

Final Portfolio Project

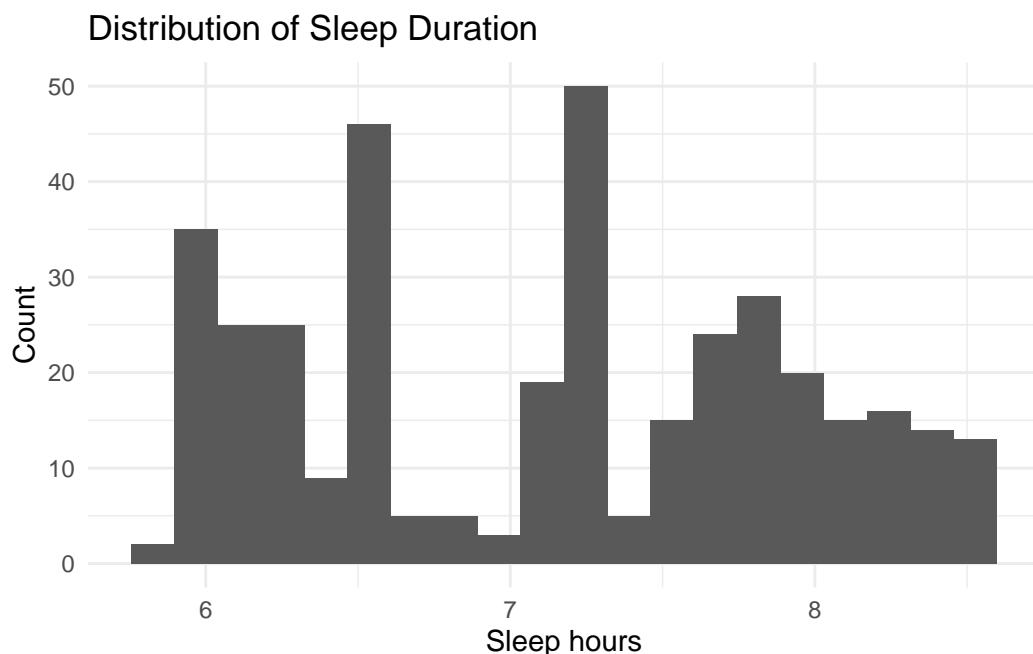
Seth Bonney and Cuong Tran

Research Question

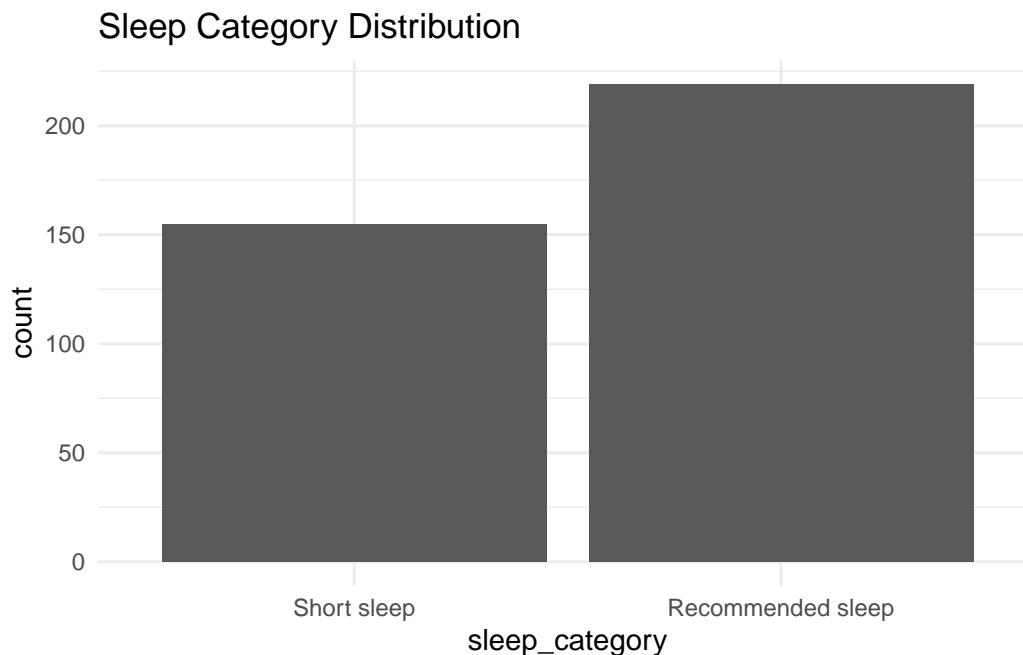
Will come up soon

Research question 1

```
library(ggplot2)
ggplot(sleep, aes(sleep_duration)) +
  geom_histogram(bins = 20) +
  theme_minimal() +
  labs(
    title = "Distribution of Sleep Duration",
    x = "Sleep hours",
    y = "Count"
  )
```



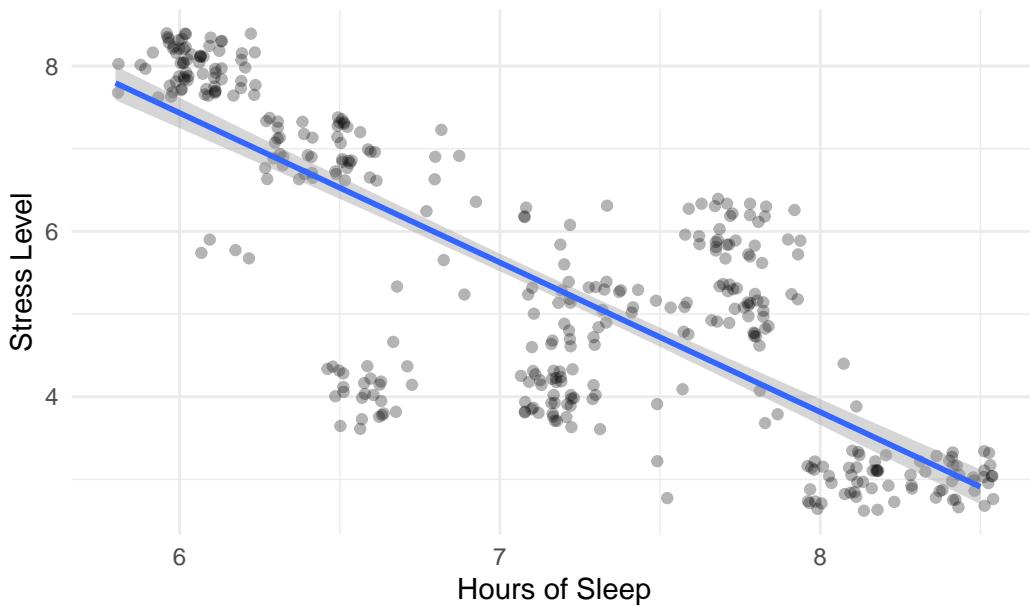
```
ggplot(sleep, aes(sleep_category)) +  
  geom_bar() +  
  theme_minimal() +  
  labs(  
    title = "Sleep Category Distribution"  
)
```



```
ggplot(sleep, aes(sleep_duration, stress_level)) +  
  geom_jitter(alpha = 0.3) +  
  geom_smooth(method = "lm", se = TRUE) +  
  theme_minimal() +  
  labs(  
    title = "Sleep Duration vs Stress",  
    x = "Hours of Sleep",  
    y = "Stress Level"  
)
```

`geom_smooth()` using formula = 'y ~ x'

