

Homeless Veterans: An Educational Link?

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Abstract

Homelessness in the United States is increasing and veterans of military service are not absent from the homeless epidemic. The preponderance of destitute persons has prompted both public and private organizations to seek causes and solutions. A study was conducted to determine if the veteran's education level is related to the amount of time that he/she is homeless.

Respondents were surveyed at homeless shelters in California, results computed, and interpreted. There is not a correlation between education level and duration of homelessness. Further studies hope to provide more definitive answers and remedies, that will decrease the number of persons living on the streets.

There are over a half million people experiencing homelessness, which is roughly 17 out of every 10,000 people in the United States (National Alliance to End Homelessness, n.d.). The National Coalition of Homeless Veterans offers decisive and unsettling information on the preponderance of homeless veterans within the United States and is further specified in Appendix I. The task of collecting information about the homeless population is daunting, with an estimated 32% being military veterans (Elbogen, 2013). Within the United States, a vast network exists to provide resources for veterans. California Veteran Support (CVS) is one such organization. CVS strives to make more provisions available to those in need and have contracted a study to determine a link between educational level and the time spent living on the street. Utilized properly, this information can facilitate effective results for a booming and unfortunate population.

### **Collection of Data**

An observational study was conducted in various California cities. In an observational study, the researcher does not control or manipulate any of the variables or participants. The 31 homeless veterans were asked how many months they had lived on the streets, as well as the grade they finished in school (one year of college would be 13, 4 years of college would equal 16, a GED would equal 12). The term post-secondary will be used in lieu of college and/or technical training. The sampling method used was random selection, participants chosen by chance. The data obtained was numerical, filling columns for “Education Years” and “Homeless Months.”

The survey was conducted at homeless shelters, where the already knowledgeable shelter staff initiated the conversations. The questions were answered privately, on paper; a direct

exchange did not take place. Errors in determining education years may have occurred and the lack of dialogue exacerbated the omission. For instance, three individuals responded that their education level was less than the aforementioned equivalency (nine and ten respectively). This could lead to the data being omitted or misinterpreted: did the individual enter service through a GED after completing grade nine or ten? Did the individual enter the service prior to the now mandatory high school diploma requirement? The possibly erroneous data is slight so it will remain in the study.

### Organization of Data

#### Summary statistics:

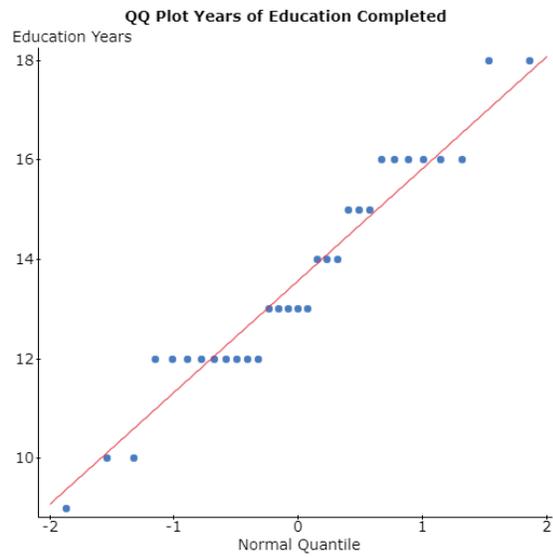
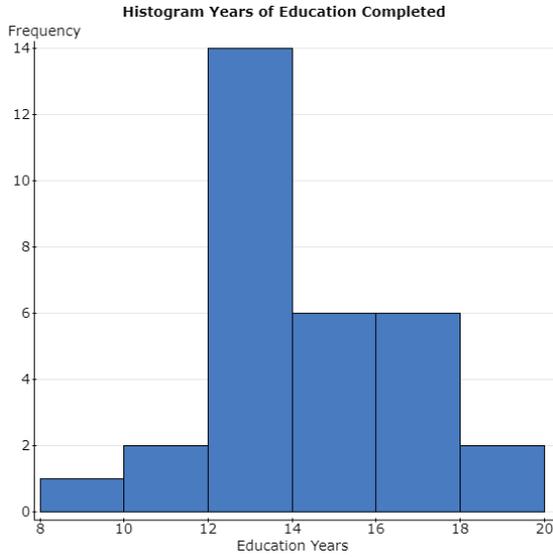
Column	Mean	Std. dev.	Min	Max
Education in years of school	13.580645	2.2475793	9	18
Homelessness in months on the street	13.903226	7.8924218	4	35

The mean for education years is 13.58 years, with a standard deviation of 2.25. The mean is found by adding the numbers and then dividing by how many numbers in total. The 2.25 deviation is the number of years the population veers from the average of 13.58 years.

