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## Identification of Contributing Factors to Alcohol Abuse in Korean and Vietnam War Veterans

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*Identification of Contributing Factors to Alcohol Abuse in Korean and Vietnam War Veterans*

AN HONORS THESIS

<sup>1</sup>College of St. Benedict/St. John's University

In Partial Fulfillment of the Requirements for Distinction

in the Department of Nursing

by

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**Abstract**

*Project Title:* Identification of Contributing Factors to Alcohol Abuse in Korean and Vietnam War Veterans

*Background:* It is known that alcohol use is prevalent among American military personnel. There is little research on whether or not alcohol abuse in the military today can also be applied to Korean and Vietnam era war veterans.

*Objective:* This study aims to discover if risk factors for alcohol abuse patterns from Korean and Vietnam War veterans match a more recent predictive model for veteran alcohol abuse.

*Method:* A Retrospective descriptive study, using existing medical record data, drawn from a total record set of 400 veterans, 59 of which met inclusion criteria for alcohol abuse. Cases were then drawn that had both alcohol abuse diagnostic codes and a Post Traumatic Stress Disorder (PTSD) code, resulting in 13 of 59 cases meeting inclusion criteria for the model.

*Results:* Of the 13 men who had an inclusion diagnostic code for alcohol abuse and a diagnostic code (309.81) for PTSD, eight also had a diagnostic code (311), for depression. Retrospectively this theoretical model seems to fit Veterans from the Korean and Vietnam War era.

### **Introduction**

The use of alcohol is prevalent in American society today. Unfortunately, drinking alcohol is directly related to a higher risk of health problems and unintentional injuries or death (CDC, 2012). One specific population with rates of high alcohol use and abuse are veterans and military personnel. The strain put on military personnel and their families can evidence itself in many ways, but substance abuse may be on the rise (Volkow, 2009). The National Institute of Drug Abuse found that in 2011, 27% of soldiers returning from Iraq met criteria for alcohol abuse. It is clear alcohol abuse is a current problem that requires continued work by the military and Veterans Affairs, but what about our retired veterans? Those who served during the Korean and Vietnam Wars are now older adults, still suffering from mental illnesses and alcohol abuse issues that were not well understood in the context of their war experience. This study takes a retrospective look at Veterans from the Korean and Vietnam era to see whether the variables predictive of alcohol abuse patterns noted among more recent war veterans can also be found among the earlier war veterans.

### **Literature Review**

The scientific literature on alcohol use and abuse related to combat exposure in veterans from the Korean and Vietnam wars is limited. However, more and more research is available about veterans returning from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) related to alcohol use rates among soldiers (Eisen, Schultz, Vogt, Glickman, Elwy, Drainoni, & ... Martin, 2012; Hawkins, Lapham, Kivlahan, & Bradley, 2010; Jacobson, et al., 2008; Jakupcak, Tull, McDermott, Kaysen, Hunt, & Simpson, (2010); McDevitt-Murphy, Williams, Bracken, Fields, Monahan, & Murphy, (2010). A number of themes are apparent in

these studies that can potentially help in the treatment of veterans from previous wars.

Researchers found several variables that forecast alcohol abuse including gender, branch of service, Post Traumatic Stress Disorder (PTSD) status, and depression (Jakupcak, et al., 2010).

This pattern is supported by other studies. Branch of service in the military was identified as one of the risk factors for alcohol abuse (Eisen et al., 2012). Eisen et al. (2012) found that Army and Marine soldiers screened positively for alcohol use almost two times more often than Air Force and Navy respondents with the difference being statistically significant. They noted that service branch was an important factor in evaluating risk for alcohol abuse. Jakupcak et al. (2010) confirmed that alcohol abuse was more common among Veterans who served in the Army or Marine Corps. By realizing which branches of service correlate to higher rates of alcohol abuse, greater efforts can be made for alcohol abuse prevention and interventions in these specific branches of service.

Additional risk factors for alcohol abuse are younger age and male gender (Jakupcak, et al., 2010). Eisen (2012) confirmed that men reported higher substance abuse scores than women specifically in regard to alcohol abuse. This was found to be statistically significant using the AUDIT-C as the tool for assessment. Hawkins et al. (2010) found that men under the age of thirty are at highest risk for alcohol abuse. The OEF/OIF veterans were found to have a statistically significant higher rate of alcohol abuse correlated to age. These two factors should be included when studying veterans.