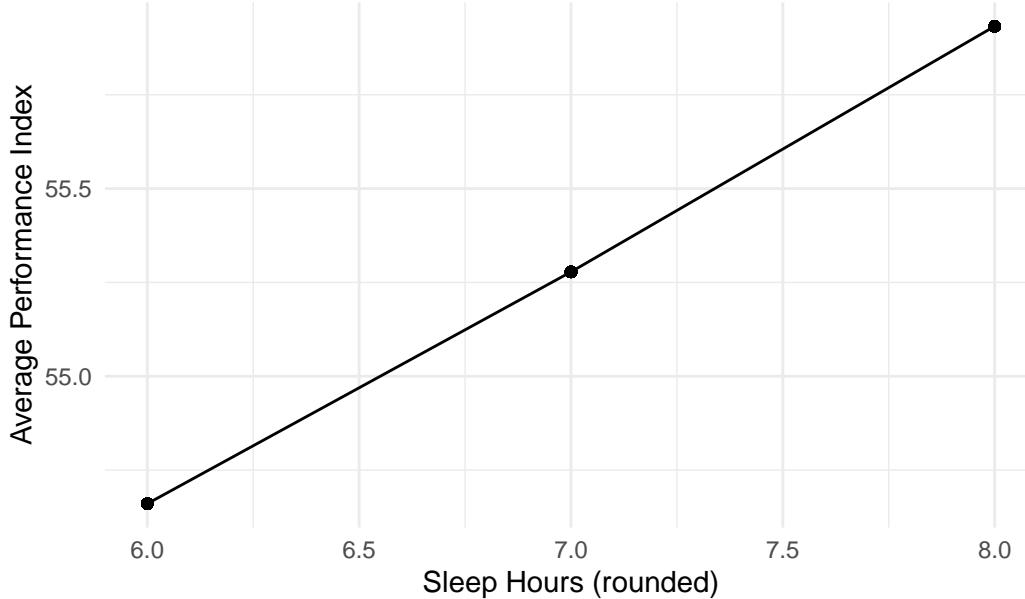
Sleep Duration vs Stress



Research question 3

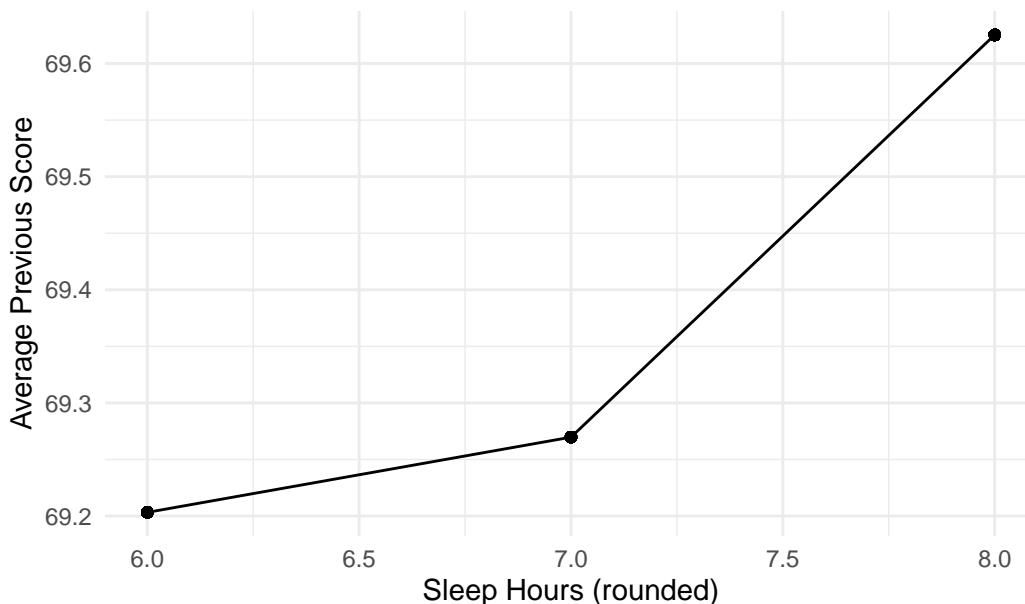
```
# Sleep hours vs academic performance index
ggplot(full_data, aes(x = sleep_hours, y = avg_performance)) +
  geom_point() +
  geom_line() +
  theme_minimal() +
  labs(
    title = "Average Performance Index by Sleep Hours",
    x = "Sleep Hours (rounded)",
    y = "Average Performance Index"
  )
```

