

EDA_username

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```
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(sjPlot)  
library(forcats)  
knitr::opts_chunk$set(warning=FALSE, message=FALSE)  
library(RColorBrewer)  
ParHIV <- read.csv("../Data/PARHIV_081217.txt", header=TRUE, stringsAsFactors = FALSE, sep="\t")  
dim(ParHIV)
```

```
## [1] 252 123
```

Introduction

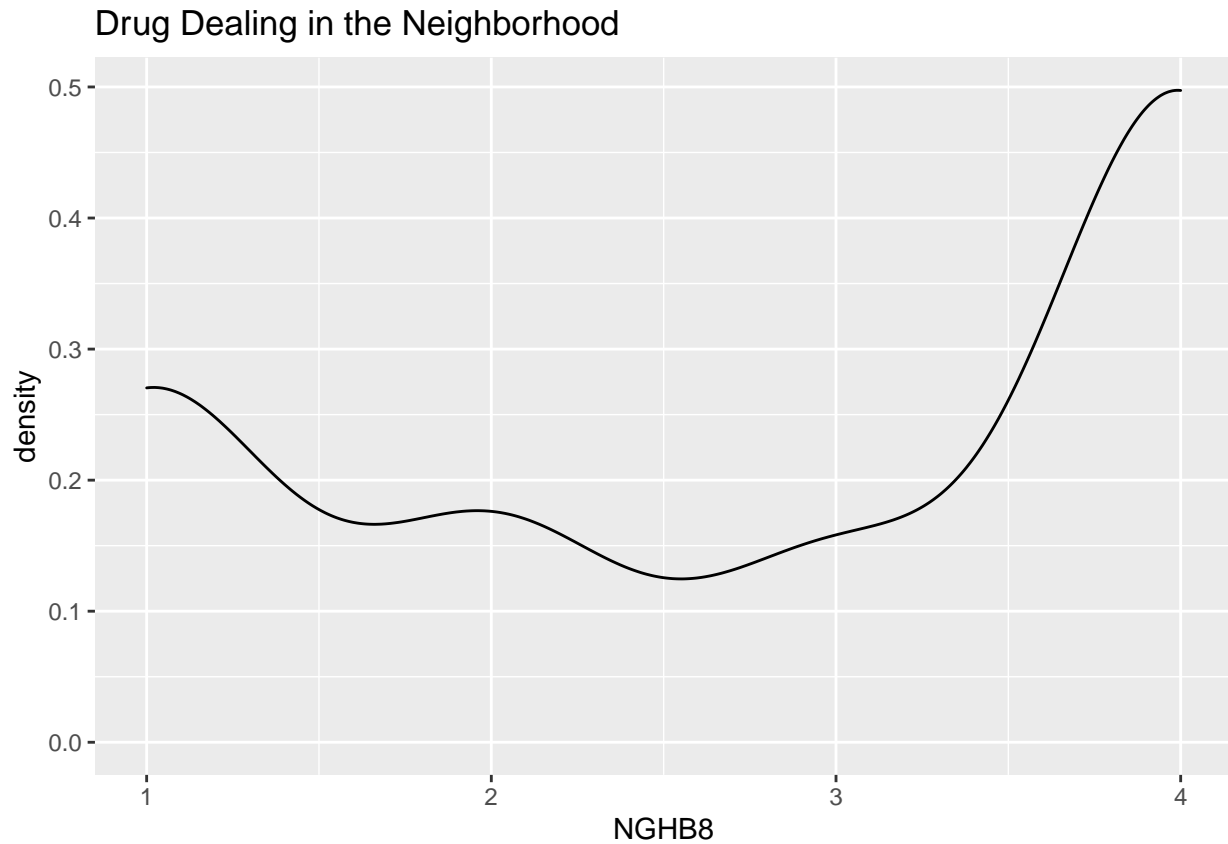
This data set focuses on the life experiences of kids with parents that are HIV positive and was collected as part of a clinical trial involving 252 adolescent children of HIV+ parents. Through analyzing the three variables, NGHBS (drug dealing in the neighborhood), FINEST (household's financial situation), and SCHOOL (are they attending school),. I hope to see how kids of HIV+ parents may be affected and how one's environment and socioeconomic status are associated with being HIV+. I expect the data to show that children with HIV+ parents will have tougher lives than children whose parents don't have HIV.

Drug Dealing in neighborhood

