000** (0.000)	0.005** (0.000)	0.002** (0.000)	0.002** (0.000)	0.001** (0.000)
Nov	0.018** (0.000)	0.000** (0.000)	0.005** (0.000)	0.002** (0.000)	0.002** (0.000)	0.001** (0.000)
Dec	0.020** (0.000)	0.000** (0.000)	0.006** (0.000)	0.003** (0.000)	0.003** (0.000)	0.002** (0.000)
Constant	0.063** (0.006)	0 (0.001)	0.026** (0.003)	0.011** (0.003)	0.006** (0.002)	0.007** (0.002)
N	796858	796858	796858	796858	796858	796858

C. JUNIOR ENLISTED AT THE PLATOON LEVEL

Table 25. Outcomes (FE) for Junior Enlisted at the Platoon Level—
Model 1

Model 1: Junior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.143**	0.015**	0.039**	0.068**	0.044**	-0.018**
	(0.008)	(0.003)	(0.006)	(0.006)	(0.005)	(0.005)
Race—Reference: % White						
% Black	-0.078**	-0.018**	-0.065**	-0.037**	-0.057**	-0.033**
	(0.009)	(0.003)	(0.007)	(0.006)	(0.006)	(0.005)
% Hispanic	-0.082**	-0.005	-0.048**	-0.030**	-0.032**	-0.021**
	(0.013)	(0.005)	(0.009)	(0.009)	(0.008)	(0.007)
% Asian	-0.155**	0.003	-0.048**	-0.009	-0.014	0.019*
	(0.015)	(0.006)	(0.011)	(0.010)	(0.009)	(0.009)
% Other Race	-0.046**	-0.023**	-0.057**	-0.018+	-0.030**	-0.005
	(0.016)	(0.006)	(0.011)	(0.010)	(0.010)	(0.009)
MOS—Reference: % Combat MOS						
% Aviation	-0.084**	-0.016	-0.089**	-0.019	-0.039*	-0.036*
	(0.021)	(0.011)	(0.019)	(0.018)	(0.016)	(0.017)
% Medical	0.005	-0.004	-0.056**	-0.020*	-0.022*	-0.021*
	(0.012)	(0.007)	(0.010)	(0.010)	(0.009)	(0.009)
% Combat Service	-0.030*	-0.005	-0.055**	-0.027**	-0.022*	-0.019*
	(0.012)	(0.007)	(0.010)	(0.010)	(0.009)	(0.009)
% Service Support	-0.001	-0.010+	-0.055**	-0.007	-0.018*	-0.026**
	(0.011)	(0.005)	(0.008)	(0.008)	(0.008)	(0.008)
% Other MOS	0.032**	-0.023**	-0.051**	-0.019*	-0.031**	-0.032**
	(0.010)	(0.006)	(0.008)	(0.008)	(0.007)	(0.008)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	-0.024	-0.015**	-0.032**	-0.030**	-0.026**	-0.040**
	(0.017)	(0.005)	(0.011)	(0.011)	(0.009)	(0.009)
% AFQT CAT 3 (51 to 65)	-0.01	-0.022**	-0.051**	-0.033**	-0.039**	-0.058**
	(0.017)	(0.005)	(0.011)	(0.011)	(0.009)	(0.009)
% AFQT CAT 4 (66 to 93)	-0.040*	-0.017**	-0.065**	-0.030**	-0.039**	-0.049**
	(0.017)	(0.005)	(0.011)	(0.011)	(0.009)	(0.009)
% AFQT CAT 5 (>93)	-0.095**	-0.020**	-0.079**	-0.059**	-0.050**	-0.071**
	(0.022)	(0.007)	(0.015)	(0.014)	(0.012)	(0.012)
Stressful Event Indicator						
% Currently	0.040**	-0.046**	0.034**	-0.052**	-0.057**	-0.056**