Direct combat exposure was found to be a serious risk factor for alcohol abuse. Among present day soldiers, Jakupcak et al. (2010) found that those who screened positive for alcohol abuse were more likely to report direct combat experience while deployed (Jakupcak, et al., 2010). Knowing whether or not a soldier has direct combat experience could be a contributor to

their risk for alcohol abuse as a result of the traumatic experience.

The final risk factors identified for alcohol abuse in present-day studies is PTSD status and depression. Positive associations found between PTSD, depression, and alcohol abuse are consistent among OEF/OIF Veterans (Seal et al., 2009). Another study found that hazardous drinking mediated the relationship between PTSD symptoms and global ratings of mental health (McDevitt-Murphy et al., 2010). The research clearly identifies PTSD as a major risk factor for alcohol abuse, one that subsequently affects overall mental health.

It is important to remember that PTSD was not an actual psychiatric diagnosis until 1980, when it appeared for the first time in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) (Andreason, 2010). The veterans who came home from war prior to 1980 could not be diagnosed with PTSD at the time of service separation but may now, as older adult veterans, have the PTSD diagnosis. However, it is unclear whether the medical records of all older veterans have been updated to include a PTSD diagnostic code when relevant.

### **The Context of War**

There are five key factors that make the Vietnam War unique and are important to note. First, the Vietnam War was the first armed conflict that the United States lost. It was also a guerrilla war, where boundaries were blurred and citizens could be innocent victims or the attackers. At home, there was controversy about the War that resulted in negative public reactions toward returning soldiers. Different from World War II, and in part due to the draft, soldiers were rotated individually rather than in units, potentially lowering their sense of social support. Finally, soldiers returned home to a slow economy with high rates of unemployment. All of these features contribute different pieces to how soldiers who survived reacted to their

experiences in war. One important characteristic of the Vietnam soldier is that the average age was only 19. This was six years younger than the average age of World War II Veterans (VVA Veteran, 2005). A large number of soldiers were drafted for the Vietnam War, possibly indicating that not enough people in the country wanted to fight. Many Americans who qualified for the draft were poor and racial minorities were disproportionately selected to serve. This is likely because the upper class Americans who were eligible were able to defer the draft for reasons such as attending a university or even knowing a doctor who would certify real or fictitious ailments that made them ineligible to fight. Lawyers could also help find loopholes to prevent them from being called to military service. Returning home was more difficult for those who were poor and/or a minority. In fact, a disproportionate percent of those who left service with a less-than-honorable discharge were black, 21%, or Spanish speaking, 3.5%, which made it even more difficult for them because of social and employment discrimination at home (Calhoun, 1980). The social, political, demographic, and economic features of this war contribute to the effect it had on the soldiers who fought in it.

One study found that 36% of Vietnam army veterans demonstrated “alcoholism or significant alcohol-related problems which could develop into alcoholism” (VVA Veteran, 2005). As discussed above, PTSD is a risk factor for alcohol abuse. Vietnam veterans are at risk for PTSD, especially those involved in combat, even though they may not have been diagnosed when they initially returned to the U.S. Bremner’s (1996) study found that the onset of alcohol abuse was associated with symptoms of PTSD and that patients found alcohol and heroin helpful for the intrusive and hyper arousal categories of PTSD. Alcohol abuse in terms of days of abuse per month was found to be highest over the abuse of heroin, marijuana, benzodiazepines, and cocaine two years after the war, measured every two years for 24 years, post war. McFall’s

(1992) study also noted that veterans of Vietnam with PTSD experienced greater drug and alcohol abuse problems than those veterans without PTSD. Berger noted that sixty to eighty percent of Vietnam veterans seeking treatment for PTSD also have alcohol-use disorders. These studies all point to the fact that PTSD and alcohol-abuse are far too common among Vietnam veterans.

Each war is different and soldiers are exposed to different types of combat, different climates, and a different era of war altogether. These different settings and experiences undoubtedly result in different variables influencing study results. However, because of the lack of research conducted at the time the veterans in this study returned home from war, results of studies conducted more recently related to OEF/OIF military personnel may be useful as a guide to risk factors in order to create a model for the aging veterans from the Korean and Vietnam War eras. The data from Vietnam veterans specifically shows that there is at minimum a connection between PTSD and alcohol abuse, and it is known that one risk factor for PTSD is combat experience, which fits with the data from the more recent wars.