```
table(ParHIV$NGHBS)
```

```
##  
## 1 2 3 4  
## 63 39 33 117
```

```
ggplot(ParHIV, aes(x=NGHB8, fill=NGHB8))+geom_density()+ggtitle("Drug Dealing in the Neighborhood")
```



```
(39+33+117)/252
```

```
## [1] 0.75
```

```
117/(39+33+117)
```

```
## [1] 0.6190476
```

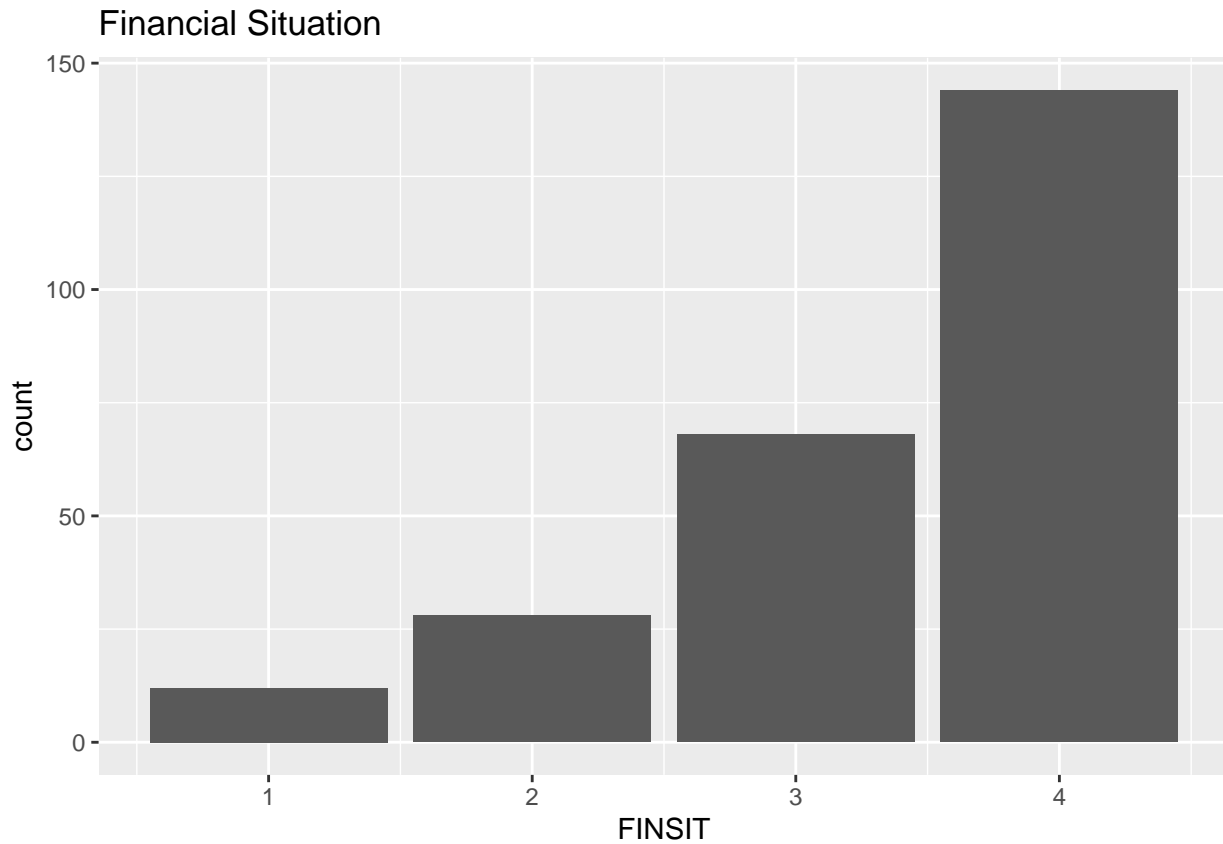
Drug dealing responses measured from 1 not being an issue at all to 4 being a very severe issue in the neighborhood. 75% of neighborhoods are described as having problems with drug dealing, with 62% of these situations described as severe. These are startling numbers to see.

Financial Situation of Household

```
table(ParHIV$FINSIT)
```

```
##
##  1  2  3  4
## 12 28 68 144
```

```
ggplot(ParHIV, aes(x=FINSIT, fill=FINSIT))+geom_bar()+ggtitle("Financial Situation")
```



