EDM_SRF

2024-09-29

```
library(ggplot2)
library(sjPlot)

## #refugeeswelcome

library(readxl)
depress <-read_excel("/Users/samanthafii/Desktop/math 130/depress.xlsx")
```

I decided to use the depression data set for my final analysis.This data was collected from a study on depression, collected from 294 adults in Los Angeles. The two variables i will be studying are cases and health. Cases is demonstrating whether or not a person has depression by a score of 16 or higher cesd score. The cesd measures their scores based on mental state over a 20 day period, the higher the score the more depressed a person is. I will be studying this variable as well as the health variable that refers to how healthy a person is on a general level 1=exellent 2=good 3=fair and 4=poor. I want to use this analysis to see if there is a connection between poor health and depression scores.

Univariate variables

```
depress$CASES <- factor(depress$CASES, labels =c("depressed", "not depressed"
) )
table(depress$CASES, useNA = "always")

##
##      depressed not depressed          <NA>
##            244            50             0
```

This study shows that there are 244 non depressed individuals and 50 depressed ones. It can be observed by looking at the the table above.

```
depress$HEALTH <- factor(depress$HEALTH, labels =c("excellent", "good", "fair
", "poor"))
table(depress$HEALTH, useNA = "always")

##
## excellent      good      fair      poor      <NA>
##       130       115        35        14         0
```