Model 1: Junior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Deployed						
	(0.005)	(0.003)	(0.005)	(0.004)	(0.004)	(0.004)
% Post Deployed	0.127**	-0.005	0.163**	0.043**	0.049**	0.033**
	(0.006)	(0.003)	(0.006)	(0.005)	(0.005)	(0.004)
Currently Divorced	0.005**	0.020**	0.029**	0.031**	0.030**	0.027**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Post Divorced	0.069**	0.022**	0.071**	0.057**	0.053**	0.044**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Currently Demoted	0.026**	0.018**	0.023**	0.031**	0.027**	0.035**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Post Demoted	0.040**	0.019**	0.036**	0.037**	0.032**	0.040**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Unit Size Category—Reference: Category 1 (<13 Junior Enlisted)						
Size CAT 2 (13 to 39)	0.258**	0.038**	0.129**	0.113**	0.097**	0.076**
	(0.004)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Size CAT 3 (>39)	0.343**	0.119**	0.271**	0.261**	0.229**	0.208**
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Year—Reference: Year 2002						
2003	0.016**	0.010**	-0.002	0.009**	0.008**	-0.005+
	(0.004)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
2004	0.039**	0.020**	0.010*	0.012**	0.025**	-0.013**
	(0.005)	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)
2005	0.073**	0.030**	0.037**	0.033**	0.051**	-0.002
	(0.006)	(0.003)	(0.005)	(0.005)	(0.004)	(0.004)
2006	0.107**	0.042**	0.057**	0.038**	0.072**	0.024**
	(0.006)	(0.003)	(0.005)	(0.005)	(0.004)	(0.004)
2007	0.151**	0.056**	0.116**	0.052**	0.094**	0.051**
	(0.006)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)
2008	0.183**	0.067**	0.157**	0.061**	0.120**	0.072**
	(0.006)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)
2009	0.205**	0.072**	0.171**	0.071**	0.139**	0.098**
	(0.006)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)
2010	0.228**	0.073**	0.180**	0.084**	0.157**	0.125**
	(0.007)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)
2011	0.250**	0.078**	0.188**	0.093**	0.166**	0.134**
	(0.007)	(0.004)	(0.006)	(0.006)	(0.006)	(0.006)
Month—Reference: January						
Feb	0.002**	0.001*	0.002**	0.001	0.002**	0.001+
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mar	0.005**	0.001**	0.004**	0.001	0.004**	0.003**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Apr	0.007**	0.002**	0.003**	0	0.004**	0.002**

Model 1: Junior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
May	0.011**	0.003**	0.006**	0.002*	0.007**	0.005**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Jun	0.014**	0.004**	0.008**	0.003**	0.009**	0.006**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Jul	0.017**	0.004**	0.010**	0.004**	0.010**	0.006**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Aug	0.019**	0.004**	0.012**	0.005**	0.011**	0.008**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sep	0.020**	0.004**	0.014**	0.005**	0.011**	0.008**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Oct	0.023**	0.005**	0.015**	0.006**	0.013**	0.010**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Nov	0.025**	0.006**	0.017**	0.007**	0.014**	0.011**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dec	0.028**	0.007**	0.022**	0.010**	0.017**	0.014**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.296**	0.012+	0.085**	0.079**	0.038**	0.096**
	(0.018)	(0.007)	(0.013)	(0.012)	(0.011)	(0.011)
N	1291165	1291165	1291165	1291165	1291165	1291165

Table 26. Outcomes (FE) for Junior Enlisted at the Platoon Level—
Model 2

Model 2: % Junior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.065**	0.002**	0.006**	0.013**	0.010**	-0.005**
	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Race—Reference: % White						
% Black	-0.046**	-0.002**	-0.015**	-0.008**	-0.012**	-0.006**
	(0.004)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
% Hispanic	-0.047**	-0.001	-0.011**	-0.008**	-0.008**	-0.004*
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
% Asian	-0.058**	-0.001	-0.016**	-0.005+	-0.008**	-0.004*
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
% Other Race	-0.029**	-0.002	-0.011**	-0.002	-0.004	-0.003
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
MOS—Reference: % Combat MOS						
% Aviation	-0.047**	-0.003	-0.023**	-0.007	-0.012**	-0.006**