There is a lack of evidence related to follow-up with veterans who fought in the Korean and Vietnam wars related to the use and abuse of alcohol. Further research is needed with this population of veterans to determine what efforts can still be made to assist them to cope with their war experiences and the ways in which they use alcohol. There is a lack of evidence about the risk factors for older veterans in the Central Minnesota area related to alcohol abuse. This study aims to determine if risk factors for these veterans match a more recent model, using the most common alcohol abuse risk factors from the current military population.

Jakupcak et al.'s study (2010) used two logistic regression analyses that evaluated both the relative risk of demographic factors on alcohol abuse and the severity of the four clusters of



PTSD symptoms as predictors of risk for alcohol abuse. This resulted in statistically significant factors indicative of alcohol abuse emerging. Based on the first logistic regression analysis, sex, branch of service, depression status, and PTSD status were significant. The second logistic regression analysis found sex, branch, and PTSD emotional numbing symptoms to be statistically significant. Based on Jakupcak et al.'s findings, this study's purpose is to apply this model to Vietnam and Korean War era veterans. In addition to considering these four factors from the model, factors found to be statistically significant across other studies as being predictive of alcohol abuse, age and direct combat experience, will be included in the application of a refined model.

#### **Research question:**

Is a present day theoretical model of alcohol abuse risk factors in Veterans effective when retrospectively applied to aging Vietnam and Korean War Veterans?

#### **Methods**

Overview of Larger Study, Study Design and Methods:

Since the present study is a segment of a larger one (Twohy, Meijer, McCue, 2011), a bit of information about the larger study can aid the reader's understanding. The study design was a repeated measure, retrospective descriptive study. Arrangements were made for data collection with the director of research at the St. Cloud VAHCS, the Decision Support System (DSS), the primary investigator (required to be a VA employee), and faculty co-investigators. Beginning December 31, 2007, 1200 inpatient and outpatient records were screened for the inclusion criteria (ICD-9 codes for depression, alcohol use/abuse, and falls). On initial screening extraction, there were 98 Veterans who were inpatients and 645 who were outpatients. Since the

study protocol called for 200 outpatients, the PAWS-20 random-sample generator was used to reduce the outpatient group to 200. Data were downloaded to excel files, cleaned, and formatted. In the first three student studies (2012), the co-investigators found that many variables (e.g. annual screening scores) could not be easily extracted by DSS. Additional data were manually extracted from the Clinical Patient Record System (CPRS) by co-investigators for this study.

A number of protections are required for accessing personal health information (PHI) of veterans receiving health services from the VAHCS. The primary and co-investigators participated in the extensive research training required by the VAHCS. ‘Request to review the research proposal’ and ‘application for initial review of medical records-only research’ were submitted and approved by the St. Cloud VAHCS Research and Development (R&D) Committee and affiliate Institutional Review Board (IRB). Careful consideration was taken by the R&D and IRB to review the study for the welfare and protection of human subjects. The proposal was expedited by IRB, as the data were all retrospective and the study was considered minimal risk. Waiver of requirement for informed consent and HIPAA authorization was granted due to the retrospective nature of the study. The primary and co-investigators followed the requirements for human subjects’ protection throughout the research project. The student co-investigators did not have access to files containing raw data; they did have access to output files following analysis.

All data files were stored in a secured, password-protected folder, with the assigned security group on a shared research drive at the St. Cloud VAHCS. The director of research, the primary and faculty co-investigators accessed these files. The drive was inaccessible from off-site locations. All data was de-identified prior to analyses. Analyses were conducted using IBM/SPSS Statistics (Version 21.0). Analysis methods included frequencies, Chi-square for

categorical variables, and t-tests for continuous variables. Case summaries were created that included demographic factors and ICD-9 codes for alcohol use/abuse, PTSD and depression. Case summaries were used to identify patterns of co-morbidities. Table 1 depicts the variables studied.

### Sample

Variables used in study are listed in Table 1 below. The total number of patients with a code of alcohol abuse was 59, all of which were male. Of the 59 men that met inclusion criteria, thirteen fit the model of alcohol abuse and PTSD. Branch of service data was unavailable, but depression status, combat experience and age category data are available and considered.

