A Comparison of Selected Health Risk Factors between Veteran- and Non-Veteran-Connected Families in Nebraska, 2016 and 2019

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SUMMARY

• This study looks at selected health risk indicators using the Nebraska Behavioral Risk Factor Surveillance System (BRFSS) surveys in 2016 and 2019. We compared U.S. military Veteran and non-Veteran responses, as well as responses from Veteran spouses and significant others, as compared to the rest of the population.

• When comparisons were made between Veterans and non-Veterans, some differences were found in both 2016 and 2019. For example, in 2016, non-Veterans were more likely to have poor mental health, ever told they had depression, be a current smoker, and engage in binge alcohol drinking.

• Significant differences were also found between non-Veterans and the spouses and significant others of Veterans for selective risk factors in 2016 and 2019. For example, in both years, spouses and significant others of Veterans were considerably more likely to have greater mental health distress and depression. However, they were less likely to use alcohol or engage in binge drinking.

• These results indicate that spouses and significant others of Veterans are more likely to suffer from depression and other mental health conditions than Veterans themselves and the non-Veteran population.

• Civilian-serving organizations should develop a greater knowledge and understanding of the culture of military families to implement strategies that effectively support Veteran spouses and partners.
INTRODUCTION

According to the Department of Veterans Affairs, there are 19 million U.S. Veterans in 2021, including 5.9 million who served during the Vietnam era and 7.8 million who served during the Gulf War era (from August 1990 to present) (VA, 2019). Of this latter group, roughly 2.7 million U.S. military personnel have been deployed to Afghanistan and Iraq since October 2001 (NAS, 2021). The complex and durable sequelae of military service have been robustly established, including extensive literature on the physical and psychological health disparities among Veterans, the readjustment needs of Veterans, service members, and their families, and most recently, the health effects of military service on the families of service members.

Several studies have reported the differences between Veterans and non-Veterans in the United States. For example, a recent study compared the prevalence of multiple chronic conditions between Veterans and non-Veterans during the period 2015-2018. This study found that among adults 25-and-over, the prevalence of multiple chronic conditions was higher among Veterans as compared to non-Veterans for both men and women (Boersma et al., 2021). Additionally, certain health behaviors linked to chronic conditions (e.g., smoking, obesity) were higher among Veterans compared with non-Veterans (Odani et al., 2018; Fryar et al., 2016).

Another study concluded that Veterans tend to experience more mental health conditions, substance abuse disorders, and post traumatic disorders than the general population (Gale et al., 2019). A report from the General Accounting Office (GAO) indicated that a higher percentage of Veterans as compared to the general population received substance use disorder treatment in the past year. In 2017, 8 percent of Veterans received substance use disorder treatment from the Veterans Health Administration versus 1.5 percent of all individuals 18-years-or -older (GAO, 2019). Conservative estimates of rates of post-traumatic stress disorder among returning troops are between 12 and 20 percent, and due to stigma and concern over career impact, diagnosis and treatment remain low (Litz & Schlenger, 2009). Meanwhile, the prevalence of depression is estimated at roughly 15 percent (Hoge et al., 2004). Between 10 and 20 percent of U.S. Army soldiers have experienced a concussive event with long-term cognitive implications (Chretien & Chretien, 2013). Rates of suicide are 60 percent higher among Veterans than civilians (Hoffmire, Kemp, & Bossarte, 2015).

Several studies have examined the health status of Veterans based on the National Health and Resilience in Veterans Survey which involved a baseline survey in 2011 and follow up surveys after 2, 4, and 7 years. While some Veterans had post-traumatic stress disorders and suicide ideation (about 14 percent), most Veterans between the ages of 60-96 believed they had aged successfully (82 percent).
Most older Veterans felt that the keys to successful aging were health behaviors, social engagement, and dispositional characteristics such as resilience, gratitude, and purpose in life (Fogle et al., 2020).

Past studies have also examined the health of spouses and significant others of Veterans and found that the lack of social connections and various stressors have negatively impacted their mental health relative to the general population. One study found that the military lifestyle was a major factor that has contributed to adverse mental health outcomes. For example, the active-duty spouse is frequently absent, leaving the partner to shoulder all the burdens alone. In addition, many military families live far from family and friends and have no support system in place (Mailey et al., 2018). Spouses and significant others have also been reluctant to seek help for mental health conditions because of the cost of treatment and inability to attend daytime appointments (Blow et al., 2008; Lewy et al., 2012).