Average Performance Index by Sleep Hours

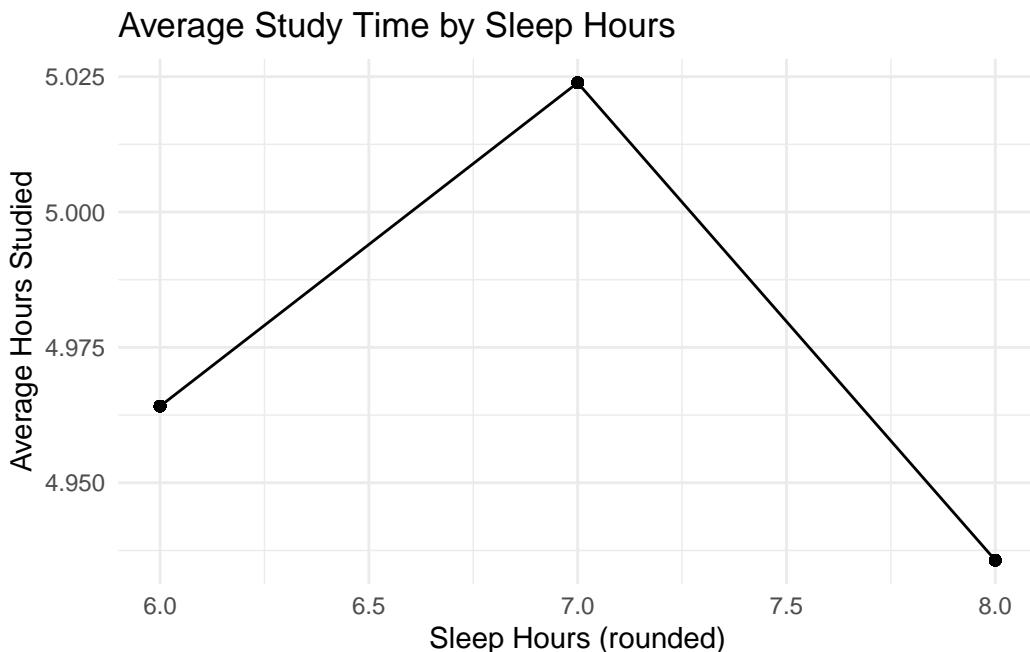


```
# Sleep hours vs previous scores
ggplot(full_data, aes(x = sleep_hours, y = avg_previous_score)) +
  geom_point() +
  geom_line() +
  theme_minimal() +
  labs(
    title = "Average Previous Scores by Sleep Hours",
    x = "Sleep Hours (rounded)",
    y = "Average Previous Score"
  )
```

