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The Effect of Period of Service and Exposure to Service-Connected PTSD on Employment Status of US Veterans

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ABSTRACT

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By

Cleveland Whitehead III

INTRODUCTION: Post-traumatic stress disorder (PTSD) is a psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event such as a natural disaster, a serious accident, a terrorist act, war/combat, rape, or other violent personal assault. Service in the Armed Forces is a well known risk factor of PTSD. Hence the US Armed Forces leads are the main agencies with interests in PTSD research and treatment. Although it is well established that the unemployment rate in veterans is high, little is known regarding the role of exposure to PTSD risk factors and length of service on the employment status of US veterans.

AIM: The purpose of this study is to determine if exposure to PTSD risk factors and length of service affects veterans' employment status. The underlying hypothesis of this study is that exposure to PTSD risk factors and length of service are independently associated with unemployment.

METHODS: The National Center for Veterans Analysis 2010 Survey dataset was used for this study. Odds ratio from univariate and multivariate logistic regression analyses were used to examine the associations between PTSD exposure and length of service with employment status.

RESULTS: Over 58% of study participants were unemployed. Specifically, those who were prisoners of war or exposed to environmental hazards were significantly more likely to be unemployed compared to those who were not. Longer years of military service was positively associated with higher odds of PTSD. Participants with a military service period of less than 1 year and 1 to 5 years had much-decreased odds of PTSD compared to participants who had a service period greater than 5 years. In the univariate model, participants who were exposed to PTSD risk factors were 9% less likely to be employed compared to participants who were not exposed. Participants who were exposed to PTSD risk factors also had 1% decreased odds employment. Participants with longer service periods became less likely to be employed with those serving 11-15 years being 62% less likely to be employed. Length of service did not have any statistically significant effect on employment, controlling for all other selected independent variables.

DISCUSSION: Exposure to PTSD was found to be an statistically independent risk factor for unemployment in veterans. Increased length of military service was associated with increased unemployment. Although the margin was very low, these findings have public health significance and highlight the need to monitor subjects with PTSD regarding their ability to hold onto long term employment.

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Author's Statement Page

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CHAPTER 1- INTRODUCTION

Background

Post-traumatic stress disorder (PTSD) is a psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event such as a natural disaster, a serious accident, a terrorist act, war/combat, rape, or other violent personal assault. (*What Is PTSD?*, n.d.) PTSD can be acute and chronic, with chronic PTSD being the main focus of many programs and interventions. Although PTSD has been known and discussed in differing forms for centuries, the modern-day definition came around in 1980 in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-lll) published by the American Psychiatric Association as a result of Abraham Kardiner's study *The Traumatic Neuroses of War (1941)* and social movements of Vietnam War veterans and Holocaust survivors.(Crocq & Crocq, 2000) Before this, PTSD went by a multitude of names such as shell shock, soldiers' heart, and combat fatigue, along with an associated perception that vastly differs from that of the modern-day. Over 223.4 million people in the U.S. have experienced some type of traumatic event, 60% of men and 50% of women, and of these people, 8% of them will develop PTSD at some point in their lives. (*How Common is PTSD in Adults?*, n.d.) This is especially prevalent in those who have served in some capacity in the United States Armed Forces due to high exposure to PTSD risk factors. Consequently, PTSD is the third most prevalent psychiatric diagnosis among veterans using the Veterans Affairs (Reisman, 2016) While the vast majority of Armed Forces service members are men, only 4% of men are expected to have PTSD in their lives compared to up to 10% of women. (*How Common is PTSD in Women?*, n.d.) The explanation of this phenomenon is due to the severity of the trauma, such as rape, that is experienced primarily by women. (*How Common is PTSD in Women?*, n.d.; Reisman,

2016) Additionally, the National Vietnam Veterans Longitudinal Study found that veterans who suffer PTSD are more likely to suffer chronic health issues and psychiatric disorders such as depression, with rates of depression being as high as 50 times that of non-PTSD veterans in those with the worst cases of PTSD. (*The VVA Veteran, a publication of Vietnam Veterans of America*, n.d.) PTSD causes a large influx of the cortisol hormone leading to inflammation. As a result of the inflammation, reaction time, mental capacity, and emotional management are all lowered. (Pitman et al., 2012) Effective treatment for PTSD was unheard of before the past 50 years. Any treatment was ineffective or had the inverse effect of worsening the condition. Modern-day treatment for PTSD, both acute and chronic, includes medication, psychotherapy, and risk reduction. (Khan et al., 2019) Medications used for PTSD treatment are sertraline and paroxetine, subsets of selective serotonin reuptake inhibitors (SSRIs), with an overall response rate of decreased symptoms of approximately 60% in patients with PTSD. (Alexander, 2012) However, only 20% to 30% of patients achieve a complete remission with SSRIs alone. (Alexander, 2012) Additional treatments include cognitive behavior therapy, eye-movement desensitization and reprocessing, and cognitive processing therapy, which focus on the dissociation of trauma, exposure therapy, and replacing negative thought processes.(Khan et al., 2019)