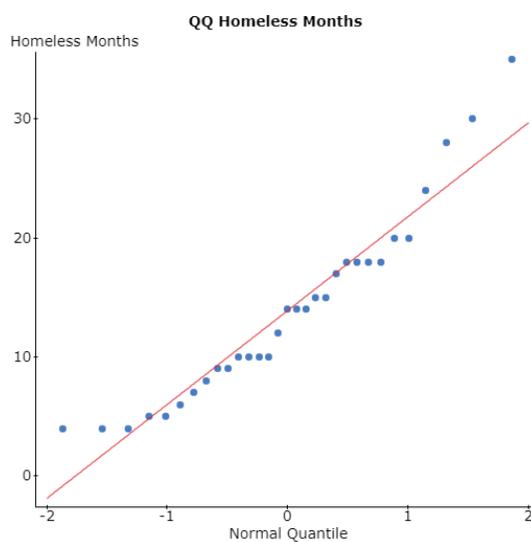
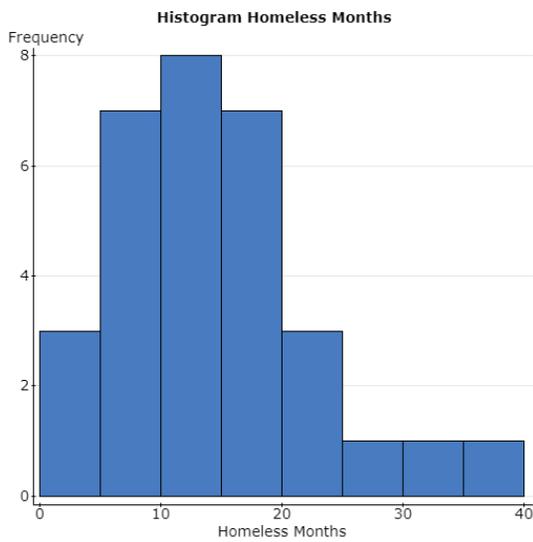
According to the data, a minimum of nine education years, and a maximum of 18 education years. A median of 13 years is the middle data point of the respondents, the middle respondents of veterans having undertaken one year of college. The mean/average of homeless months is 13.90 months, with a standard deviation of 7.89 months, a minimum of four months, and a maximum of 35 months.

Several different graphs will be utilized to compare and contrast data. First, a Histogram, which determines the frequency of occurrences in the data set. Second, a QQ Plot, “Quantile-Quantile,” which determines if the two sets of data come from exclusive distributions. Third, a

Scatterplot, seeks to find a relationship between the data sets. Lastly, a Box Plot, which provides a visualization of how the data is spread.



The first histogram shows the majority of respondents went to college, though the actual degree is both irrelevant and unknown. It does not have a bell-shaped composition. The discrepancy previously mentioned could explain the data disagreement.



The homeless months histogram shows a bell-shape and slight skew to the right, depicting more homeless months. This is confirmed by the normal distribution in the QQ graph, complete with low and high tails.

Another statistical device, accompanied by the Box Plot, is the 5-number summary, which takes the entire data, and categorically divides it into five distinct pieces, from smallest to largest.

(See Appendix II and Appendix III.)

The 5-number summary for “Education Years” is as follows:

1. Minimum/Smallest: 9 years (less than high school diploma)
2.  $\frac{1}{4}$  of the data/Q1: 12 years (no college but completion of high school)
3.  $\frac{1}{2}$  of the data/Median: 13 years (some college)
4.  $\frac{3}{4}$  of the data/Q3: 16 years (Bachelor’s degree)
5. Maximum/largest: 18 years (6 years of college)

For education years, the boxplot shows that the middle “Median” education years is 13 years, so the majority of respondents had some college experience.

