Week 5: Analysis of Depression Statistics

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```
knitr::opts_chunk$set(tidy.opts=list(width.cutoff=80), tidy=TRUE)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(ggplot2)
library(forcats)
library(gridExtra)
```

```
##
## Attaching package: 'gridExtra'
```

```
## The following object is masked from 'package:dplyr':
##
##     combine
```

```
library(RColorBrewer)
library(sjPlot)
library(formatR)
```

Introduction

In this report I will be analyzing data taken from interviews in the Los Angeles County, interpreting the correlations of adulthood depression and their livlihoods. This data contains 294 observations and 37 different variables, and out of this I am chosing to compare CESD levels and their drinking habits. The CESD is a continuos variable pertaining to the individuals about how they rate their own depressive feelings from 1-60 - 1 being the lowest level possible and 60 being the highest. I hypothesize that those with a higher or more intense CESD level are aso regularly drinking.

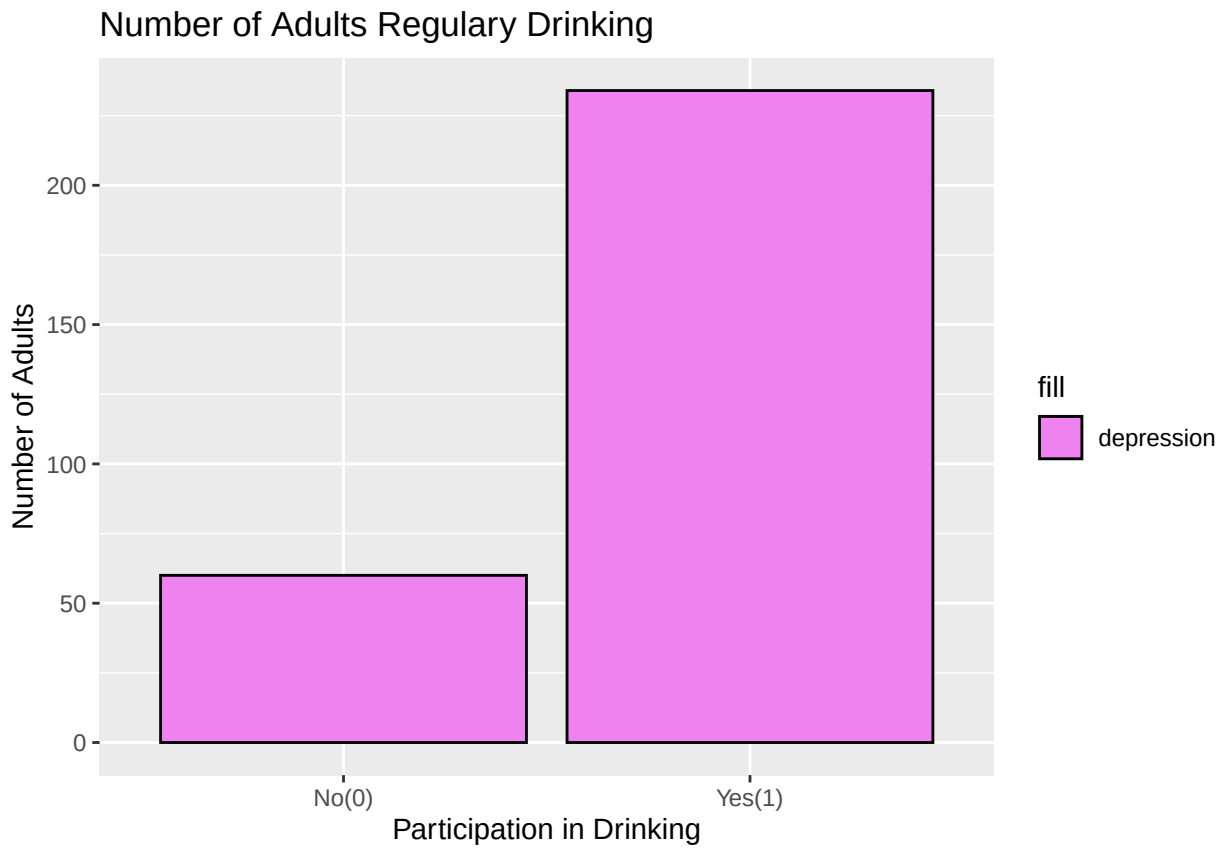
Univariate Analysis:

```
depression$drink <- factor(depression$drink, labels = c("No(0)", "Yes(1)"))
summary(depression$drink)
```

```
##  No(0) Yes(1)
##     60    234
```

The table shown above provides information about the number of adults that reported regular drinking from the LA County. Above we can observe that there were a greater number of adults who did engage in regurlary drinking, being 234 while only 60 adults in this study did not partake in regularly drinking.