Purpose

As stated previously, those who have served time in the United States Armed Forces are exposed to PTSD risk factors at a much higher rate than the population who have not served. Within the Armed Forces, the rank, specialization, and time spent deployed are all known to affect the severity of the PTSD experienced. Additionally, there is a high percentage of the unemployed population of the United States who are veterans of the Armed Forces. The

purpose of this study is to use the 2010 National Center for Veterans Analysis and Statistics (NCVAS) de-identified survey data under the Veteran Affairs (VA) which surveyed and recorded 8,710 veterans or active duty personnel who have served from Pre-1939 to 2010 to determine the effect of the period of service and exposure to service-connected PTSD causing agents and factors on the employment in veterans. This survey is the last of a series of comprehensive nationwide surveys designed to help VA plan its future programs and services for veterans and active duty. Respondents answered questions primarily focused on the quality of VA medical care and overall health status. Data collected about health status, employment, exposure to combat, death, etc. and time spent are the main focus. The main aims of the study are to

1. Determine the association between length of service and PTSD risk factors;
2. Determine the association of exposure to PTSD risk factors on the employment status of veterans;
3. Determine the association of length of service on the employment status of veterans

CHAPTER 2- REVIEW OF LITERATURE

Biology

As discussed before, Post Traumatic Stress Disorder causes a large influx of the cortisol hormone leading to inflammation. This influx is caused by a combination of intrusive, traumatic memories, and attempts to suppress such memories and hyperarousal. (Pitman et al., 2012) This is evidenced by involuntary bodily reactions such as a shift towards a higher heart rate in response to sudden, often loud sounds. Also, PTSD is known to have adverse effects on brain size and function, with neuroimaging studies documenting decreased grey matter in their frontal lobe. (Pitman et al., 2012) The amygdala, located in the cerebral hemisphere and

responsible for emotion responses and decision making, presents a heightened reactivity to fear and other stimuli. This response increases in severity with the severity of PTSD. This can lead to a person living with PTSD experiencing increased fight-or-flight, often manifesting as heightened fear or hostility of anything which can trigger memories of the trauma. (Pitman et al., 2012) In contrast, the hippocampus is involved in the encoding and recall of memories and environmental cues related to them. When a brain is affected by PTSD, the hippocampus can react by either having a lowered or heightened activation. (Pitman et al., 2012) A lowered activation is indicated by failure to recall or remember events surrounding the trauma and is seen as a form of mental defense. A heightened activation, however, is indicated by an increased recall and reliving of the trauma, examples including the "Thousand Yard Stare."

Along with cerebral changes, PTSD also causes abnormal hormonal changes, primarily cortisol. Seeing as how cortisol helps the body respond to stress, a PTSD affected brain will produce increased levels of cortisol. This leads to inflammation of the area, which can further lead to slower reaction time, mental performance, and emotional management. (Pitman et al., 2012) In some cases, the high level of cortisol can also lead to the formation of a durable and long-lasting memory of the trauma(Pitman et al., 2012). Additionally, PTSD is associated with hyperactivity of the sympathetic system, which causes an increase in the release of norepinephrine. This hormone is released at a much higher rate during stress or fear to prep the body. Coupled with the hyperactivity caused by PTSD, this can lead to reliving the traumatic event, including nightmares, flashbacks, and emotional and physiological reactions to trauma.