```
(12+28+68)/252
```

```
## [1] 0.4285714
```

```
(12+28)/68
```

```
## [1] 0.5882353
```

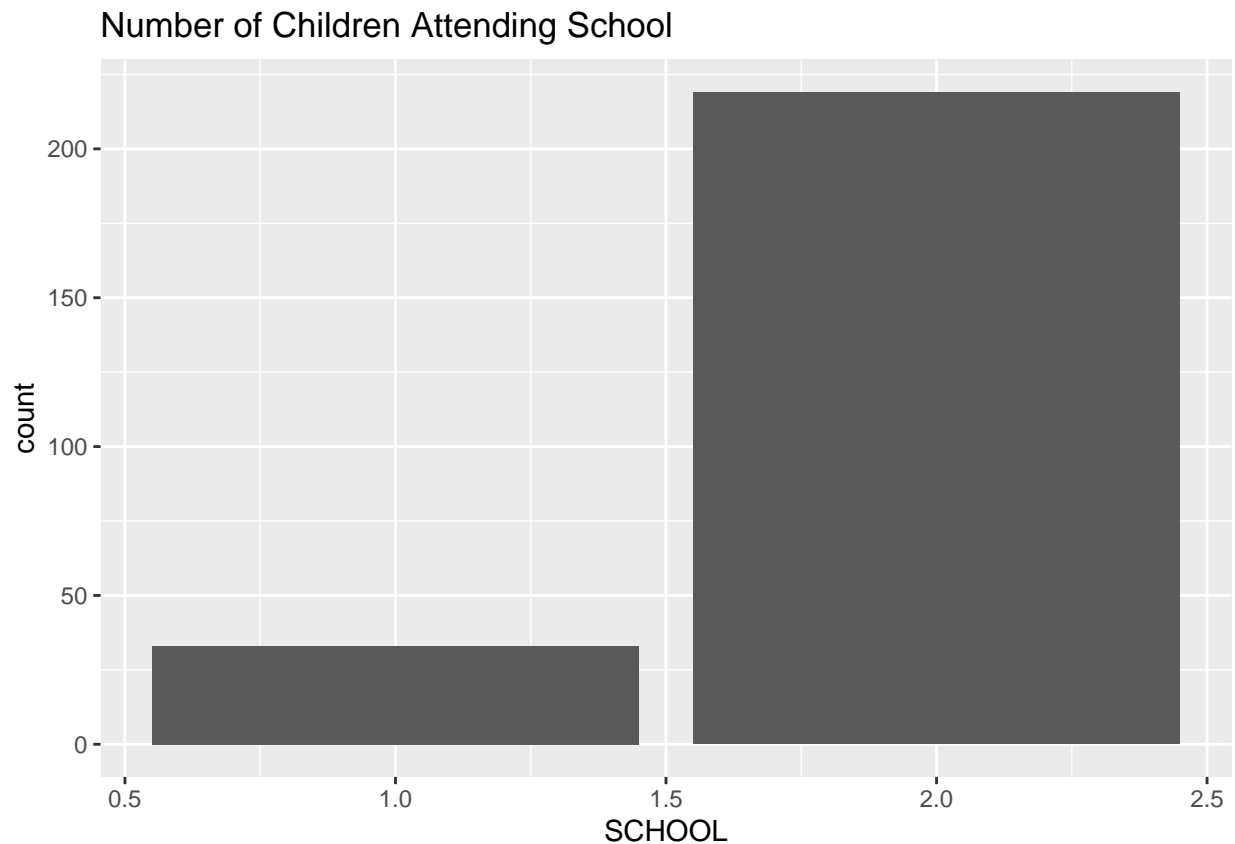
Financial situations responses measured from 1, very poor, struggling to survive, followed by 2, poor, barely paying the bills, to 3, having the necessities, and 4, comfortable living. 40% of kids ranged from living in households and having the necessities to struggling to survive. 60% of kids can barely pay their bills and are very poor.

School Attendance

```
table(ParHIV$SCHOOL)
```

```
##  
##  1  2  
## 33 219
```

```
ggplot(ParHIV, aes(x=SCHOOL, fill=SCHOOL))+geom_bar()+ggtitle("Number of Children Attending School")
```