```
ggplot(depression, aes(x = drink, fill = "depression")) + geom_bar(color = "black") +
    ggtitle("Number of Adults Regulary Drinking") + ylab("Number of Adults") + xlab("Participation in Di
    scale_fill_manual(values = c("violet"))
```



Shown above is a graph depicting the amount of adults who participated in drinking directly from the data table.

```
summary(depression$cesd)
```

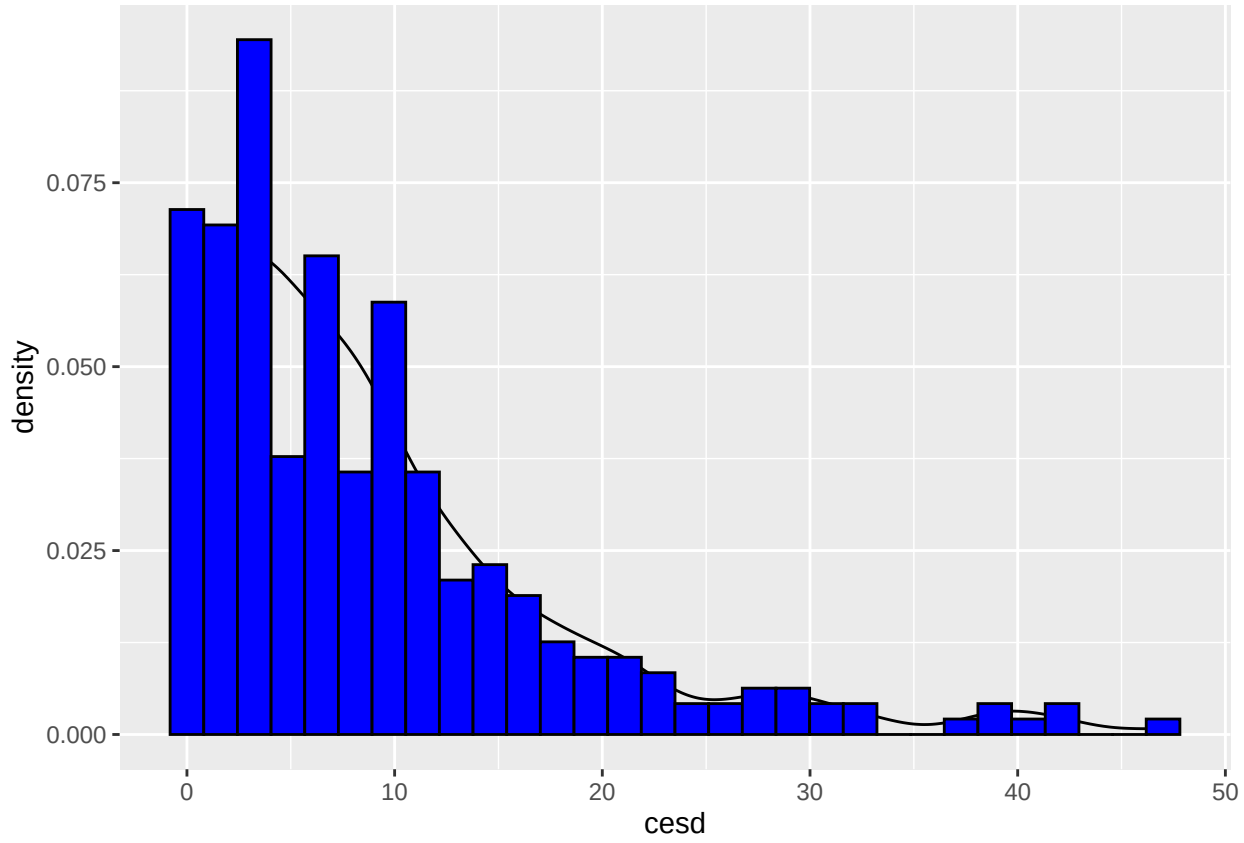
```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   3.000   7.000   8.884  12.000  47.000
```

Above is a table that corresponds to the data received about cesd levels in the adults that responded to the study in the LA county. This graph tells us that the mean number reported was 8.884 and the maximum number reported of the csed levels was 47.

```
ggplot(depression, aes(x = cesd)) + geom_density(col = "black", ) + geom_histogram(aes(y = ..density..)
    colour = "black", fill = "blue", fill = NA)
```

```
## Warning: Duplicated aesthetics after name standardisation: fill
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



Shown above is a density histogram to represent the table calculated above relating to the csed levels of adults with depression in the LA County.