Diagnosis

In 2013, the criteria for the diagnosis of PTSD was revised and placed in a new category. In order to be diagnosed under these criteria, exposure to trauma or highly stressful events or environments is a requirement. The requirements and criteria are summarized as follows:

Criterion A: Stressor

- Exposure to a stressor/trauma such as death, sexual violence, etc. (*DSM-5 Criteria for PTSD*, 2018)

Criterion B: Intrusion Symptoms

- Event constantly re-experienced (*DSM-5 Criteria for PTSD*, 2018)

Criterion C: Avoidance

- Avoiding stimuli related to trauma (*DSM-5 Criteria for PTSD*, 2018)

Criterion D: Negative Alterations in Cognitions and Mood

- Negative thoughts increase after trauma (*DSM-5 Criteria for PTSD*, 2018)

Criterion E: Alterations in Arousal and Reactivity

- Reactions to trauma stimuli increase (Hypervigilance, aggression, etc.) (*DSM-5 Criteria for PTSD*, 2018)

Criterion F: Duration

- One month or more (1-3 months is acute, 3+ months is chronic) (*DSM-5 Criteria for PTSD*, 2018)

Criterion G: Functional Significance

- Symptoms create distress or functional impairment (*DSM-5 Criteria for PTSD*, 2018)

Criterion H: Exclusion

- Symptoms are not due to medication, substance use, or other illness (*DSM-5 Criteria for PTSD*, 2018)

Under these criteria, it is notable to note the distinct difference between PTSD and Acute Stress Disorder (ASD). The primary difference between the two disorders is onset time and temporal order, as ASD onsets typically within three days to a month after the traumatic event, and while it does not always transition to PTSD, in the cases where it does, it is always the precursor condition. (*Acute Stress Disorder - PTSD*, n.d.; *DSM-5 Criteria for PTSD*, 2018)

Treatment

Treatment of PTSD has always been a daunting process irrespective of the time, primarily due to the myriad of trauma that can cause the condition. In the past, PTSD treatment, if given at all, ranged from electrotherapy to the PIE system; treat within proximity of the front, treat immediately, and expect the soldier to return to duty at the earliest possible time (Jones et al., 2007). It was only during the 1980s did research into efficient and effective PTSD treatment options begin, spurred by the mass influx of Vietnam veterans who were suffering the condition for years. The most effective of these treatment options were that of psychotherapy and the usage of selective serotonin uptake inhibitors. Of note in this development of treatments is the resilience of combat-related- PTSD, often required more rigorous treatment (Iribarren et al., 2005) Psychotherapy includes cognitive behavior therapy, where the patient is exposed slowly to triggers of their PTSD and slowly guided to restructure the patients' thoughts concerning the traumatic event, and cognitive processing therapy where traumatic thoughts are identified and unpacked, leading to understanding, desensitization and more efficient coping with the trauma (Khan et al., 2019; Reisman, 2016) Often medicinal treatment is prescribed in tandem with psychotherapy, including antidepressants and SSRIs. The most common SSRIs are sertraline and paroxetine. SSRIs work via inhibiting the body's

absorption of serotonin, a neurotransmitter with an influence on mood and emotion, therefore allowing more serotonin to be present and improve mood and the effectiveness of addition co-treatments (Iribarren et al., 2005; *Selective serotonin reuptake inhibitors (SSRIs)*, 2017).

Unemployment

Recently, unemployment has been a rising issue among the veteran population of the United States, with reasons cited being trouble readjusting to civilian life, trouble finding employment, discrimination, poor health, and more. (Loughran, 2014) In 2010, veterans that served after 9/11 had an unemployment rate of 11.5%, those that served from 1990-2001 had an unemployment rate of 7.7%. All other veterans from earlier conflicts had an unemployment rate of 8.3% (*Unemployment rates of veterans, 2010*, n.d.). This is compared to the nonveteran, civilian population, which had a total unemployment rate of 9.4%. (*Unemployment rates of veterans, 2010*, n.d.) Sex was not a contributing factor in the employment status of veterans since gender differences were not statistically significant. (*Unemployment rates of veterans, 2010*, n.d.)

CHAPTER 3- METHODOLOGY

The purpose of this section is to explain and describe the methods used to answer the research question of the study. This study uses de-identified survey data from the NCVAS collected from veterans of the United States Armed Forces. Correlation between variables was tested via univariate and multivariate regression.

Data

The data was retrieved from the 2010 National Center for Veterans Analysis and Statistics under the Department of Veterans Affairs. The NCVAS is responsible for analyzing data, developing reports, and disseminating the information on veteran populations to relevant health channels. The data provided by NCVAS is instrumental in the VA's planning of interventions and activities directly related to active duty and veteran health. (Planning, "About Us - National Center for Veterans Analysis and Statistics.") This particular study was geared to compare the awareness and knowledge of VA services and benefits among Veterans' groups. Information was gathered via a national mailed survey of veterans created by the VA itself; there was no follow up. A majority of the questions within the survey were self-reported by the respondent.