```
(219-33)/219
```

```
## [1] 0.8493151
```

From the graph and table above, it is seen that a majority of the kids, 85%, are attending school. A “1” means that the child is not attending school, while a “2” means that the child is attending school.

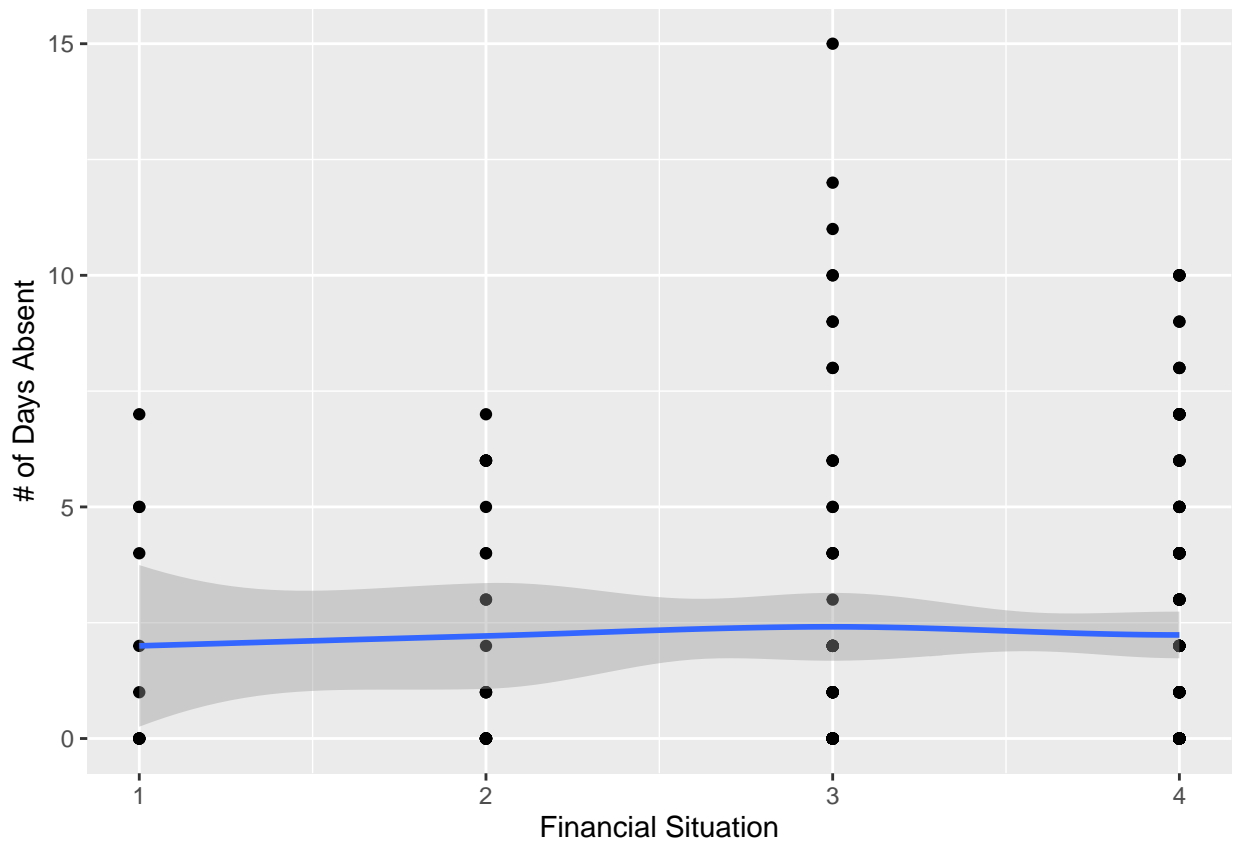
Bivariate Variable

I was curious to see if there was a link between a child’s household’s financial situation and school attendance. To picture this relationship, a scatter plot was created.

```
table(ParHIV$SCHOOL, ParHIV$LIKESCH) %>% prop.table(1) %>% round(3)
```

```
##  
##      1      2      3      4      5  
## 1 0.212 0.242 0.121 0.061 0.364  
## 2 0.237 0.315 0.292 0.059 0.096
```

```
ggplot(ParHIV, aes(x=FINSIT,y=NHOOKEY)) +  
  geom_point() +  
  xlab("Financial Situation")+ylab("# of Days Absent")+geom_smooth(method="loess")
```



The graph indicated that the slope is near zero. This shows that there is little correlation between a child's financial situation to their school attendance.

Conclusion

A conclusion cannot be based on one data set alone. Still, there seems to be evidence that children of HIV+ parents generally have a "tougher" life. This is supported by the fact that 40% of children struggle with financial situations that range from struggling to survive to have the bare necessities. 75% of neighborhoods these kids live in can be described as having concerns with drug dealing in the neighborhood. Furthermore, while this data set is not enough to make a robust and accurate conclusion, we can say that most HIV+ parents generally live in unsafe neighborhoods, and many often struggle with their financial situations. This data set does show us that having HIV+ parents often leads to a tougher life for the kids and themselves.