Model 2: % Junior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
	(0.009)	(0.002)	(0.004)	(0.004)	(0.003)	(0.002)
% Medical	0.002	0	-0.013**	-0.003	-0.003+	-0.002
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
% Combat Service	-0.026**	0	-0.019**	-0.005**	-0.004*	-0.004*
	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
% Service Support	-0.011*	0.001	-0.015**	0.002	-0.002	-0.001
	(0.004)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
% Other MOS	0.007+	-0.001	-0.011**	0	-0.001	-0.002
	(0.004)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	-0.014*	0.001	-0.003	-0.005+	-0.003	-0.007**
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 3 (51 to 65)	-0.012+	0.001	-0.008*	-0.006+	-0.003	-0.008**
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 4 (66 to 93)	-0.025**	0.002*	-0.012**	-0.006*	-0.004*	-0.007**
	(0.007)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
% AFQT CAT 5 (>93)	-0.057**	0.001	-0.020**	-0.013**	-0.009**	-0.013**
	(0.009)	(0.001)	(0.004)	(0.004)	(0.003)	(0.003)
Stressful Event Indicator						
% Currently Deployed	-0.007**	-0.002**	0.010**	-0.003**	-0.001*	-0.003**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
% Post Deployed	0.075**	0.001	0.041**	0.006**	0.009**	0.006**
	(0.003)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Currently Divorced	0.005**	0	0.002**	0.000*	0.001**	0.000*
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Divorced	0.017**	0	0.004**	0.002**	0.002**	0.001**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Currently Demoted	0.008**	0.000**	0.002**	0.001**	0.001**	0.002**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Demoted	0.012**	0.000**	0.002**	0.002**	0.001**	0.002**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Unit Size Category—Reference: Category 1 (<13 Junior Enlisted)						
Size CAT 2 (13 to 39)	-0.024**	-0.001**	-0.005**	-0.004**	-0.004**	-0.003**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Size CAT 3 (>39)	-0.042**	-0.002**	-0.009**	-0.007**	-0.006**	-0.005**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Year—Reference: Year 2002						

Model 2: % Junior Enlisted (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
2003	0.007** (0.001)	0.001** (0.000)	-0.002** (0.000)	0.002** (0.000)	0.001* (0.000)	0 (0.000)
2004	0.015** (0.002)	0.001** (0.000)	-0.003** (0.001)	0.004** (0.001)	0.002** (0.000)	0 (0.000)
2005	0.027** (0.002)	0.002** (0.000)	0 (0.001)	0.006** (0.001)	0.004** (0.001)	0.001+ (0.000)
2006	0.044** (0.002)	0.002** (0.000)	0.002* (0.001)	0.007** (0.001)	0.006** (0.001)	0.002** (0.001)
2007	0.065** (0.002)	0.003** (0.000)	0.009** (0.001)	0.009** (0.001)	0.009** (0.001)	0.005** (0.001)
2008	0.083** (0.002)	0.004** (0.000)	0.015** (0.001)	0.009** (0.001)	0.011** (0.001)	0.006** (0.001)
2009	0.101** (0.002)	0.005** (0.000)	0.019** (0.001)	0.011** (0.001)	0.014** (0.001)	0.010** (0.001)
2010	0.117** (0.002)	0.005** (0.000)	0.022** (0.001)	0.013** (0.001)	0.017** (0.001)	0.013** (0.001)
2011	0.130** (0.002)	0.005** (0.000)	0.022** (0.001)	0.015** (0.001)	0.019** (0.001)	0.014** (0.001)
Month—Reference: January						
Feb	0.002** (0.000)	0 (0.000)	0.001** (0.000)	0.000* (0.000)	0.000** (0.000)	0 (0.000)
Mar	0.003** (0.000)	0 (0.000)	0.001** (0.000)	0.000* (0.000)	0.000** (0.000)	0.000** (0.000)
Apr	0.003** (0.000)	0.000** (0.000)	0.001** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)
May	0.005** (0.000)	0.000** (0.000)	0.001** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)
Jun	0.007** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Jul	0.008** (0.000)	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Aug	0.009** (0.000)	0.000** (0.000)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Sep	0.009** (0.000)	0.000** (0.000)	0.002** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Oct	0.011** (0.000)	0.000** (0.000)	0.002** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)
Nov	0.012** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)
Dec	0.014** (0.000)	0.000** (0.000)	0.003** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.000)
Constant	0.081** (0.007)	0 (0.001)	0.028** (0.003)	0.014** (0.003)	0.010** (0.002)	0.016** (0.002)
N	1291165	1291165	1291165	1291165	1291165	1291165