Data Recoding

The data provided by NCVAS included 8,710 individual respondents. In specific questions of the questionnaire, respondents could check multiple boxes. The NCVAS data also lacked definitions and variables for PTSD exposure and employment. The PTSD exposure variable was created by merging the variables designated PTSD risk factors (exposure to combat, dead or dying, environmental hazards such as chemical weapons and PoW status) If the respondent checked yes, or in the case of environmental hazards, yes or most likely, they were considered PTSD exposed. Employment status was related to two variables, service connected disability prevented the veteran from getting/holding jobs, and service connected disability currently prevents the veteran from getting/holding jobs. Those who faced

unemployment in the past due to a service-connected disability are considered unemployed currently for this study.

Race categories from the NCVAS data were broad, as respondents were able to choose multiple races or write in their own. As such, the data lacked categories for races such as Non-Hispanic Black or Whites. The new race variable was created first by specifying those who were Hispanic. Those who marked Hispanic regardless of country of heritage and marking of other race categories were coded as Hispanic. From there, the remaining race groups, primarily black and white, were able to be coded as Non-Hispanic Black or White. Multiple respondents marked specific racial groups in Asian such as Chinese, Filipino, and Samoan. These categories were all coded as Asian. Finally, American Indian, Native Hawaiian, Asian Indian, and Alaskan Native were all coded into the Other category.

Data Analysis

Merging and formatting of data were done in SAS 9.4, and data analysis was done using SPSS. After the initial frequency table of the variables under study, a descriptive cross tab was done. All variables in the study were compared to the independent and dependent variables along with the associated chi-square test, used to test significant differences of the crosstab results. ($p<.05$) Finally, a univariate and multivariate logistic regression against employment status.

CHAPTER 4: RESULTS

Demographics and Frequency

Among the population of veterans, a majority of them were 51-80 years old (68.80%, Table 1), and 100% of the population served active duty. Thus, a majority of the veteran population served in Korea or Vietnam and only served from 1-5 years (72.70%, Table 1). This is most likely due to the standard enlistment time during this period being four years of service. Due to the de-identified nature of the data, gender was not recorded. Finally, over 85% of the population identified as Non-Hispanic White.

The amount of population identified as being exposed to PTSD was close, with 52% being exposed and 47.9% being unexposed. Among the four PTSD exposure variables, exposure to dead or dying and exposure to environmental hazards had much higher variance than the other variables and are most likely responsible for an evening out the variance of the primary PTSD exposure variable. For employment status, 55.7% of the population were unemployed. Interestingly, when asked if disability had ever or was currently preventing the respondent from gaining employment, a large majority of the population decided to omit their answer.

Crosstabs

Among the age ranges of 20-50 and 81-101+, participants were more likely to be exposed to PTSD risk factors. (p-value<.001, Table 2) All racial and ethnic groups were more likely to be exposed to PTSD. (p-value<.001, Table 2) Longer service times were associated with higher percentages of PTSD exposure. In service periods between less than a year, to 1 to 5 years were participants less likely to be exposed to PTSD, although PTSD exposure was most

likely during a service period of 1 to 5 years. (p-value<.001, Table 2, 3.) Those exposed to PTSD risk factors were 79.3% (p-value<.05, Table 2.) likely to currently be unable to get employment due to a service-connected disability, having PTSD.

When looking at the dependent variable, employment status, younger ages were associated with employment. (p-value<.001, Table 3). All racial groups of veterans are more likely to be unemployed, except for Hispanics, who break even at 50% employed and unemployed. (p-value<.001, Table 3). Serving less than a year, to 1 to 5 years, had the highest percentages of unemployment amongst time served at 62.2% and 63% unemployment, respectively. (p<.001, Table 3) Those exposed to PTSD risk factors, 58.4% of them are unemployed. (p-value<.001, Table 3) Specifically, those who were POWs or exposed to environmental hazards had a statistically significant association with unemployment, with POWs, having unemployment of 83.3% (p<.05, Table 3) and exposed or most likely exposed to environmental hazard being 58.9% and 55.1% unemployed respectively. (p<.001, Table 3).

Logistic Regression

Notably, participants aged 51-80 years old are 3 times more likely to be employed when compared to 20-50 year-olds in the univariate model(p<.001, Table 5) and were 35.5 times more likely to be employed in the multivariate model. (p-value<.05, Table 5). In the univariate, all racial groups were less likely to be employed compared to Non-Hispanic Whites. However, only Non-Hispanic Black and Hispanics were statistically significant. (p-value<.05, p-value<.001, Table 5). When controlling for all other selected independent variables, those who served more than 5 years were all less likely to be employed compared to those who served less than a year.