Other barriers included inability to find a counselor who understands the military culture, inability to find a counselor the participant could trust, and concerns about confidentiality (Lewy et al., 2012). Finally, one study examined electronic medical record data from 2003-2006 to assess the mental health diagnoses of spouses of deployed military personnel. This study found that both the deployment of military personnel and the length of deployment were associated with a higher number of mental health diagnoses for their spouses. In comparison with wives of personnel who were not deployed, women whose husbands were deployed from one to eleven months had more diagnoses of depressive disorders (Mansfield et al., 2010).

A recent study in Nebraska examined the health-related risk factors of Veteran/military-connected students using the Nebraska Risk and Protective Factor Student Survey. In 2018, students in the 8th, 10th, and 12th grades who were connected to military members and Veterans were more likely to have worse mental health status as compared to their peers who were not connected to the military. For example, military-connected students as compared to non-military connected students indicated that they considered attempting suicide, attempted suicide, and were more likely to “currently” and “ever” use alcohol, tobacco, and prescription drugs (Palm et al., 2020).

PURPOSE AND METHODS

This study looks at how Veterans and their family members, including spouses and significant others in Nebraska experience selected behavioral health (mental health and substance use) risk factors as compared to the general population. The data for this study were based on the 2016 and 2019 Behavioral Risk Factor Surveillance System (BRFSS) survey in Nebraska. BRFSS is a cross-sectional survey of adults 18 years and over conducted in all 50 states. In Nebraska’s survey, respondents were asked “Have you ever served on active duty in the United States, either in the regular military or in a National Guard or military reserve?
unit.” If they responded “yes”, they were classified as Veterans. Table 1 also shows the other military-related classifications which include “been married to or in a serious relationship with someone who served in the U.S. military.”

The comparisons between the general population and various military classifications were made on a set of 9 indicators, including general health status (fair/poor), poor mental health defined as not good on 14 or more of the past 30 days (yes/no), ever told they had depression (yes/no), current cigarette smoker (yes/no), current smokeless tobacco use (yes/no), current e-cigarette use (yes/no), any tobacco use (yes/no), any alcohol consumption in the past 30 days (yes/no), and binge drank in the past 30 days (yes/no). 5.9 percent of 6,098 adults who were surveyed. In 2019, 777 Veterans participated in the survey which was 12.1 percent of the survey respondents. In 2016, 1,354 or 17.5 percent of survey participants were married to or in a serious relationship with someone they identified as a military Veteran. In 2019, the corresponding number and percentage dropped to 1,204 and 16.5 percent.

SURVEY RESPONDENT CHARACTERISTICS

Tables 2 and 3 summarize the demographic, socioeconomic, and geographic characteristics of Veterans, Veteran spouses and significant others, and the non-Veteran population. The tables indicate that these characteristics

<table>
<thead>
<tr>
<th>Table 1: Number and Percentage of Survey Respondents by Military Status, 2016 and 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterans Who Have Served Active-Duty in the U.S. Military</td>
</tr>
<tr>
<td>Been Married to or in a Serious Relationship with Someone Who Served in the U.S. Military</td>
</tr>
</tbody>
</table>


SURVEY RESPONDENTS BY MILITARY STATUS

In Table 1, the number and percentage of the survey respondents are displayed for the years 2016 and 2019. In 2016, there were 742 active-duty Veterans or
were similar in both years. For example, Veterans as compared to non-Veterans were significantly more likely to be male, older, and have insurance coverage. Slightly more than 48 percent of the Veteran survey respondents were over 65 years of age as compared to only about 16 percent of the non-Veterans.
Veterans were also more likely to be white (non-Hispanic), better educated, and have a usual source of health care. In both 2016 and 2019, Veteran spouses and significant others as compared to the non-Veteran participants have a considerably higher percentage of women, a higher percentage over the age of 65, a larger white non-Hispanic population, a larger percentage of some college/tech education but a lower percentage of college graduates, and somewhat lower income levels. Veteran spouses and significant others also tended to have better insurance coverage and were more likely to have a usual source of care.