D. COMBAT UNIT SUBSET AT THE PLATOON LEVEL

Table 27. Outcomes (FE) for Combat Unit Subset at the Platoon Level—Model 1

Model 1: Combat Unit Subset (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.14	0.015	0.033	0.226*	0.16	0.037
	(0.142)	(0.049)	(0.114)	(0.101)	(0.111)	(0.083)
Race—Reference: % White						
% Black	-0.099	0.012	-0.284**	-0.032	-0.180**	-0.115+
	(0.073)	(0.029)	(0.072)	(0.077)	(0.067)	(0.064)
% Hispanic	0.114	0.085+	0.226*	0.041	0.169+	0.104
	(0.110)	(0.045)	(0.098)	(0.073)	(0.091)	(0.081)
% Asian	0.083	0.023	-0.109	0.176+	-0.117	0.001
	(0.108)	(0.057)	(0.105)	(0.102)	(0.093)	(0.105)
% Other Race	0.038	0.017	0.002	0.205*	0.191*	-0.031
	(0.088)	(0.047)	(0.095)	(0.089)	(0.094)	(0.077)
Rank Group—Reference: E1 to E4						
% Officer	-0.186**	-0.064*	-0.155*	-0.059	-0.117*	-0.022
	(0.067)	(0.032)	(0.070)	(0.059)	(0.056)	(0.061)
% Senior Enlisted	0.079	-0.016	0.096+	0.057	0.048	0.058
	(0.050)	(0.023)	(0.054)	(0.047)	(0.044)	(0.043)
MOS—Reference: Combat						
% Non-Combat	0.035	0.06	0.104	0.206**	0.042	0.185**
	(0.074)	(0.040)	(0.077)	(0.066)	(0.063)	(0.065)
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.11	-0.047	0.277**	0.073	0.157*	0.165*
	(0.077)	(0.036)	(0.085)	(0.080)	(0.074)	(0.083)
% AFQT CAT 3 (51 to 65)	0.151*	-0.051	0.195*	0.068	0.085	0.150*
	(0.073)	(0.038)	(0.082)	(0.075)	(0.073)	(0.076)
% AFQT CAT 4 (66 to 93)	0.104	0.01	0.154+	0.088	0.142*	0.119+
	(0.074)	(0.035)	(0.079)	(0.074)	(0.067)	(0.066)
% AFQT CAT 5 (>93)	-0.134	-0.063	0.084	-0.109	-0.023	0.039
	(0.129)	(0.045)	(0.120)	(0.112)	(0.093)	(0.096)
Stressful Event Indicator						
% Currently Deployed	0.013	-0.036*	0.143**	0.018	0.009	-0.053*
	(0.026)	(0.015)	(0.028)	(0.024)	(0.024)	(0.024)
% Post Deployed	0.120**	-0.014	0.325**	0.071*	0.133**	0.023
	(0.034)	(0.018)	(0.036)	(0.033)	(0.032)	(0.030)
Currently	0.004	0.009	0.022**	0.016+	0.008	0.029**

Model 1: Combat Unit Subset (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Divorced						
	(0.005)	(0.007)	(0.007)	(0.009)	(0.008)	(0.008)
Post Divorced	0.039**	0.018**	0.043**	0.038**	0.027**	0.037**
	(0.013)	(0.005)	(0.013)	(0.010)	(0.009)	(0.010)
Currently Demoted	0.01	0.043**	0.012	0.034**	0.043**	0.039**
	(0.006)	(0.008)	(0.008)	(0.010)	(0.009)	(0.010)
Post Demoted	0.001	0.048**	0.008	0.057**	0.052**	0.072**
	(0.010)	(0.009)	(0.009)	(0.010)	(0.010)	(0.011)
Unit Size Category—Reference: Category 1 (<15 Soldiers)						
Size CAT 2 (15 to 45)	0.166**	0.045**	0.172**	0.133**	0.089**	0.092**
	(0.015)	(0.007)	(0.015)	(0.013)	(0.012)	(0.012)
Size CAT 3 (>45)	0.235**	0.132**	0.287**	0.300**	0.226**	0.269**
	(0.021)	(0.017)	(0.025)	(0.026)	(0.024)	(0.027)
Year—Reference: Year 2002						
2003	-0.022	0.002	-0.002	-0.004	-0.031+	-0.014
	(0.028)	(0.012)	(0.021)	(0.023)	(0.018)	(0.019)
2004	-0.009	0.009	0.011	0.007	0.002	-0.03
	(0.036)	(0.015)	(0.030)	(0.033)	(0.027)	(0.026)
2005	0.021	0.025	0.017	0.014	0	-0.018
	(0.039)	(0.019)	(0.035)	(0.037)	(0.029)	(0.030)
2006	0.051	0.041*	0.085*	0.032	0.056+	0.033
	(0.039)	(0.021)	(0.036)	(0.037)	(0.033)	(0.033)
2007	0.054	0.048*	0.159**	0.065+	0.099**	0.087**
	(0.040)	(0.021)	(0.036)	(0.038)	(0.034)	(0.033)
2008	0.075+	0.069**	0.213**	0.071+	0.125**	0.117**
	(0.042)	(0.023)	(0.036)	(0.038)	(0.034)	(0.034)
2009	0.104*	0.080**	0.247**	0.078*	0.176**	0.155**
	(0.042)	(0.024)	(0.038)	(0.038)	(0.034)	(0.034)
2010	0.123**	0.071**	0.265**	0.079*	0.209**	0.199**
	(0.044)	(0.024)	(0.039)	(0.038)	(0.035)	(0.034)
2011	0.163**	0.077**	0.274**	0.085*	0.216**	0.198**
	(0.046)	(0.026)	(0.041)	(0.040)	(0.037)	(0.036)
Month—Reference: January						
Feb	0.002	0.003	0.003	0.005	0.005	0.005
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Mar	0.012**	0.002	0.004	0.008+	0.009*	0.008+
	(0.005)	(0.003)	(0.005)	(0.005)	(0.004)	(0.004)
Apr	0.008	0.002	-0.003	0.003	0.005	0.008+
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
May	0.008	0	-0.002	0.003	0.004	0.010*
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Jun	0.011*	0.005	0.006	0.011*	0.013*	0.014**
	(0.005)	(0.004)	(0.006)	(0.005)	(0.005)	(0.005)

