

Mental Health Analysis Report

1. Correlation Matrix Insights

- Strong positive correlation between Social Media Hours and Screen Time Hours.
- Moderate correlation between Survey and Wearable Stress Scores.
- Weak negative correlations between Exercise/Sleep Hours and Stress Scores.

2. PCA Clustering

- PCA reduced behavioral features to 2D for visualization.
- Clusters in the PCA plot show grouping of students by academic performance.
- Suggests a relationship between behavior and academic outcome.

3. Predictive Modeling (Random Forest)

- Model trained to predict Academic Performance using behavioral metrics.
- Accuracy: ~26% (low predictive power).
- Indicates behavioral features alone are insufficient for accurate prediction.
- Best predictions observed for 'Good' and 'Poor' performance labels.