<b>Table 1. Variables Studied</b>			
Inclusion Criteria	Exclusion Criteria	Demographic Variables	Outcome Variables
-Random sample of veterans, age $\geq 65$ years old 200 inpatients (VAHCS hospital, LTC or assisted living) 200 outpatients (community-dwelling) -Diagnosed with Alcohol use/abuse per ICD-9 coding -At least one of the following ICD-9 Codes pertaining to alcohol: 303.01 303.91 303.92 303.93 305.01 305.02 -For inclusion in model, PTSD code: 309.81 -Could have depression code: 311.00	-Veterans < 65 years old	-Age -Combat Flag (yes/no) -Service Connected percent <i>Covariates:</i> Other ICD-9 codes: 305.10 401.90 781.20 781.30 -Living arrangements -Marital status -Data gathered every Dec. 31 in 2007, 2008, 2009, 2010	-Change in severity of illness -Change in inpatient/outpatient status -Change in living arrangements -Change in marital status

## Results

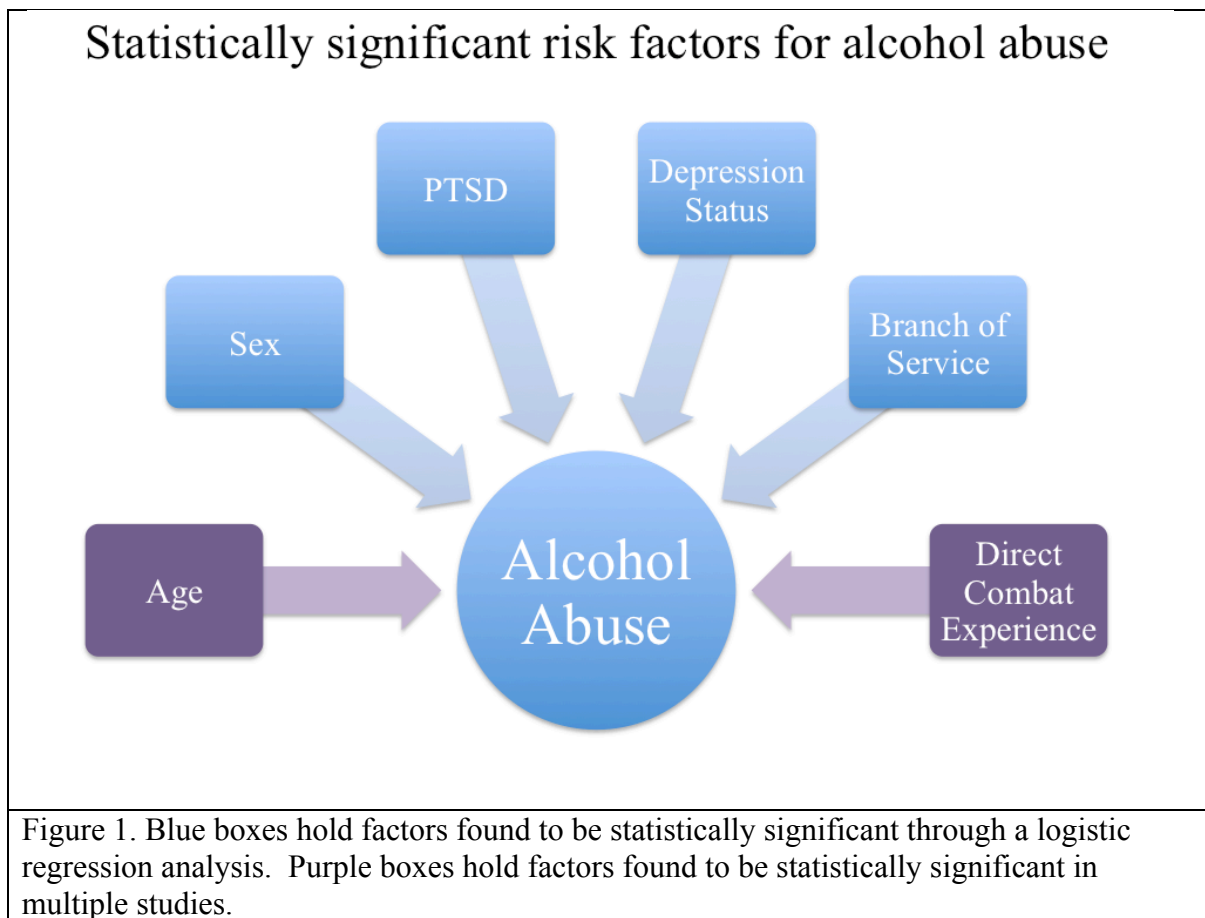
Alcohol abuse codes and then the PTSD code were the starting point for narrowing the sample to examine fit with the model. Thirteen males met inclusion criteria (alcohol abuse codes and PTSD code). Ten ICD-9 codes for each of the thirteen cases were examined and additional co-morbidity patterns were noted. Eight of the thirteen veterans (61.5%) had ICD-9 code 311.00, depressive disorder, not elsewhere classified. This fits the first model in Jakupcak et al.'s study of depression status having a significant correlation with alcohol abuse and veterans. All of the identified contributors in the alcohol abuse model seemed to be applicable to the group of veterans in the present study, excluding branch of service, for which the data is unavailable, but is believed that most were in the Army. The other two factors, age and combat experience, can also be considered with this study. Seven of the thirteen (53.8%) males were in the youngest age category, 65-70 years. Two patients were in the second age category, two in the third, one in the fourth, and one in the fifth. The youngest age group makes up over half of subjects suggesting there might be a correlation between alcohol abuse, PTSD, and young age at time of war. Only three of the thirteen veteran's (23%) charts had combat experience, though this variable was difficult to track in the medical record.

