

US Veteran Suicides Project Summary

BY

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I decided to do my project on veteran suicides in the United States from 2001-2021. I downloaded the data set from:

*U.S. Department of Veterans Affairs

https://www.mentalhealth.va.gov/docs/data-sheets/2021/VA_State_Sheets_2001-2021_Appendix_508.xlsx

After cleaning, organizing, plotting, and using data visualization we were able to answer the following questions:

1. Which year has the highest and lowest number of veteran suicides?

2018 has the highest number of veteran suicides with 6718. Followed by 2017, 2014, 2015, and 2008.

2001 has the lowest number of veteran suicides with 6000. Followed by 2004, 2003, 2006, and 2005.

2. Which states have the highest and lowest number of veteran suicides in 2021?

The state with the highest number of veteran suicides in 2021 is Texas with 583. Followed by Florida, California, Pennsylvania, and Ohio.

The state with the lowest number of veteran suicides in 2021 is District of Columbia with 10. Followed by Rhode Island, North Dakota, Vermont, and Hawaii. Later we will answer if population is a factor.

3. Which region has the highest mean of veteran suicides?

The region with the highest mean of veteran suicides is the Southern region with a mean of 155.176471. Later we will answer if population is a factor.

4. Are veteran suicides increasing over the years?

Though the numbers do vary, including a general overall increase, there is no evidence that there is a dramatic increase in the suicide rate.

5. Are men or women more at risk for veteran suicide?

It is likely there is strong evidence that men are at a higher risk but without the overall number of men and women in the population the finding is inconclusive.

6. Which age groups have the highest and lowest number of veteran suicides?

From 2001-2005 the age group 35-54 had the highest number of veteran suicides followed by 55-74, 75+, and 18-34. In 2006 35-54 and 55-74 were similar counts with 75+ and 18-34 unchanged in their order. Starting in 2007 55-74 overtook 35-54 with the highest number of veteran suicides with the remaining age groups still in their same order.

7. Are the age groups and their suicide rates consistent over the years?

Though there is slight variance in each of the 4 age groups there is strong (18-34, 75+) to moderate (35-54, 55-74) evidence that suicides are relatively consistent and normally distributed.

8. What are the highest veteran suicide rates per 100k of population for the states in 2021?

The 5 highest states by suicide rate are Wyoming (80.0), Colorado (56.1), Montana (51.2), Nevada (50.7), and Oregon (49.6).

9. Did the order of the highest and lowest states change based on the population?

The highest ranked states changed drastically. By number they were Texas, Florida, California, Pennsylvania, and Ohio. By rate they were Wyoming, Colorado, Montana, Nevada, and Oregon. The lowest ranked states also had minor changes but had some consistency as well. By just numbers they were District of Columbia, Rhode Island, North Dakota, Vermont, and Hawaii. By rate they were District of Columbia (based on the 0 this data was a bit inconclusive), New Jersey, Hawaii, Rhode Island, and Massachusetts.

10. What is the mean of veteran suicide rates per 100k of population for each region?

The mean of the regions are as follows:

Western 33.238095
Southern 29.019048
Midwestern 27.919048
Northeastern 22.285714

11. Did the order of the regions change based on the population?

Southern was the highest by number and Western by rate but each was no lower than second. Midwestern and Northeastern were unchanged.

12. Are the veteran suicide rates per 100k of population for the regions changing?

here is moderate evidence it is generally increasing over the years but not at a static rate and can vary.

13. Are veterans more vulnerable to suicide than the general population?

There is strong evidence that it is likely veterans are at a much higher risk than the general population.

The results of the hypothesis testing are as follows:

❖ Pearson's Correlation Test

- According to the Pearson's Correlation test with a p-value of 0.000 it is likely there is strong evidence that the correlation is significant between the veteran and general population suicides.

❖ Correlation Matrix

- With a value of 0.9645344444756127 this shows strong and positive correlation meaning when one variable increases, the other tends to as well for the Veteran and General Population Suicides.

❖ Normal Distribution Test

- Based on the p-value of 0.00 for both the Veteran and General Population Suicides we say data does not follow a normal distribution: Reject H_0 . We also visually confirmed this with a Seaborn histogram

❖ Chi-Squared Test

- Based on the p-value of 0.000 for the Veteran and General Population Suicides we say they are probably dependent. Meaning when one variable increases, the other tends to as well

❖ One sample z test

- Based on the p-value of 0.0 we say the result is not significant or it is unlikely there is enough evidence to reject the null hypothesis in favor of the alternative hypothesis.