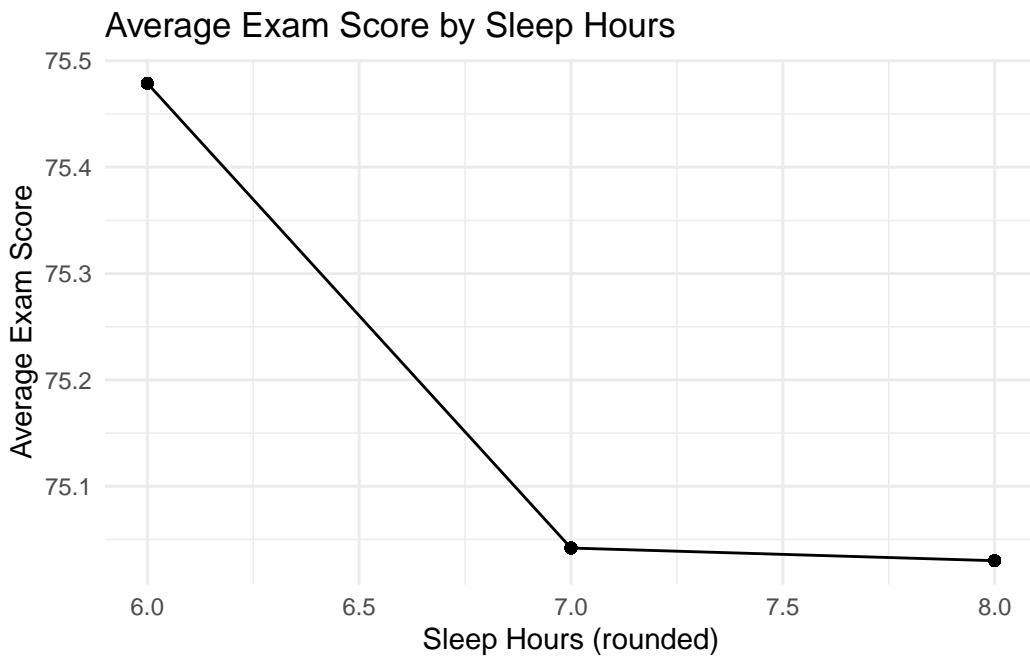
Average Previous Scores by Sleep Hours



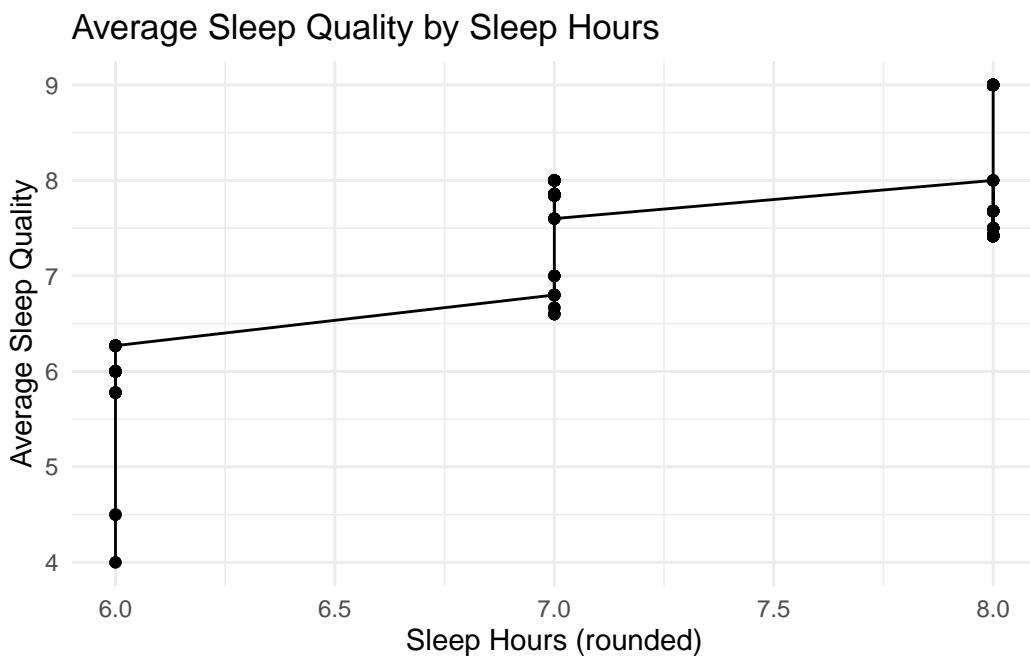
```
# Sleep hours vs hours studied
ggplot(full_data, aes(x = sleep_hours, y = avg_hours_studied)) +
  geom_point() +
  geom_line() +
  theme_minimal() +
  labs(
    title = "Average Study Time by Sleep Hours",
    x = "Sleep Hours (rounded)",
    y = "Average Hours Studied"
  )
```



```
# Sleep hours vs exam score (from factors dataset)
ggplot(full_data, aes(x = sleep_hours, y = avg_score)) +
  geom_point() +
  geom_line() +
  theme_minimal() +
  labs(
    title = "Average Exam Score by Sleep Hours",
    x = "Sleep Hours (rounded)",
    y = "Average Exam Score"
  )
```



```
# Sleep hours vs sleep quality
ggplot(full_data, aes(x = sleep_hours, y = avg_sleep_quality)) +
  geom_point() +
  geom_line() +
  theme_minimal() +
  labs(
    title = "Average Sleep Quality by Sleep Hours",
    x = "Sleep Hours (rounded)",
    y = "Average Sleep Quality"
  )
```



```
# Sleep hours vs stress level
ggplot(full_data, aes(x = sleep_hours, y = avg_stress_level)) +
  geom_point() +
  geom_line() +
  theme_minimal() +
  labs(
    title = "Average Stress Level by Sleep Hours",
    x = "Sleep Hours (rounded)",
    y = "Average Stress Level"
  )
```