Model 1: Combat Unit Subset (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Jul	0.010+ (0.006)	0.007+ (0.004)	0.010+ (0.006)	0.016** (0.006)	0.013* (0.005)	0.022** (0.005)
Aug	0.012* (0.006)	0.010* (0.004)	0.012* (0.006)	0.013* (0.006)	0.015** (0.006)	0.021** (0.005)
Sep	0.016** (0.006)	0.005 (0.004)	0.018** (0.006)	0.014* (0.006)	0.016** (0.005)	0.020** (0.005)
Oct	0.016** (0.006)	0.009* (0.004)	0.020** (0.006)	0.019** (0.006)	0.026** (0.006)	0.028** (0.005)
Nov	0.021** (0.006)	0.008+ (0.004)	0.024** (0.006)	0.015** (0.006)	0.028** (0.005)	0.030** (0.005)
Dec	0.022** (0.005)	0.011** (0.004)	0.026** (0.005)	0.012* (0.005)	0.029** (0.005)	0.026** (0.005)
Constant	0.357** (0.070)	-0.004 (0.029)	-0.247** (0.070)	-0.099 (0.067)	-0.153** (0.059)	-0.158* (0.066)
N	45668	45668	45668	45668	45668	45668

Table 28. Outcomes (FE) for Combat Unit Subset at the Platoon Level—Model 2

Model 2: % Combat Unit Subset (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
Gender—Reference: % Male						
% Female	0.080* (0.039)	0 (0.003)	0.013 (0.016)	0.018* (0.009)	0.025 (0.016)	-0.005 (0.007)
Race—Reference: % White						
% Black	-0.068** (0.020)	0.006+ (0.003)	-0.041** (0.011)	-0.006 (0.006)	-0.017* (0.007)	-0.013** (0.005)
% Hispanic	0.077* (0.034)	0.004 (0.003)	0.055** (0.017)	0.004 (0.006)	0.028* (0.012)	0.012 (0.007)
% Asian	0.031 (0.040)	0.009 (0.007)	0.022 (0.029)	0.017+ (0.010)	-0.009 (0.012)	0.008 (0.010)
% Other Race	0.015 (0.024)	0.006 (0.004)	0.002 (0.015)	0.007 (0.007)	0.016+ (0.010)	-0.008 (0.006)
Rank Group—Reference: E1 to E4						
% Officer	-0.041* (0.019)	-0.007* (0.003)	-0.004 (0.012)	-0.012* (0.005)	-0.01 (0.006)	-0.006 (0.006)
% Senior Enlisted	0.058** (0.015)	-0.003 (0.002)	0.046** (0.010)	0.005 (0.005)	0.003 (0.005)	0.003 (0.005)
MOS—Reference: Combat						
% Non-Combat	0.053** (0.019)	-0.001 (0.003)	0.018 (0.012)	0.011+ (0.006)	-0.002 (0.006)	0.014* (0.006)