Those who served 1-5 years were more likely to be employed, but this was not statistically significant. (p-value>.05). Length of service did not have a significant effect on employment when controlling for all other selected independent variables (p=.999, Table 5) Participants exposed to PTSD risk factors were .906 times less likely to be employed in the univariate model (p-value<.05, Table 5), and .008 times less likely in the multivariate model (p-value<.05, Table 5).

CHAPTER 5- DISCUSSION AND CONCLUSION

Discussion of Research Questions

The purpose of this study is to determine if exposure to PTSD risk factors and length of service have an independent effect on employment in veterans. The results from this study revealed that exposure to PTSD is an independent risk factor for unemployment in veterans, with veterans exposed to PTSD being 1% less likely to have employment, independent of other variables. This aligns with previous studies, which found that PTSD is a significant obstacle to employment, even after adjusting for potentially confounding factors. (Resnick, 2008) The effects of PTSD, such as flashbacks, present a barrier for many veterans and prevent them from moving from their past trauma. This inability to cope can effectively prevent long term employment as it manifests negatively in regards to work performance. Being a prisoner of war was associated with the highest levels of unemployment among the PTSD risk factors. This may be explained by the mental and physical stress associated with prisoner of war camps, with most being barely hospitable with poor living conditions. However, while exposure to PTSD risk factors is statistically significant, the margin is extremely small and an impractical meaningful difference. This points to potential bias in the analysis.

The second independent variable under study, length of service, was found to be associated with unemployment, but did not have an independent effect. As participants served longer years, they became less likely to be employed, with those serving 11-15 years being 62% less likely to be employed. Additionally, an increase in the length of service was associated with increased exposure to PTSD. Veterans who had a length of service of 21 years or more had the highest percentage of PTSD exposure at 78%. However, veterans service periods of 1-5 years were the most likely to be exposed to PTSD. This is most likely due to a tour of duty of 4 years being the most common among service members.

Strengths and Limitations

A strength of this study is a large number of subjects in the data source who served throughout different periods. This robust and diverse set of veterans allowed for an in-depth analysis, which yielded reliable results. Additionally, this makes it generalizable to much of the veteran population of the United States as a whole, as members of all different age groups, racial groups, and military branches are represented. The second strength of this study is the ease of analyzing the data. The NCVAS data set is readily available and compatible with analytical software.

There are a few limitations of this study, many due to the data itself. The first limitation was the inability to factor the sex of the veteran into the analysis. As part of NCVAS' de-identification procedures, participants' gender was removed from the data set. Additionally, due to the data being surveyed and thus self-reported, some of the respondents may have inflated or deflated the data: one example is the question of "exposure to environmental

hazards," where the veteran could answer definitely or probably yes, definitely or probably no and "don't know." Thus veterans could very well have been exposed to environmental hazards, but since they have not felt adverse effects from the exposure, they reported no exposure. Timing is another limitation, as the data set is ten years old. NCVAS only does this survey in 10-year intervals; therefore, this was the most recent and updated data set. Additionally, neither the exposure variable of PTSD, nor the response variable of employment were directly measured. As stated previously, the purpose of the NCVAS study was to compare the awareness and knowledge of VA services and benefits among Veterans' groups. As a result, questions were asked regarding trauma exposure and employment status as they have specific VA benefits attached to them. This forced the creation of PTSD exposure and employment variables and possibly led to information bias, visible in the difference, which was statistically significant, but in reality was a negligible difference. Additionally, the large sample size may have artificially affected the p-value, increasing the likelihood of finding a significant relationship.

Future Recommendations

Continued research into the effects of exposure to PTSD on veterans' employment is warranted. Additional studies should examine rates of PTSD by military occupational specialty code (MOS) as certain specialties will have a higher risk of PTSD exposure, such as infantry or artillery. This research can then be used to coordinate the distribution of PTSD treatment resources amongst the United States Armed Forces. Additionally, the next study will need to use a stringent definition of PTSD, as the VAs definition of PTSD and, thus, diagnosis varies heavily. Standardization of PTSD criteria using that provided by the APA and ensuring all health

professionals use this criteria would be the first step. Accordingly, direct questions about employment status should be asked along with the veterans' perceived employability as a result of any disabilities sustained as a result of their service.

Conclusion

These findings suggest that PTSD exposure is a minor, yet significant barrier to employment, even when controlling for other effects and thus highlight the need to monitor subjects with PTSD regarding their ability to hold onto long term employment. Length of service is associated with unemployment and should be taken into consideration when treating a veteran for PTSD. The VA is always pushing to improve treatment for PTSD in veterans and thus needs to divert more resources to social services aimed at easing the transition from active duty to civilian life and employment. Additional studies must be done in this area to expand on the exact effect and must ensure that all veterans are diagnosed using the same criteria for PTSD.