Bivariate Exploration

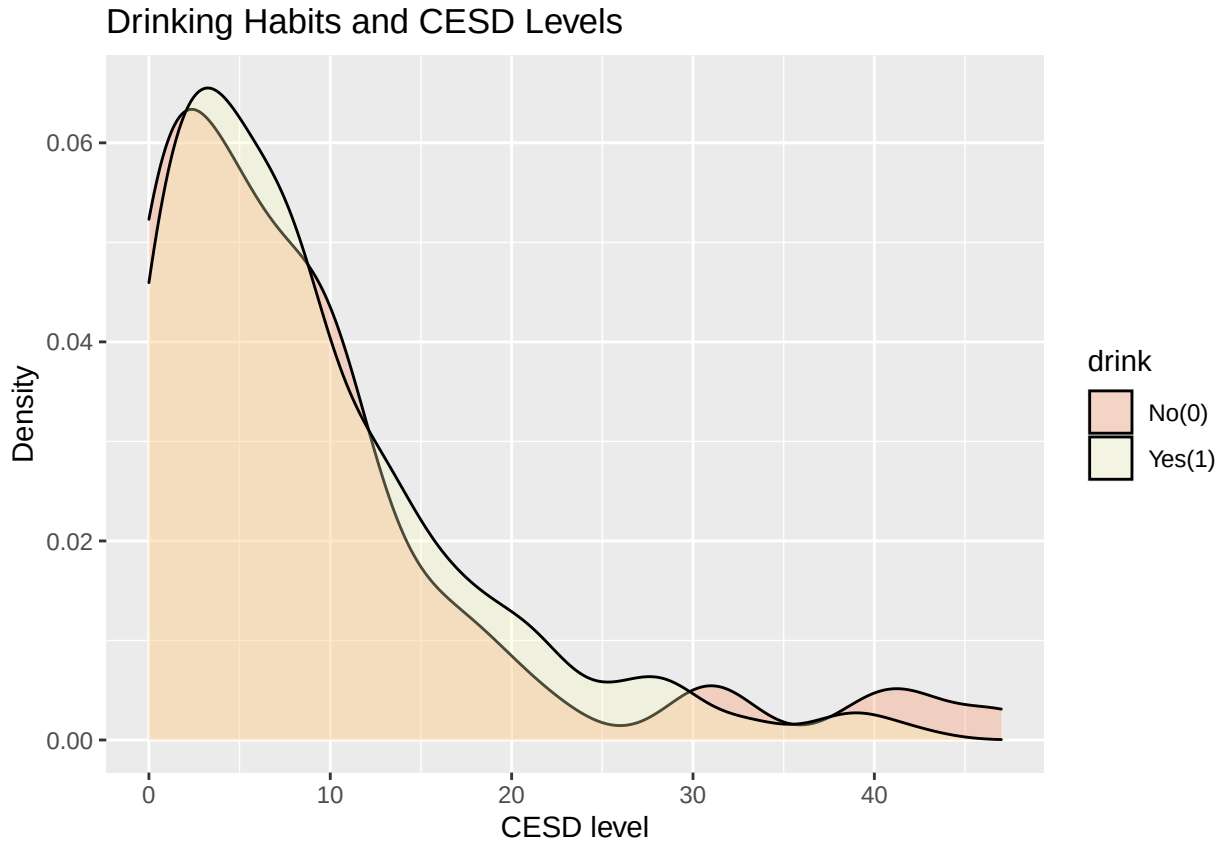
```
table(depression$drink, depression$cesd)
```

```
##
##            0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22
##   No(0)    9  5  4  2  4  4  5  1  1  4  6  2  0  2  0  2  0  1  1  1  0  0  1
##   Yes(1) 25 15  9 23 16 14 10 15 16 13  5  5 10  8  5  4  5  3  5  2  2  5  3
```

