

# EDA Project By Garvin Brooks Wilson

```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.1.2
```

```
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 4.1.2
```

```
##
```

```
## 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(sjPlot)
```

```
## Warning: package 'sjPlot' was built under R version 4.1.2
```

Introduction: The data set I have chosen is culmination of surveyed results based on 294 participants with 38 variables in the Los Angeles County. The specific variables i have chose to analyze is marital status, sex and, income. The reason I have selected to compare these variables is because I would like to explore if and why married couples experience a higher prevalence of depression when in comparison to those of single or divorced status. In addition to marital status I would like to explore the correlation between income and prevalence of depression. finally I would like to analyze which gender is more likely to be depressed. Due to the common statistic that men experience depression more often then women do.

```
depress <- read.delim("https://norcalbiostat.netlify.app/data/depress_081217.txt", header=TRUE, sep="\t")  
dim(depress)
```

```
## [1] 294 37
```

## UNIVARIATE ANALYSIS

### VARIABLES BEING OBSERVED: MARITAL STATUS VS DEPRESSION & SEX VS DEPRESSION MARITAL STATUS

```
summary(depress$maritalrename)
```

```
## Length Class Mode
##      0  NULL  NULL
```

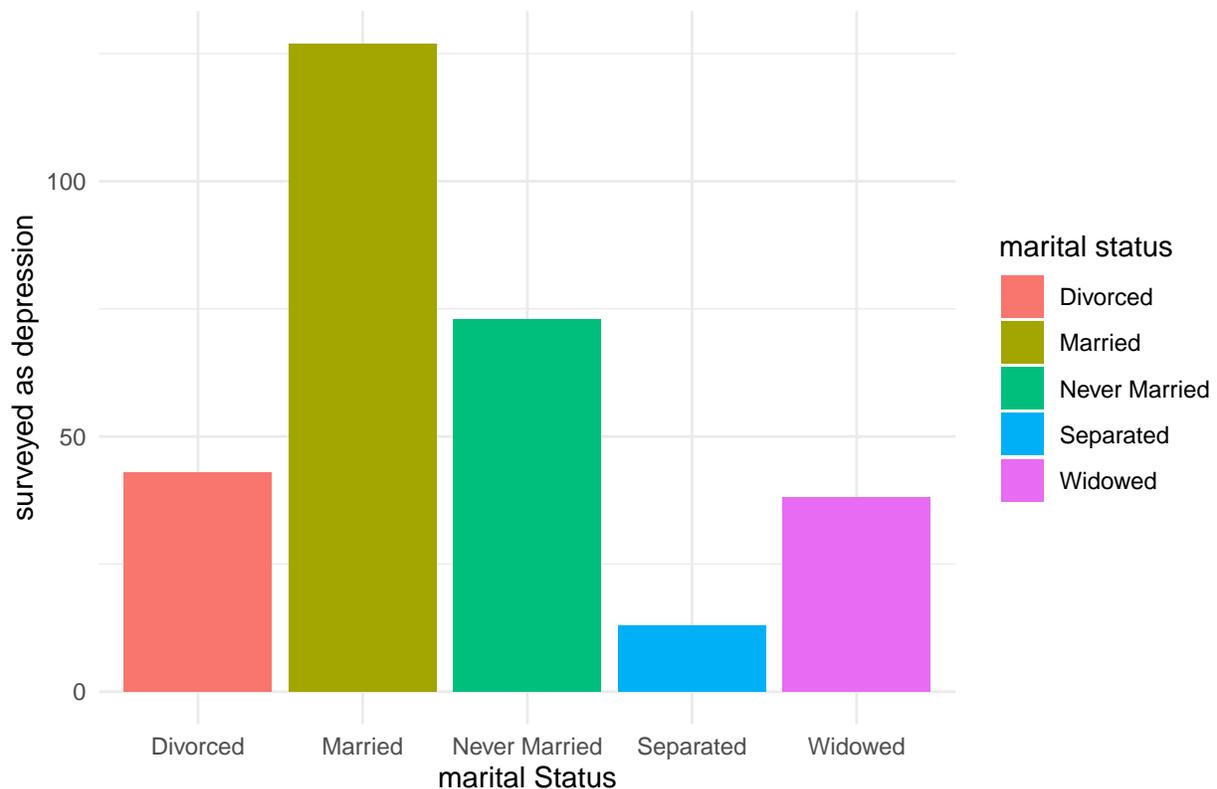
```
table(depress$marital)
```

```
##
##      Divorced      Married Never Married      Separated      Widowed
##           43           127           73           13           38
```

