

Does Physical Activity Differ by Marital Status?

Project Overview

This project explores whether physical activity patterns differ across marital status groups using data from the NHANES dataset. The goal is to identify if a person's marital situation is associated with how physically active they are — whether through work, recreation, or transportation.

Research Question

Is there a statistically significant difference in levels of physical activity across different marital statuses?

Variables of Interest

- **Marital Status:** Coded into six categories (Married, Widowed, Divorced, Separated, Never Married, Living Together)
- **Physical Activity Types:**
 - Vigorous Work Activity
 - Moderate Work Activity
 - Walking or Biking
 - Vigorous Recreational Activity
 - Moderate Recreational Activity

Methodology Summary

The approach involves generating **contingency tables** that cross-tabulate each activity type with marital status. For each table, we compute:

- Raw counts of participants by activity and marital status
- Row-wise proportions to see how activity levels vary within each group
- **Chi-squared tests of independence** to assess whether any observed differences are statistically significant

Interpretation

Significant results suggest that marital status is associated with physical activity behavior. For example, if married individuals are more likely to engage in vigorous recreational activity than single individuals, it may inform targeted health messaging or program design.