Table 3: The Demographic and Socioeconomic Characteristics of Veterans and Non-Veterans BRFSS Respondents in Nebraska, 2019

<table>
<thead>
<tr>
<th></th>
<th>Veterans</th>
<th>Spouses and Significant Others</th>
<th>Non-Veterans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>712</td>
<td>90.36</td>
<td>118</td>
</tr>
<tr>
<td>Female</td>
<td>65</td>
<td>9.64</td>
<td>1,086</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-44</td>
<td>106</td>
<td>28.98</td>
<td>148</td>
</tr>
<tr>
<td>45-64</td>
<td>183</td>
<td>27.71</td>
<td>317</td>
</tr>
<tr>
<td>65+</td>
<td>488</td>
<td>43.32</td>
<td>739</td>
</tr>
<tr>
<td>Urban/Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Large</td>
<td>301</td>
<td>63.67</td>
<td>422</td>
</tr>
<tr>
<td>Urban Small</td>
<td>224</td>
<td>18.68</td>
<td>343</td>
</tr>
<tr>
<td>Rural</td>
<td>252</td>
<td>17.65</td>
<td>439</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (Non-Hispanic)</td>
<td>724</td>
<td>89.94</td>
<td>1,114</td>
</tr>
<tr>
<td>Non-White</td>
<td>53</td>
<td>10.06</td>
<td>90</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Below High School</td>
<td>31</td>
<td>3.42</td>
<td>37</td>
</tr>
<tr>
<td>High School/GED</td>
<td>262</td>
<td>28.37</td>
<td>379</td>
</tr>
<tr>
<td>Some College/Tech</td>
<td>226</td>
<td>39.12</td>
<td>414</td>
</tr>
<tr>
<td>College Graduate</td>
<td>258</td>
<td>29.08</td>
<td>374</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>&lt;$25K</td>
<td>159</td>
<td>15.97</td>
<td>374</td>
</tr>
<tr>
<td>$25-$49,999</td>
<td>226</td>
<td>24.73</td>
<td>391</td>
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<tr>
<td>$50-$74,999</td>
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<td>19.87</td>
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<tr>
<td>$75,000+</td>
<td>243</td>
<td>39.44</td>
<td>251</td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>748</td>
<td>96.06</td>
<td>1,139</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>3.94</td>
<td>65</td>
</tr>
<tr>
<td>Usual Source of Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>697</td>
<td>88.23</td>
<td>1,114</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>13.77</td>
<td>90</td>
</tr>
</tbody>
</table>

STUDY RESULTS

The most significant indicators in both 2016 and 2019 were poor mental health and depression (see Figures 1-4). Figure 1 shows that when compared with the total population, Veterans were more likely to have good mental health, but most Veteran family members indicated that their mental health was not good on 14 or more of the past 30 days in 2016. For example, only 6.41 percent of Veterans indicated that their mental health was not good as compared to 9.37 percent of the non-Veteran population. In contrast, 12.87 percent of the respondents who were spouses and significant others of
Veterans had poor mental health which was statistically significant at the 0.0002 level.

Similar results were found for depression which is illustrated in Figure 2. In 2016, 18.25 percent of the total survey respondents indicated they had been told they have depression, but only 17.80 percent of the Veterans gave the same response. However, 26 percent of the spouses and significant others indicated they had been told they had depression which was statistically significant at the 0.0001 level. It should be noted that the response rate of spouses and significant others was only slightly above the percentage for all women who participated in the survey. In terms of the other risk factor variables, none of them was significant for Veterans, but Veteran spouses and significant others as compared with the total survey population were less likely to use any alcohol (55.22 percent versus 64.70 percent) and engage in binge drinking (11.63 percent versus 23.05 percent). These differences were both statistically significant at the 0.0001 level.

Figures 3 and 4 compare the non-Veteran survey participants with Veterans and military family members for 2019. Veterans continued to have better mental health than non-veterans (9.02 percent versus 10.69 percent). As was the case in 2016, spouses and significant others had poorer mental health than the total non-Veteran population in 2019 (15.94 percent versus 10.69 percent) which was statistically significant at the 0.0002 level. The same pattern was observed for depression. In 2019, Veterans had a lower percentage of depression than the total population (9.02 percent versus 10.69 percent), but spouses and significant others were more likely to have been told they had depression (23.19 percent versus 16.94 percent). This difference was also statistically significant at the 0.0001 level.
In 2019, spouses and significant others continued to have low alcohol use and were less likely to binge drink than the total population. Both differences were significant at the 0.0001 level.