in this study 130 participants reported excellent health, 115 reported good health, 35 reported fair health and 14 reported poor. This shows that 44% of the participants were in excellent health, 39% were in good health, 12% were in fair health and 7% were in poor health

```
ggplot(depress, aes(x=HEALTH)) + geom_bar()
```
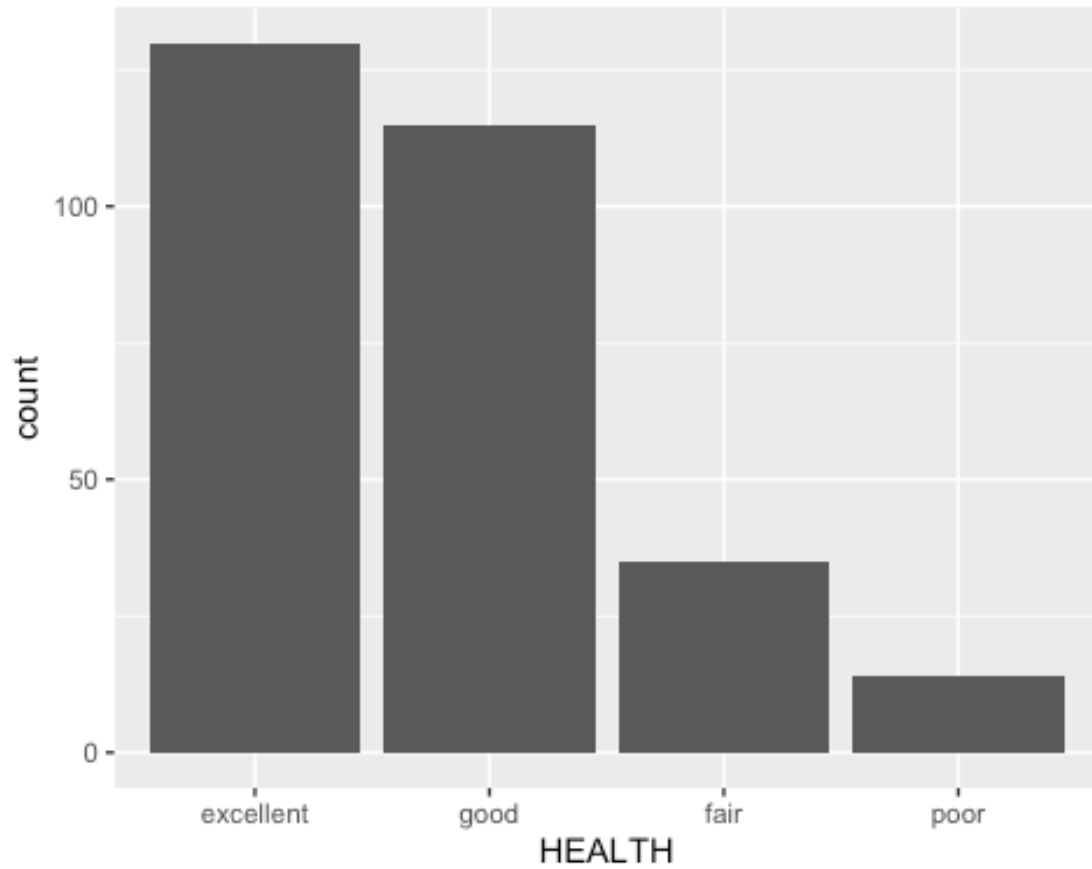
the graph shows that there were more excellent health participants and good health compared to fair and poor health participants.

```
ggplot(depress, aes(x=CASES)) + geom_bar()
```
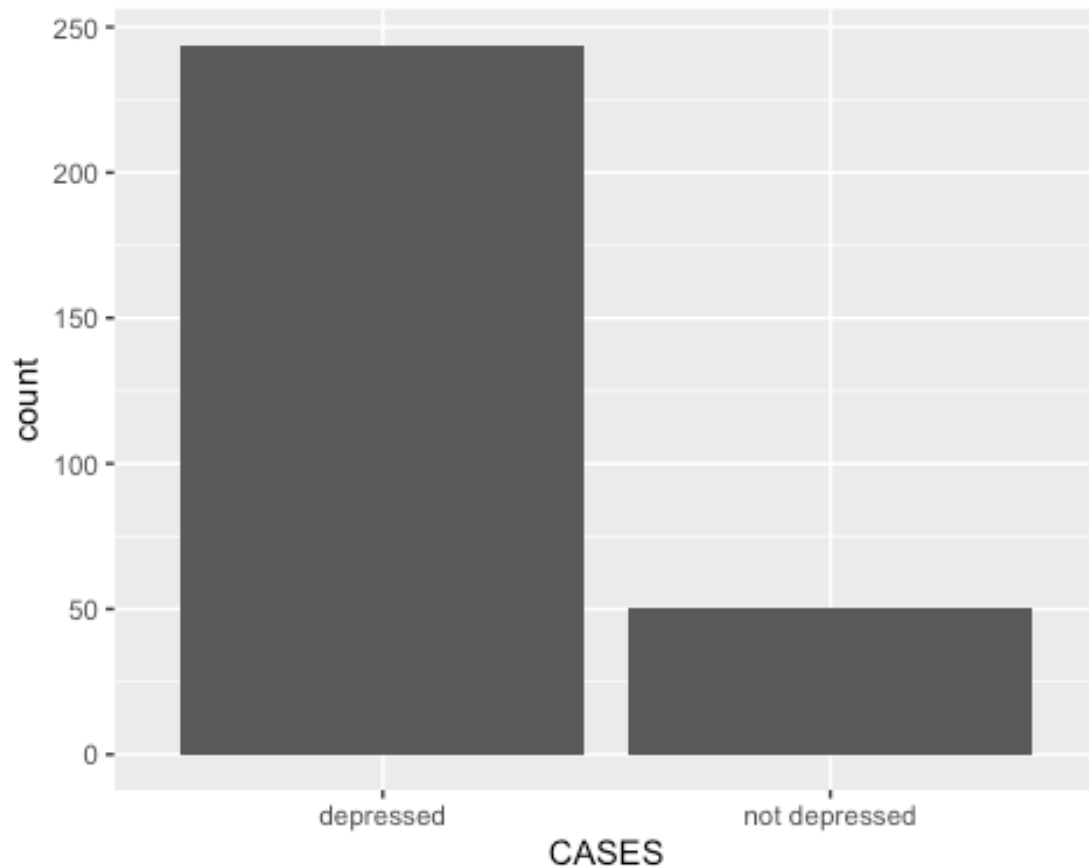
the graph shows the study had a much higher number of depressed individuals, roughly 240 depressed and 50 non depressed.
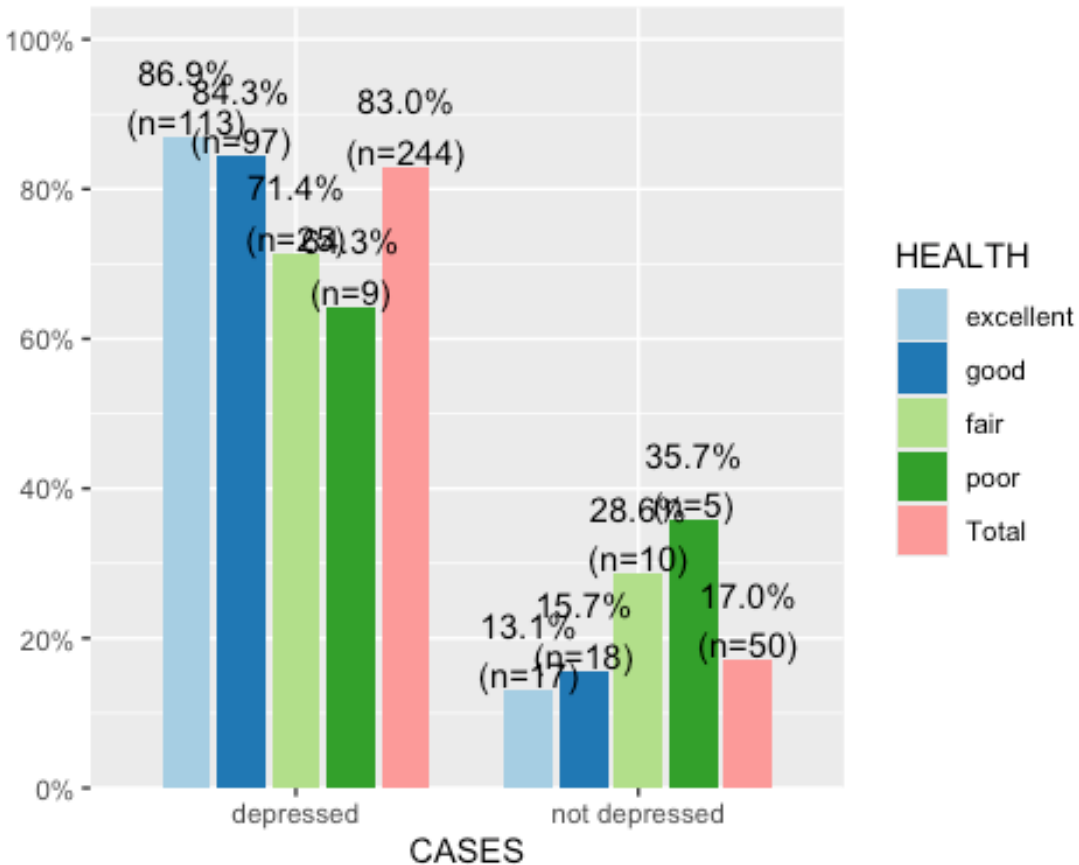
Bivariate exploration

```
table(depress$CASES, depress$HEALTH)

##
##                 excellent good fair poor
##    depressed          113   97   25    9
##    not depressed       17   18   10    5
```