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CHAPTER 8: TABLES

Table 1: Descriptive Study of the Entire Population (N=8710)				
Variables		**Count**	**Mean**	**Standard Deviation**
Age			1.97	0.543
	20-50 Years Old	16.00%		
	51-80 Years Old	68.80%		
	81-101+ Years Old	13%		
	Missing	2.40%		
Race and Ethnicity			1.36	1.05
	Non-Hisp. White	85.00%		
	Non-Hisp. Black	6.80%		
	Hispanic	3.20%		
	Asian	1.00%		
	Other	0.60%		
	Not Ascertained	3.40%		
Years Served			2.54	1.21
	Less Than One Year	1.70%		
	1-5 Years	72.80%		
	6-10 Years	9.60%		
	11-15 Years	2.20%		
	16-20 Years	3.70%		
	21+ Years	7.40%		
	Missing	2.50%		
PTSD Exposure			1.48	0.5
	PTSD+	52%		
	PTSD-	47.90%		
Ever on Active Duty			1	0
	Yes	100%		
Ever in Combat/War Zone			1.63	0.482
	Yes	35.60%		
	No	62.30%		
	Missing	2.20%		
Ever expos. to Dead/Dying			1.64	2

	Yes	35.60%		
	No	62.30%		
	Missing	2.10%		
Ever a Prisoner of War			2	0.047
	Yes	0.20%		
	No	99%		
	Missing	0.80%		
Ever expos. to Envir. Hazards			3.91	2.24
	Def. Yes	11.40%		
	Prob. Yes	13.80%		
	Prob. No	26.00%		
	Def. No	28.40%		
	Don't Know	19.60%		
	Missing	0.90%		
Employment Status			1.59	0.49
	Employed	37.80%		
	Unemployed	55.70%		
	Missing	6.50%		
Service-Connected Disability Prevented Veteran from getting/holding a Job			1.69	0.464
	Yes	5.10%		
	No	11.10%		
	Missing	83.80%		
Service-Connected Disability Currently Prevents Veteran from getting/holding a Job			1.25	0.431
	Yes	3.90%		
	No	1.30%		
	Missing	94.80%		

Table 2: Descriptive Crosstab of PTSD Exposure **(N=8710)**				
		PTSD Exposure		
Variables		PTSD(+)	PTSD(-)	Chi-Square (p-value)
Age				48.684 (<0.001)
	20-50 Years Old	58.90%	41.1%%	
	51-80 Years Old	49.70%	50.30%	
	81-101+ Years Old	56.70%	43.30%	
Race and Ethnicity				29.6 (<0.001)
	Non-Hisp. White	51.00%	49.00%	
	Non-Hisp. Black	55.90%	44.10%	
	Hispanic	62.00%	38.00%	
	Asian	67.50%	32.50%	
	Other	51.80%	48.20%	
	Not Ascertained	57.70%	42.30%	
Years Served				382.00 (<0.001)
	Less Than One Year	23.70%	76.30%	
	1-5 Years	48.40%	51.60%	
	6-10 Years	56.50%	43.50%	
	11-15 Years	71.10%	28.90%	
	16-20 Years	78.50%	21.50%	
	21+ Years	78.10%	21.90%	
Ever on Active Duty				N/A
	Yes	52.10%	47.90%	
Ever in Combat/War Zone				4478.83 (<0.001)
	Yes	100.00%	0.00%	
	No	24.90%	75.10%	
Ever expos. to Dead/Dying				4400.00 (<0.001)
	Yes	100.00%	0.00%	
	No	25.40%	74.60%	
Ever a Prisoner of War				17.56 (<0.001)
	Yes	100.00%	0.00%	
	No	51.90%	48.10%	
Ever expos. to Envir. Hazards				3093.55 (<0.001)

	Def. Yes	100%	0.00%	
	Prob. Yes	100.00%	0.00%	
	Prob. No	40.80%	59.20%	
	Def. No	20.90%	79.10%	
	Don't Know	50.60%	49.40%	
Employment Status				4.78(0.29)
	Employed	53.70%	46.30%	
	Unemployed	51.20%	48.80%	
Service-Connected Disability Prevented Veteran from getting/holding a Job				0.55(.457)
	Yes	56.70%	43.30%	
	No	58.80%	41.20%	
Service-Connected Disability Currently Prevents Veteran from getting/holding a Job				6.41(.011)
	Yes	79.30%	20.70%	
	No	67.60%	32.40%	