**DISCUSSION**

Compared to other studies, Veteran survey participants as compared to the non-Veteran population in Nebraska were less likely to have frequent mental distress or depression in both 2016 and 2019. Although some studies have found that Veterans tend to have higher rates of frequent mental distress and depression (Gale et al. 2019; Hoge et al., 2004), our results suggest that Veterans are less likely to have mental distress. This conclusion is consistent with a 2013 study based on the National Health and Resilience Veterans Study. This study found that about 70 percent of older U.S. Veterans who have endured a high number of traumas in their lifetimes are psychologically resilient in later life (Pietrzak and Cook, 2013). Fogle et al. reviewed 82 studies that were based on the National Health and Resilience Veterans Study and found that older Veterans were aging successfully, and that physical and mental health difficulties were most strongly related to successful aging. After adjusting for these risk factors, however, resilience, gratitude, purpose in life, and community integration were most likely to lead to successful aging (Fogle et al., 2020). As a result, prevention efforts should be targeted toward bolstering social connectedness, community integration, and purpose in life to help promote psychological resilience in older Veterans who endured a significant number of traumas in their lives (Pietrzak and Cook, 2013).

Unfortunately, spouses and significant others of Veterans as compared to the non-Veteran participants were experiencing significantly higher levels of frequent mental distress and depression in both 2016 and 2019.
These results appear to be consistent with past studies (Bailey, 2018; Steenkamp et al., 2018; Blow, 2008; Mansfield et al., 2010). Past studies have identified several factors that have contributed to higher levels of adverse mental health conditions. For example, spouses and significant others often experience barriers to making social connections throughout their military life. Because most military families move every two or three years, some spouses and significant others felt that making long-term friendships was not worth the time and effort involved. In many instances, they also lived far from family and friends, so they lack a strong social support system. Spouses also reported that they were trying to do it all on their own while their partners were away (i.e., balancing work, childcare, and household needs). Some military spouses also found it difficult to connect with individuals who were not in the military because they often did not understand the military culture (Mailey et al., 2018).

Another major factor creating stress was the uncertainty associated with military life. Deployment created high stress due to lack of communication, anxiety related to their spouse’s well-being, and loneliness. Beyond deployment, however, schedules changed often so that it was difficult to plan for family events, and this uncertainty created an underlying sense of stress that never really abated (Mailey et al., 2018). In addition to these factors, there are several barriers to accessing mental health services, including the cost of services and getting time off work for treatment (Blow et al., 2008). Lack of trust, confidentiality, and knowledge of military culture have also been identified as significant barriers to receiving care (Lewy et al., 2012). These problems may be magnified across Nebraska because of a severe shortage of mental health professionals. According to the Nebraska Office of Rural Health, out of the state’s 93 counties, 88 are considered state mental health professional shortage areas (Nebraska Office of Rural Health, 2021). The shortage of mental health professionals is even more acute in Nebraska’s frontier counties (i.e., less than 6 persons per square mile), which are mainly located in the central and western part of the state. In these sparsely populated areas, the Veteran population is proportionately about the same as the general population (Thompson, et al., 2021). The access issues for older and disabled Veterans are exacerbated because public transportation is either very limited or non-existent.

These results indicate that both clinical and prevention programs are needed to address these issues. There is also a need to better understand the factors that lead to resilience in military spouses and significant others. A recent Army study found that the characteristics most associated with resilience included social support, less work-family conflict, and better soldier mental health (Robert Sinclair, et al., 2019). More studies are needed to identify resilience factors so that more targeted interventions can be developed.

In Nebraska, a local public health system approach is used to address the
challenges of military-connected families. VetSET Nebraska is a 2021 NACCHO Model Practice which builds broad, community awareness to support families in their communities. Strategies include military cultural competence development, as well as targeted suicide prevention capacity building. More information can be found at the Nebraska Association of Local Health Director’s (NALHD) website: www.nalhd.org

LIMITATIONS

The BRFSS data are based on self-reporting, which may lead to underreporting of some behaviors (e.g., alcohol and tobacco use and mental health disorders). It was also not possible to distinguish the type of military connection, such as current Active-Duty service member, Guard member, or Reservist, which makes it more difficult to target specific interventions to a particular group.

CONCLUSION

The findings from this study were not consistent with other studies regarding frequent mental distress and depression. In our study, the non-Veteran population was more likely to suffer from frequent mental distress and depression than were Veterans. However, Veterans’ spouses and significant others were more likely to suffer from depression and other mental health conditions than the general population. Although there have been numerous studies on the health and well-being of Veterans, more studies are needed to identify the physical and mental health conditions of family members connected to Veterans.

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SUGGESTED CITATION

CONFLICT OF INTERESTS

None

DISCLAIMER

The views expressed herein are those of the authors and do not necessarily reflect the views of collaborating organizations or funders, or of the Regents of the University of Nebraska.

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