Based on the table shown above we can conclude that individuals who are married tend to have more depression. This can be due to forced marriages or unhappy/unhealthy relationships. In addition, the threat of loss of parental rights and financial strain from divorce may result in more unhappy relationships, thus resulting in higher depression rates.

```
ggplot(depress, aes(x=marital, fill=marital)) + geom_bar() + xlab("marital Status") + ylab("surveyed as depression")
```

Depression Vs. Marital Status



The generated results from this chart support the conclusion of the summary table above, showing that married couples experience depression more frequently when compared to divorced, separated, never married, and widowed.

comparing sex and depression:

```
depress$sexrename <- factor(depress$sex, labels=c( "male", "female"))
summary(depress$sex)
```

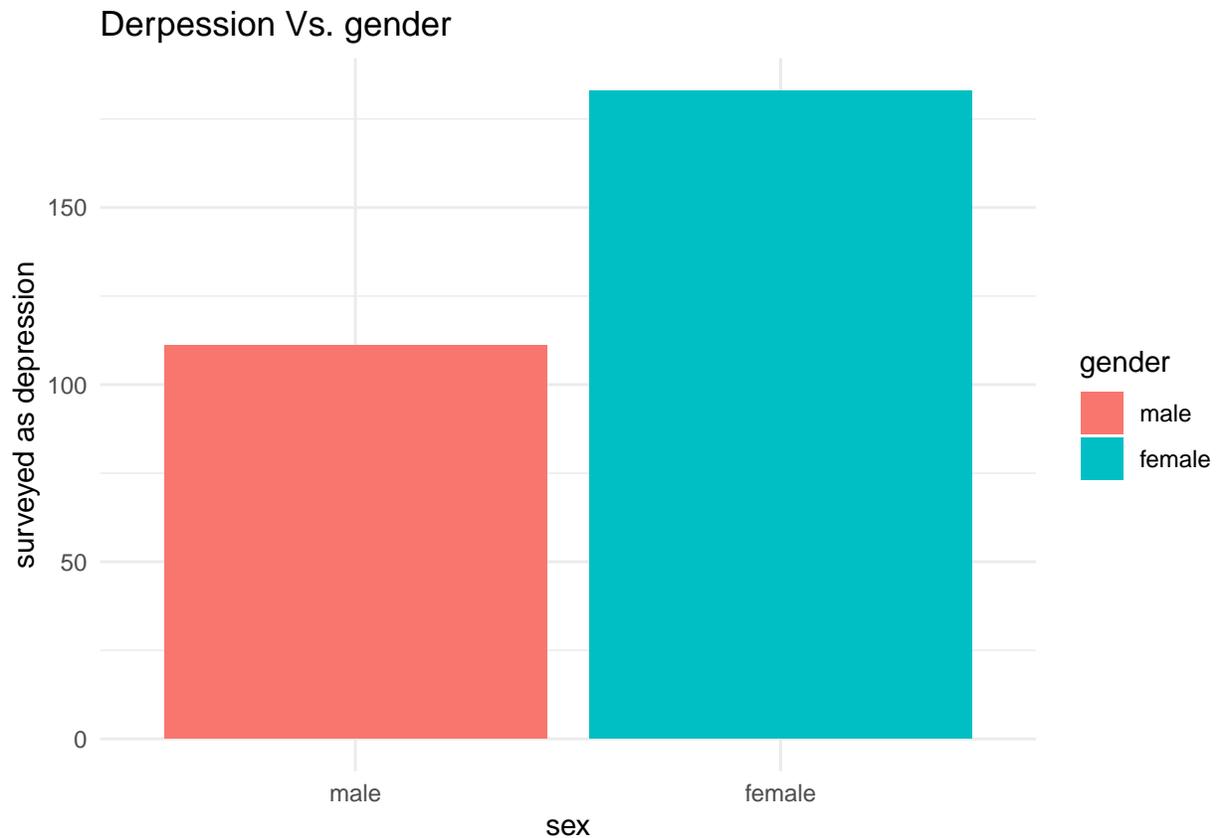
```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.0000  0.0000  1.0000  0.6224  1.0000  1.0000
```

```
table(depress$sexrename)
```

```
##
##  male female
##   111   183
```

Based off the surveyed results with, as opposite as I predicted we see that women experienced depression more often the men did. This may be related to the stigma around women and mental health. I personally feel that there needs to be a larger emphasis and normality on women attending to their mental and emotional health. this may be due to the various social pressures placed upon women that men do not have to deal with,

```
depress$sexrename <- factor(depress$sex, labels=c( "male", "female"))
ggplot(depress, aes(x=sexrename, fill=sexrename)) + geom_bar() + xlab("sex") + ylab("surveyed as depression")
```