Information not included in the model was also drawn from the thirteen male veterans. Seven of the thirteen veterans are married (53.8%), four divorced (30.6%), and two widowed (15.3%). Seven of the thirteen veterans had the ICD-9 code 401.90 (53.8%), which is unspecified essential hypertension. Nine of the thirteen veterans had ICD-9 code 305.10, which is tobacco use disorder, unspecified use. Since 69% of the study uses tobacco, it might be worth looking further into in relation to alcohol abuse, PTSD, depressive disorder, and branch of military service. Five of the thirteen veterans had an ICD-9 code of 781.20 or 781.30 (38.4%),

abnormality of gait and lack of coordination, respectively. These codes could have been the result of a state of alcohol intoxication during the assessment, longstanding alcohol use or advancing age.

### Model Fit

Even with this small sample size, it seems as though the model designed with research from Iraq and Afghanistan veterans could, in fact, be retrospectively applied to Veterans who fought during the Korean and Vietnam War era. See Figure 1.



### **Limitations**

There were many limitations to this study. This study was an exploratory retrospective analysis of selected medical record data on older adults with alcohol abuse diagnoses. The data was used to assess the fit of an alcohol abuse risk model designed with data from research with Iraq and Afghanistan veterans. A limited number of cases, 13 of 59 (22%) of veterans with alcohol abuse diagnostic codes met the criteria needed to thoroughly assess model fit.

Part of the reason for the small sample size could be that not all of the men who use VA services are regularly screened. Another limitation is missing data. Not all of the risk factors associated with alcohol abuse could be studied because certain pieces are simply not accessible in the clinical record. An additional limitation of the study is not knowing exactly which war each veteran served in. A final limiting factor is that only three veterans had combat experience, which is considered to be a significant risk factor for both PTSD and alcohol abuse. Since there were only three veterans with this experience, it was not possible to assess how much this influenced the model.

### **Conclusions and Recommendations**

Alcohol abuse among veterans is a cause for concern both for veterans fighting today's wars, as well as those who still live with the traumatic memories of wars past. Providing appropriate care for veterans who struggle with alcohol abuse is a must. This study sought to retrospectively apply a present day theoretical model of risk factors for alcohol abuse to the aging Vietnam and Korean War Veterans. With the available data, there are similar correlations between today's military personnel's risk factors for alcohol abuse, and veterans from Vietnam

and Korea. The connection between alcohol abuse, depression status, PTSD, and branch of service in both eras of Veterans is significant in moving forward with addressing the needs of Veterans. Further research needs to be done on the current status of aging Veterans. Future studies could investigate age during time in service as well as current age. They should also include age and combat experience in the analyses with alcohol abuse, depression status, PTSD and branch of service to see if that yields any further information on statistically significant risk factors for alcohol abuse.

Improvements in the clinical record could significantly improve the accessibility of data for both practice and research purposes. The current emphasis in health care on providing evidence-based care requires easily extractable data for ongoing data tracking so that evidence-based care can be delivered to veterans. A clinician or researcher should be able to make a request for data that can be extracted quickly and used for unit tracking or larger research projects.

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