Table 3: Descriptive Crosstab of Years Served **(N=8710)**								
		Years Served						
Variables		Less than 1 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21+ Years	Chi-Square (p-value)
Age								467.69 (<0.001)
	20-50 Years Old	2.10%	58.70%	21.20%	5.60%	6.90%	5.50%	
	51-80 Years Old	1.80%	76.30%	8.00%	1.60%	3.70%	8.60%	

	81-101+ Years Old	1.20%	86.90%	5.40%	1.10%	0.60%	4.80%	
Race and Ethnicity								167.66 (<0.001)
	Non-Hisp. White	1.70%	76.60%	9.30%	2.00%	3.30%	7.10%	
	Non-Hisp. Black	2.30%	56.50%	16.00%	4.70%	8.60%	11.90%	
	Hispanic	0.70%	73.00%	9.40%	2.20%	6.40%	8.20%	
	Asian	0.00%	57.70%	11.50%	6.40%	10.30%	14.10%	
	Other	5.80%	73.10%	9.60%	1.90%	1.90%	7.70%	
	Not Ascertained	2.80%	69.30%	12.70%	2.50%	3.90%	8.80%	
PTSD Exposure								382.00 (<0.001)
	PTSD+	0.80%	68.60%	10.60%	3.00%	5.70%	11.20%	
	PTSD-	2.90%	81.40%	9.10%	1.40%	1.70%	3.50%	
Ever on Active Duty								N/A
	Yes	1.80%	74.70%	9.90%	2.20%	3.80%	7.60%	
Ever in Combat/War Zone								332.42 (<0.001)
	Yes	0.50%	68.00%	9.50%	3.10%	6.10%	12.80%	
	No	2.50%	78.50%	10.20%	1.70%	2.50%	4.50%	
Ever expos. to Dead/Dying								219.45 (<0.001)
	Yes	0.80%	68.50%	10.10%	3.10%	5.60%	11.90%	
	No	2.30%	78.30%	9.70%	1.80%	2.80%	5.10%	
Ever a Prisoner of War								18.66(.002)
	Yes	0.00%	47.40%	15.80%	5.30%	21.10%	10.50%	
	No	1.80%	74.70%	9.90%	2.20%	3.80%	7.60%	

Ever expos. to Envir. Hazards								367.12(.00)
	Def. Yes	0.60%	62.70%	10.70%	3.30%	7.20%	15.60%	
	Prob. Yes	0.50%	64.70%	12.70%	3.50%	6.60%	12.10%	
	Prob. No	1.90%	76.60%	9.40%	2.00%	3.70%	6.40%	
	Def. No	2.80%	81.60%	8.90%	1.50%	1.60%	3.60%	
	Don't Know	1.90%	76.20%	9.50%	2.20%	3.40%	6.80%	
Employment Status								152.53 (<0.001)
	Employed	1.70%	67.60%	13.30%	3.50%	5.10%	8.90%	
	Unemployed	1.90%	78.80%	7.80%	1.50%	3.10%	6.90%	
Service-Connected Disability Prevented Veteran from getting/holding a Job								1.337(.931)
	Yes	1.20%	64.50%	9.20%	2.80%	7.40%	15.00%	
	No	1.80%	65.30%	9.40%	2.60%	7.40%	13.40%	
Service-Connected Disability Currently Prevents Veteran from getting/holding a Job								3.26 (.660)
	Yes	1.50%	60.20%	10.60%	3.50%	10.30%	13.90%	
	No	0.00%	57.80%	13.80%	5.50%	10.10%	12.80%	

Table 4:Descriptive Crosstab of Employment Status **(N=8710)**				
Variables		**Employment Status**		Chi-Square (p-value)
Age		Employed	Unemployed	
				1056.24 (<0.001)
	20-50 Years Old	71.30%	28.70%	
	51-80 Years Old	39.10%	60.90%	
	81-101+ Years Old	4.50%	95.50%	
Race and Ethnicity				20.49(.001)
	Non-Hisp. White	39.50%	60.50%	
	Non-Hisp. Black	44.10%	55.90%	
	Hispanic	50.00%	50.00%	
	Asian	48.70%	51.30%	
	Other	40.40%	59.60%	
	Not Ascertained	45.90%	54.10%	
Years Served				152.53 (<0.001)
	Less Than One Year	37.80%	62.20%	
	1-5 Years	37.00%	63.00%	
	6-10 Years	53.80%	46.30%	
	11-15 Years	61.30%	38.70%	
	16-20 Years	52.60%	47.40%	
	21+ Years	47.10%	52.90%	
PTSD Exposure				4.78(.029)
	PTSD+	41.60%	58.40%	
	PTSD-	39.20%	60.80%	
Ever on Active Duty				N/A