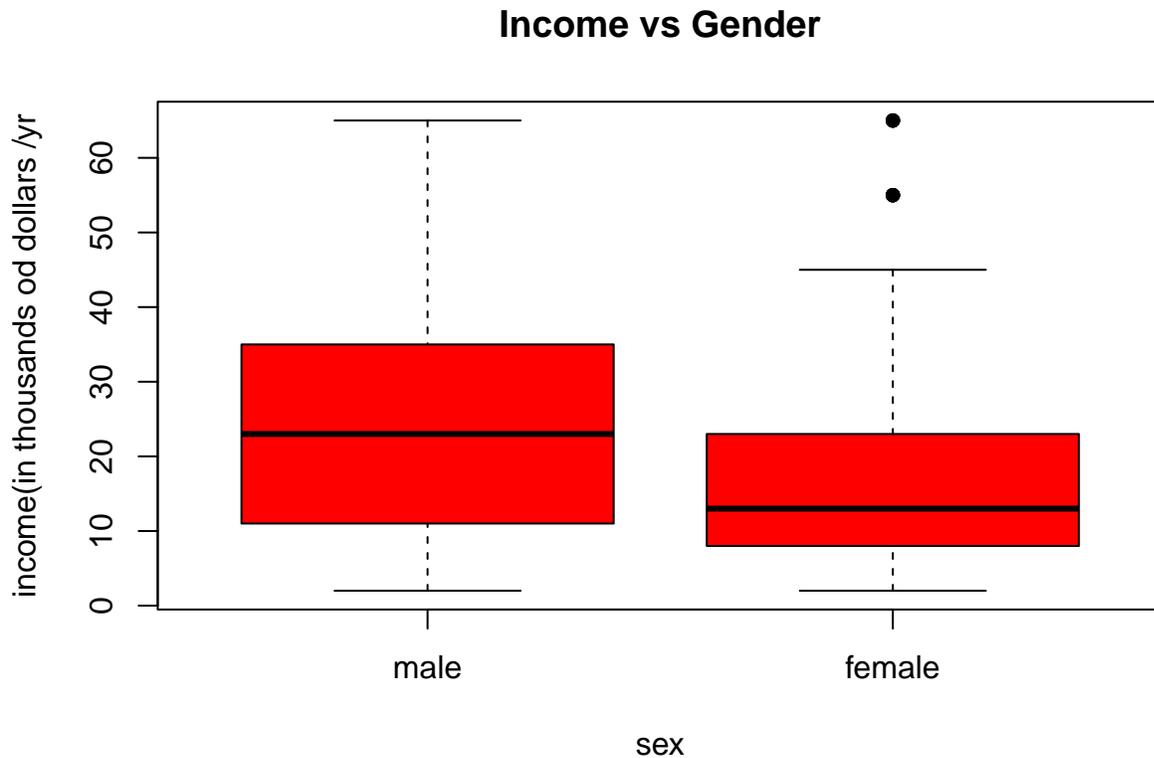


as well as shown above here we see that females experienced depression more often then males based upon the 294 observation from the survey.

#### BIVARIATE ANALYSIS

#### DEPRESSION VS GENDER AS IT RELATES TO INCOME

```
plot(depress$sexrename, depress$income, pch=16, col='red', main='Income vs Gender', xlab='sex', ylab='i
```



Based on the box plot we see on average men making more than women do, in addition we see that women are more depressed when making similar income as women do. this could be that since women experienced higher a higher prevalence of depression it would be more likely that they would experience higher rates of depression even while making the same amount as their male counterparts. Also this can be related to social pressures that females have to be fight to receive equal pay and opportunity in the workforce. As well as the ever changing requirements to be considered “successful”

```
ggplot(depress, aes(x=income, fill=sexrename)) + geom_density() + scale_fill_discrete(name="gender") +  
re") + ylab("density") + ggtitle('Income vs Gender') + theme_minimal()
```



here we see that females make on average less than men as well as showing that females make up the majority of the lower end of the spectrum regarding income. showing that the majority of the surveyed women make less than men and experienced a higher prevalence of depression vs men making more and experiencing less depression

#### Conclusion

In conclusion we explored 3 variables, gender, marital status, and income as they related to depression prevalence among the 294 participants in the LA County. based off the results we see that married couples experienced depression more often when compared to divorced and single participants. This could be related to strains marriage and divorce can place upon mental health. We also saw that women were more likely to be depressed in comparison to men, which may be related to the stigma of mental health placed upon women. And finally we see that women experienced more depression than their male counterparts when making the same income which could be related to the social pressures regarding financial security as it relates to success in life among women. Based off the seen results we also can infer that married men may experience depression with their female spouse. Closely, I believe that as a society there needs to be an emphasis on attending to your mental health the same way you do your physical health especially among men