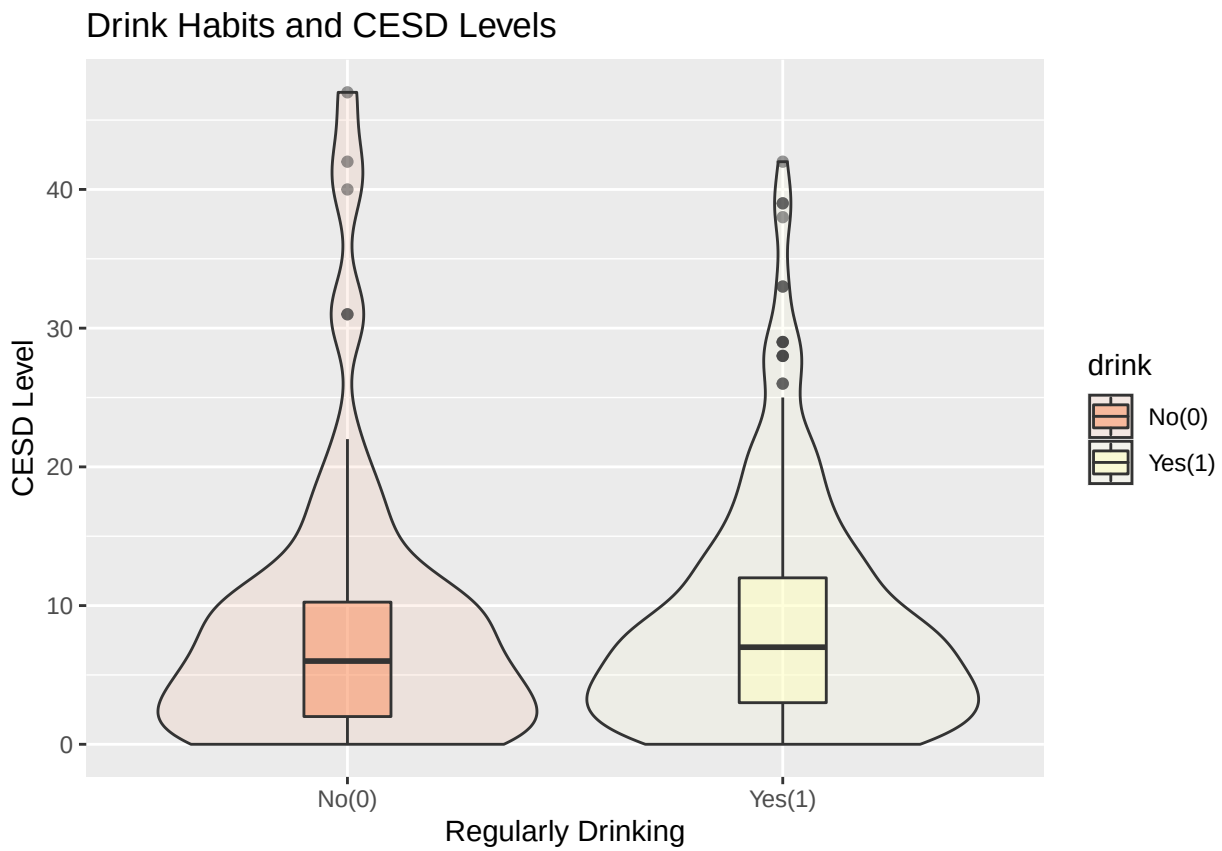
```
##
##          24 25 26 28 29 31 33 38 39 40 42 47
##   No(0)   0  0  0  0  0  2  0  0  0  1  1  1
##   Yes(1)  1  1  2  3  3  0  2  1  2  0  1  0
```

Above is a broken down summary and the number subjects response at each cesd level and the their drinking habits.

```
ggplot(depression, aes(x = cesd, fill = drink)) + geom_density(alpha = 0.3) + ggtitle("Drinking Habits a
    xlab("CESD level") + ylab("Density") + scale_fill_brewer(palette = "Spectral")
```




```
ggplot(depression, aes(x = drink, y = cesd, fill = drink)) + geom_violin(alpha = 0.1) +
    geom_boxplot(alpha = 0.5, width = 0.2) + ggtitle("Drink Habits and CESD Levels") +
    xlab("Regularly Drinking") + ylab("CESD Level") + scale_fill_brewer(palette = "Spectral")
```



The density graph is meant to represent the overlaying differences between those who responded to alcohol consumption and the degree of their depressional feelings. The violin boxplot is also a side by side of the same responses but giving us the ability to compare side by side in a different way. Participants have a slightly higher degree of density in the first graph in which they responded yes to regular drinking and their cesd level. In the boxplot we can observe that again there is a larger density to those who responded to drinking regularly, but the adult who responded to have the highest level of a 47 is not a regular drinker.

Conclusion

After comparing drinking habits and the CESD level, it is hard to come to a conclusion on whether or not drinking has a huge rule to play on the level of severity of depression adults are feeling. If there was a larger sample size of non-drinkers added to the initial survey, the results may be different since there were 25.6% more adults who participated in regular drinking.