The 5-number summary for “Homeless Months” is as follows:

1. Minimum/Smallest: 4 months of homelessness
2.  $\frac{1}{4}$  of the data/Q1: 8 months of homelessness
3.  $\frac{1}{2}$  of the data/Median: 14 months of homelessness
4.  $\frac{3}{4}$  of the data/Q3: 18 months of homelessness
5. Maximum/largest: 30 months of homelessness

A highly significant outlier is one veteran’s 35 months of homelessness. An outlier is a data set which exists outside of the pattern of data distribution. The 35 months is a troubling number.

**Analysis of Data**

In an effort to determine if there is a meaningful relationship between education years and homeless months, a hypothesis test was conducted; it is used in statistics to regulate probability. A claim has been made that a correlation exists between education years and homeless months. In other words, the more educated a veteran is, the less time he/she will spend homeless after separation from active duty. Next, a **0.05** significance level was selected (referred to as the  **$\alpha$**  or **alpha**), accounting for a possible 5% chance of error in the testing. Sample size is greater than 30. In statistical analysis, the dependent variable is the variable which is the primary focus of the study, specifically the amount of time a veteran is homeless; the data does not change. The independent, in this case, education years, may affect the length of homelessness.

**Null Hypothesis ( $H_0$ ):** The number of post-secondary education years is related to the amount of time he/she is homeless.

**Alternative Hypothesis ( $H_a$ ):** There is no relationship between the number of post-secondary education years and the amount of time he/she is homeless.

In symbolic form:

**Null Hypothesis ( $H_0$ ):**  $\rho = 0$

**Alternative Hypothesis ( $H_a$ ):**  $\rho \neq 0$

In an effort to determine if a relationship exists between education years and homeless months, Scatterplot test (Appendix IV) was conducted. Results of the Scatterplot do not show a discernable pattern or linear relationship, but the issue is very important so further testing is required.

Using StatCrunch for a 2-tailed test and displayed on Appendix V, the test statistic,  $t$ , is -0.266, and the P-value is 0.792. Since the P-value is greater than the  $\alpha = .05$ , the hypothesis is rejected. Sufficient information exists to support the Alternative Hypothesis that education months is not related to homeless months.

### Conclusions and Recommendations

All the numbers are troubling and such a large period of homelessness is definitive proof that the efforts to implement change and provide alternatives are needed immediately. Further studies could focus on mental health and financial management issues. Military life is regimented and, in some ways, unyielding. We are told what to do, where to do it, and their choices are held to a higher expectation. This lack of direction can lead to mistakes after leaving the service. Proper preparation for civilian responsibilities may circumvent such harsh consequences of poor decisions. The lack of housing is but one obstacle facing homeless veterans. Interventions through various resources could have a profound effect; these include credit counseling, utility assistance, dental care, disability income and legal assistance for both child support and evictions/foreclosures (Chaleng, 2019).

### References

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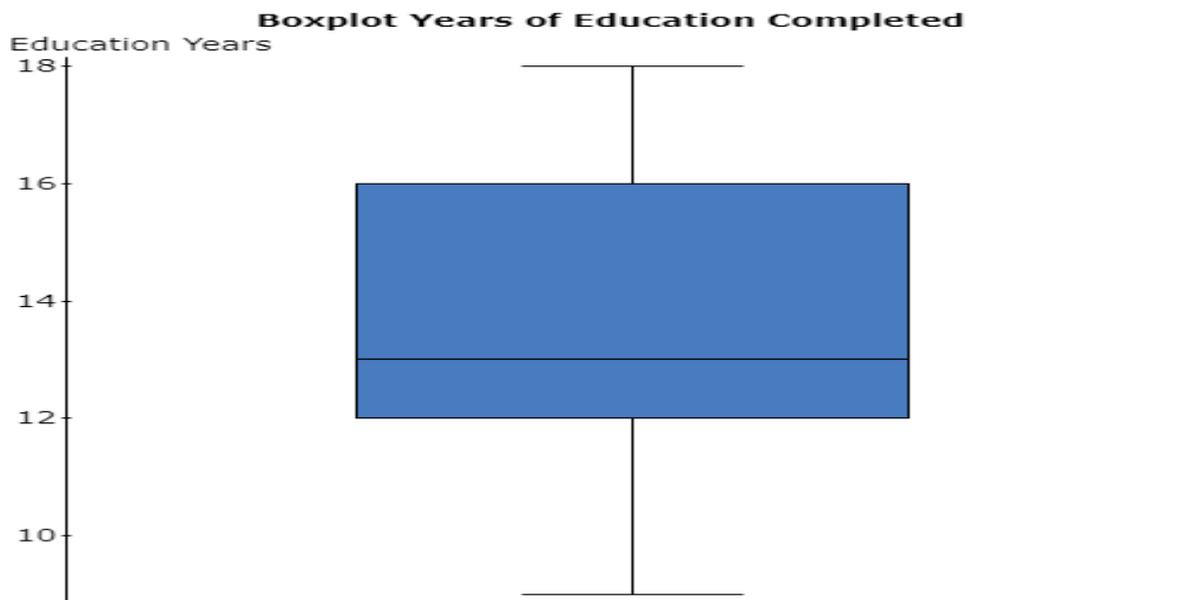
## Appendix I