	Yes	40.50%	59.50%	
Ever in Combat/War Zone				2.18(.140)
	Yes	39.50%	60.50%	
	No	41.20%	58.80%	
Ever expos. to Dead/Dying				.475(.491)
	Yes	41.00%	59.00%	
	No	40.20%	59.80%	
Ever a Prisoner of War				4.26(.039)
	Yes	16.70%	83.30%	
	No	40.60%	59.40%	
Ever expos. to Envir. Hazards				30.63 (<0.001)
	Def. Yes	41.10%	58.90%	
	Prob. Yes	44.90%	55.10%	
	Prob. No	42.30%	57.70%	
	Def. No	36.10%	63.90%	
	Don't Know	40.80%	59.20%	
Service-Connected Disability Prevented Veteran from getting/holding a Job		-	-	.275(.600)
	Yes	40.00%	60.00%	
	No	38.50%	61.50%	
Service-Connected Disability Currently Prevents Veteran from getting/holding a Job				81.82 (<0.001)
	Yes	10.10%	89.90%	
	No	51.00%	49.00%	

Table 5:Logistic Regression **(N=8710)**					
		Univariate Model		**Multivariate Model**	
		P Values	OR (95% C.I)	P Values	OR (95% C.I)
Age					
	20-50 Years Old	-	-	-	-
	51-80 Years Old	<.0001	3.871 (3.405-4.402)	0.003	35.490 (3.487-361.207)
	81-101+ Years Old	<.0001	52.385 (37.758-72.680)	0.999	.000 (.000-*)
Race and Ethnicity					
	Non-Hisp. White	-	-	-	-
	Non-Hisp. Black	0.035	.828 (.694-.986)	0.288	3.276 (.367-29.254)
	Hispanic	0.001	.654 (.511-.836)	0.27	6.475 (.234-179.331)
	Asian	0.101	.688 (.440-1.076)	.999	37980748.09 (0-*)
	Other	0.901	.965 (.554-1.683)	0.999	68919220.23 (0-*)
	Not Ascertained	0.055	.769 (.588-1.006)	-	-
Years Served					
	Less Than One Year	-	-	-	-
	1-5 Years	0.845	1.035 (.735-1.457)	.999	0 (0-*)
	6-10 Years	<.0001	.522 (.362-.752)	.999	0 (0-*)
	11-15 Years	<.0001	.383 (.245-.600)	.999	.258 (0-*)
	16-20 Years	0.004	.548 (.365- .821)	.999	0 (0-*)
	21+ Years	0.045	.682 (.470- .991)	.999	0 (0-*)
PTSD Exposure					
	PTSD+	0.029	.906 (.829-.990)	0.023	.008 (.000-.509)
	PTSD-	-	-	-	-
Ever on Active Duty					
	Yes	<.0001	1.472 (-.-)	-	-
Ever in Combat/War					

Zone					
	Yes	0.14	1.072(.977-1.177)	0.023	15.181 (1.449-158.987)
	No	-	-	-	-
Ever expos. to Dead/Dying					
	Yes	0.491	.968(.882-1.062)	0.497	.471 (.054-4.138)
	No	-	-	-	-
Ever a Prisoner of War					
	Yes	0.052	3.41 (.987-11.800)	-	-
	No	-	-	-	-
Ever expos. to Envir. Hazards					
	Def. Yes	0.865	.986 (.837-1.162)	0.739	.657 (.056-7.721)
	Prob. Yes	0.031	.844 (.724-.984)	0.66	.526 (.030-9.151)
	Prob. No	0.354	.939 (.823-1.072)	0.723	1.856 (.061-56.516)
	Def. No	0.003	1.218 (1.067-1.389)	0.365	.176 (.004-7.561)
	Don't Know	-	-	-	-
Service-Connected Disability Prevented Veteran from getting/holding a Job					
	Yes	0.6	.938 (.739-1.191)	0.317	.417 (.075-2.317)
	No	-	-	-	-
Service-Connected Disability Currently Prevents Veteran from getting/holding a Job					
	Yes	<.0001	9.265 (5.457-15.731)	0.006	13.408 (2.079-86.460)
	No	-	-	-	-