Model 2: % Combat Unit Subset (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
AFQT Score Category—Reference: % Category 1 (0 to 30, including missing AFQT)						
% AFQT CAT 2 (31 to 50)	0.107**	-0.002	0.050**	-0.004	0.009	0.007
	(0.024)	(0.003)	(0.016)	(0.006)	(0.007)	(0.007)
% AFQT CAT 3 (51 to 65)	0.095**	0	0.041*	0.001	0.005	0.014*
	(0.023)	(0.002)	(0.016)	(0.006)	(0.006)	(0.007)
% AFQT CAT 4 (66 to 93)	0.064**	-0.001	0.021	0.003	0.015*	0.004
	(0.023)	(0.002)	(0.015)	(0.006)	(0.006)	(0.006)
% AFQT CAT 5 (>93)	-0.008	-0.007*	-0.005	-0.009	-0.011	-0.006
	(0.033)	(0.003)	(0.022)	(0.009)	(0.008)	(0.009)
Stressful Event Indicator						
% Currently Deployed	0.005	-0.001+	0.017**	0	0.002	-0.005**
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
% Post Deployed	0.074**	0	0.055**	0.006*	0.011**	0.003
	(0.009)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
Currently Divorced	0	0	0	0	0	0
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
Post Divorced	0.003	0	0	0.001	0.001	0.001+
	(0.003)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)
Currently Demoted	0.007**	0.001*	0.001	0.001	0.001	0.001*
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Post Demoted	0.008**	0.001*	0.001	0.002*	0.001	0.002**
	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Unit Size Category—Reference: Category 1 (<15 Soldiers)						
Size CAT 2 (15 to 45)	-0.010*	0	0	-0.001	-0.004**	-0.002
	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Size CAT 3 (>45)	-0.023**	-0.001+	-0.005	-0.002	-0.006**	-0.002+
	(0.006)	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)
Year—Reference: Year 2002						
2003	0	0	-0.001	-0.001	-0.003*	0
	(0.004)	(0.000)	(0.002)	(0.002)	(0.001)	(0.001)
2004	0	0.001	-0.009**	0	-0.002	-0.002+
	(0.006)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
2005	0.001	0.001	-0.014**	0	-0.003	-0.002
	(0.007)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)
2006	0.012	0.001	-0.013**	0.001	-0.001	0.001
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)
2007	0.028**	0.002*	-0.003	0.003	0	0.003+
	(0.008)	(0.001)	(0.004)	(0.003)	(0.003)	(0.002)

Model 2: % Combat Unit Subset (Fixed Effect)	Any Mental Disorder	Suicide Attempt	PTSD	Depression	Anxiety	Substance Misuse
	b/se	b/se	b/se	b/se	b/se	b/se
2008	0.047**	0.003**	0.007	0.003	0.004	0.006**
	(0.009)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
2009	0.068**	0.004**	0.018**	0.004	0.007*	0.010**
	(0.009)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
2010	0.081**	0.003**	0.022**	0.004	0.010**	0.012**
	(0.009)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
2011	0.095**	0.003*	0.020**	0.003	0.010**	0.012**
	(0.010)	(0.001)	(0.005)	(0.003)	(0.003)	(0.002)
Month—Reference: January						
Feb	0.003**	0	0.001	0	0.001*	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Mar	0.005**	0	0.002**	0	0.001*	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Apr	0.003**	0	0	0	0.001	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
May	0.005**	0	0.001	0	0.001	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Jun	0.007**	0	0.002*	0.001	0.001+	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Jul	0.007**	0	0.002+	0.001*	0.001+	0.001
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Aug	0.008**	0.000+	0.002*	0.001	0.001+	0.001
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Sep	0.009**	0	0.002**	0	0.001**	0
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Oct	0.012**	0	0.004**	0.001+	0.002**	0.001**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Nov	0.013**	0.000*	0.004**	0.001*	0.002**	0.002**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Dec	0.013**	0	0.004**	0	0.002**	0.001**
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Constant	-0.043*	0.003	-0.041**	0.006	-0.002	-0.002
	(0.019)	(0.002)	(0.012)	(0.005)	(0.006)	(0.005)
N	45668	45668	45668	45668	45668	45668

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