The comparison between depression and health shows that there were 9 individuals in poor health who were depressed compared to 5 that were not depressed which could indicate that of those in poor health a contributing factor could be their depression.However much to my suprise there were also a larger amount of people who were in excellent health and depressed then non depressed with only 17 being in excellent health compared to 113 depressed and in excellent health.

```
plot_xtab(depress$CASES, depress$HEALTH)
```

100% -

86.9%
(n=113)
84.3%
(n=97)
83.0%
(n=244)
71.4%
(n=25)
64.3%
(n=9)

80% -

60% -

40% -
35.7%
(n=5)
28.6%
(n=10)

20% -
13.1%
(n=17)
15.7%
(n=18)
17.0%
(n=50)

0% -

depressed   not depressed

CASES

HEALTH

- excellent
- good
- fair
- poor
- Total

the above graph shows the percentage of those in excellent, good, fair and poor health grouped by whether they are depressed or non depressed. For the depressed group 86.9% were in excellent health 84% were in good health, 71% were in fair health and 4.3% were in poor health making Excellent the majority of those with depression. In non depressed individuals 35% were in poor health, 28.6% were in fair health, 15.7% were in good health and 13.1% were in excellent health. This data is the opposite of my hypothesis and shows that depressed individuals actau;;y showed better health results than those without.

Conclusion In conclusion, it can be shown that depression did not directly correlate to poor health. While those with depression had 9 individuals in poor health compared to the 5 with poor health in the non depressed group the overall total of excellent health individuals in the depressed group showed that the majority of those with depression had better health than those without it. My hypothesis of poor health being libnked to depression can be observed through the analysis and is proven false.Depression is not a direct cause of poor health in individuals.