Information obtained from the National Coalition for Homeless Veterans; they are a non-profit organization who provide job training, legal assistance, and resources. Specific data such as this can provide the user with valuable information.

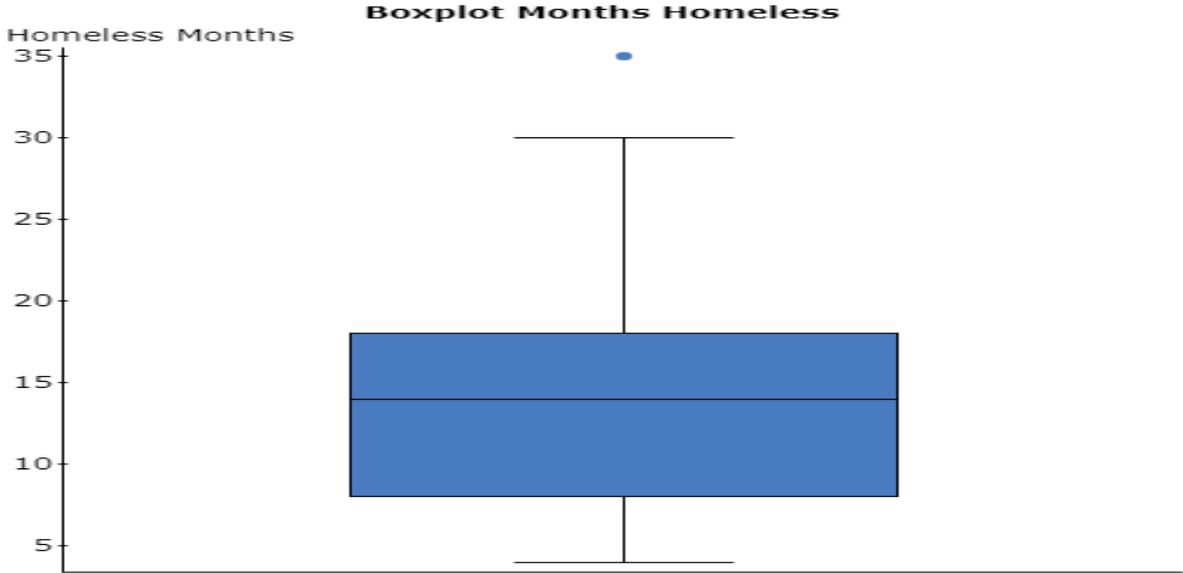
## DEMOGRAPHICS OF HOMELESS VETERANS

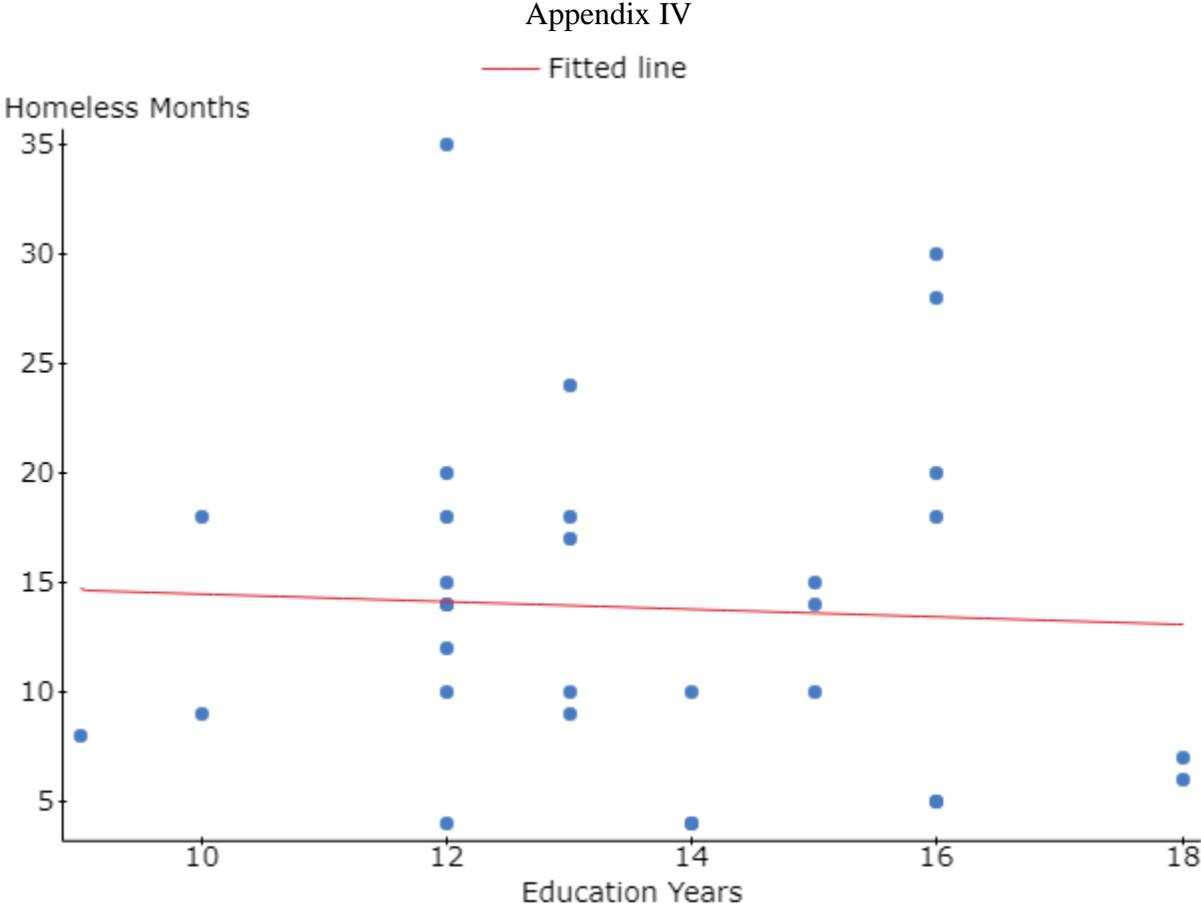
- 11% of the homeless adult population are veterans
- 20% of the male homeless population are veterans
- 68% reside in principal cities
- 32% reside in suburban/rural areas
- 51% of individual homeless veterans have disabilities
- 50% have serious mental illness
- 70% have substance abuse problems
- 57% are white males, compared to 38% of non-veterans
- 50% are age 51 or older, compared to 19% non-veterans

## Appendix II



Appendix III





Equation for the red line is  $y = 16.256279 - .017326522 * x$

## Appendix V

**Simple linear regression results:**

Dependent Variable: Homeless Months

Independent Variable: Education Years

Homeless Months = 16.256279 - 0.17326522 Education Years

Sample size: 31

R (correlation coefficient) = -0.04934193

R-sq = 0.0024346261

Estimate of error standard deviation: 8.0175671

**Parameter estimates:**

Parameter	Estimate	Std. Err.	Alternative	DF	T-Stat	P-value
Intercept	16.256279	8.9612409	≠ 0	29	1.8140657	0.08
Slope	-0.17326522	0.6512788	≠ 0	29	-0.26603848	0.7921

**Analysis of variance table for regression model:**

Source	DF	SS	MS	F-stat	P-value
Model	1	4.5496093	4.5496093	0.07077647	0.7921
Error	29	1864.1601	64.281382		
Total	30	1868.7097			

## Appendix VI

Original data, retrieved from Professor Turner, Brandman University.

Education in years of school	Homelessness in months on the street
16	5
13	10
12	4
12	12
18	7
12	10
16	20
16	18
12	20
13	17
14	4
9	8
10	9
15	15
12	14
13	9
10	18
12	35
16	28
15	14
12	18
14	4
14	10
15	10
12	15
13	24
16	5
16	30
18	6
12	14
13	18