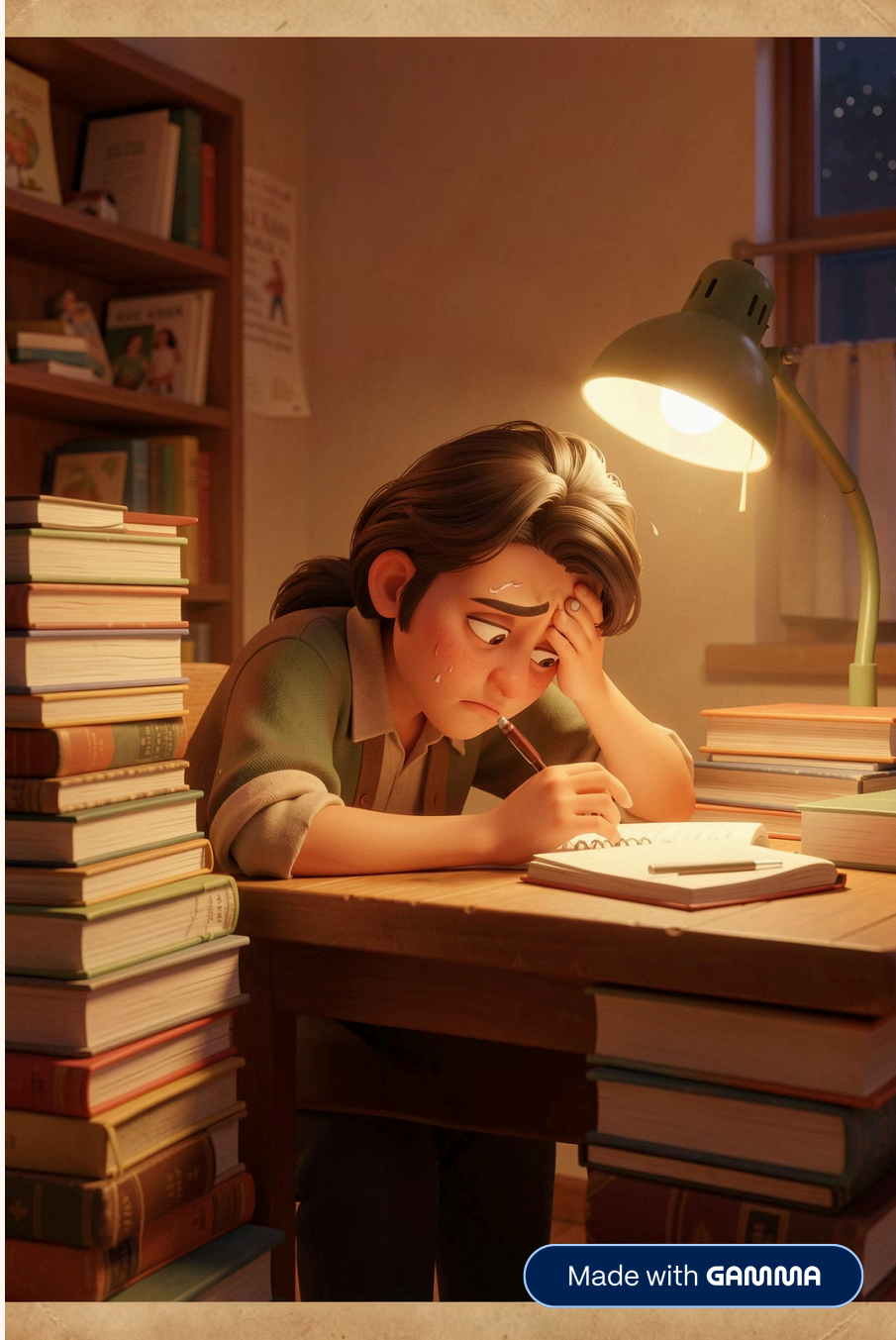
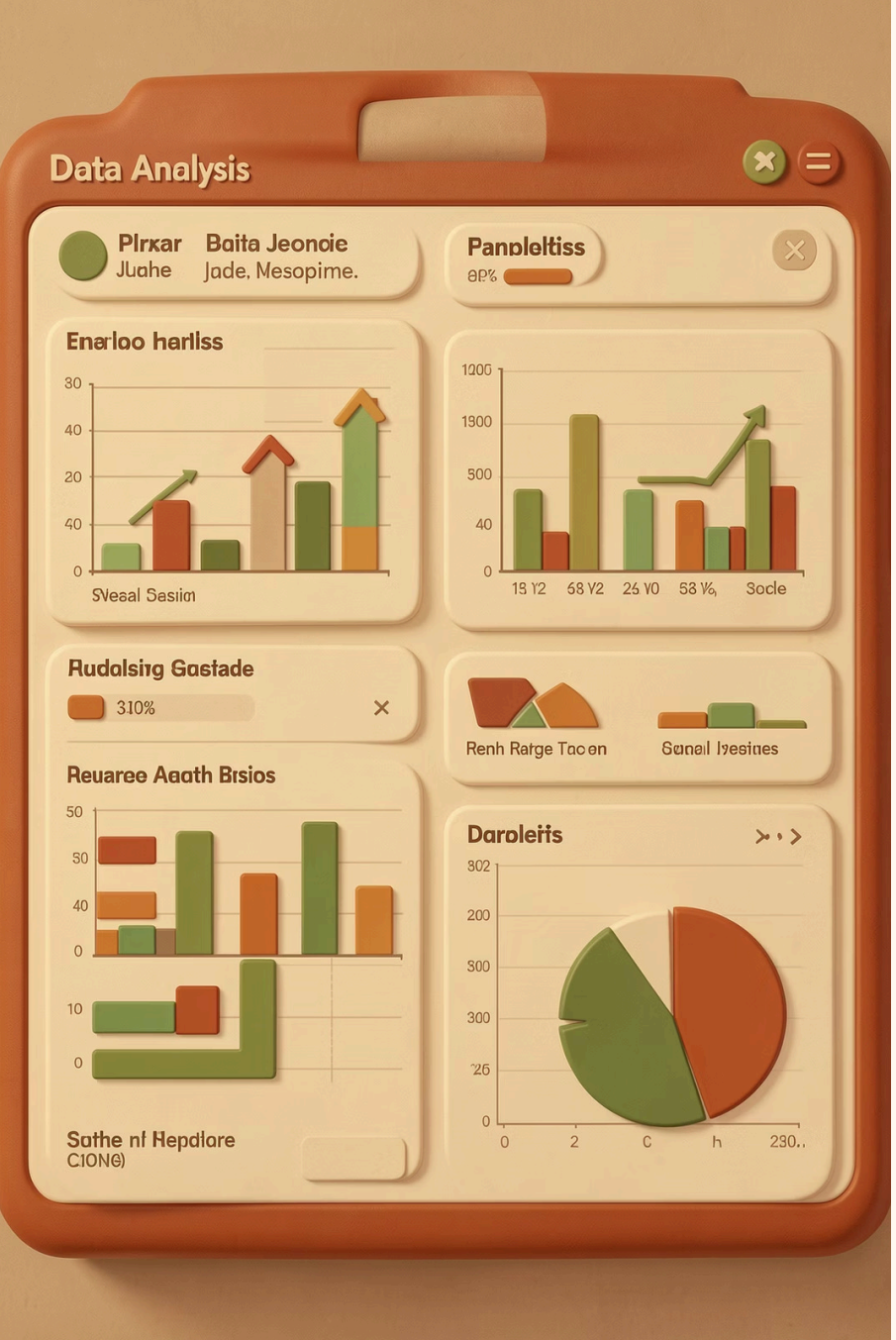
# Understanding Depression Risk Among NEET Aspirants

## An Exploratory Analysis of Sleep, Study Patterns & Stress






# Executive Summary

This exploratory data analysis examines behavioral and environmental factors potentially associated with depression risk among NEET aspirants. Based on a synthetic survey dataset of 502 NEET aspirants, the analysis investigates patterns related to sleep duration, daily study load, study satisfaction, academic pressure, and financial stress.

The objective is not to diagnose mental health conditions, but to demonstrate how data analytics and visual storytelling can responsibly surface wellbeing-related patterns in high-pressure academic environments.

# Problem Statement

NEET represents one of India's most competitive entrance examinations, demanding prolonged periods of intense preparation. While academic outcomes receive extensive discussion, the mental and emotional challenges faced by aspirants receive limited data-driven attention.

### Sleep Deprivation

How prevalent is insufficient sleep among NEET aspirants preparing for examinations?

### Study Intensity

Does increased study intensity coincide with higher academic pressure levels?

### Satisfaction Variance

How does study satisfaction vary across different levels of study effort?

### Financial Stress

Does financial stress act as a compounding factor alongside academic pressure?

# Data Description

## Dataset Characteristics

**Source:** Synthetic (simulated) survey data

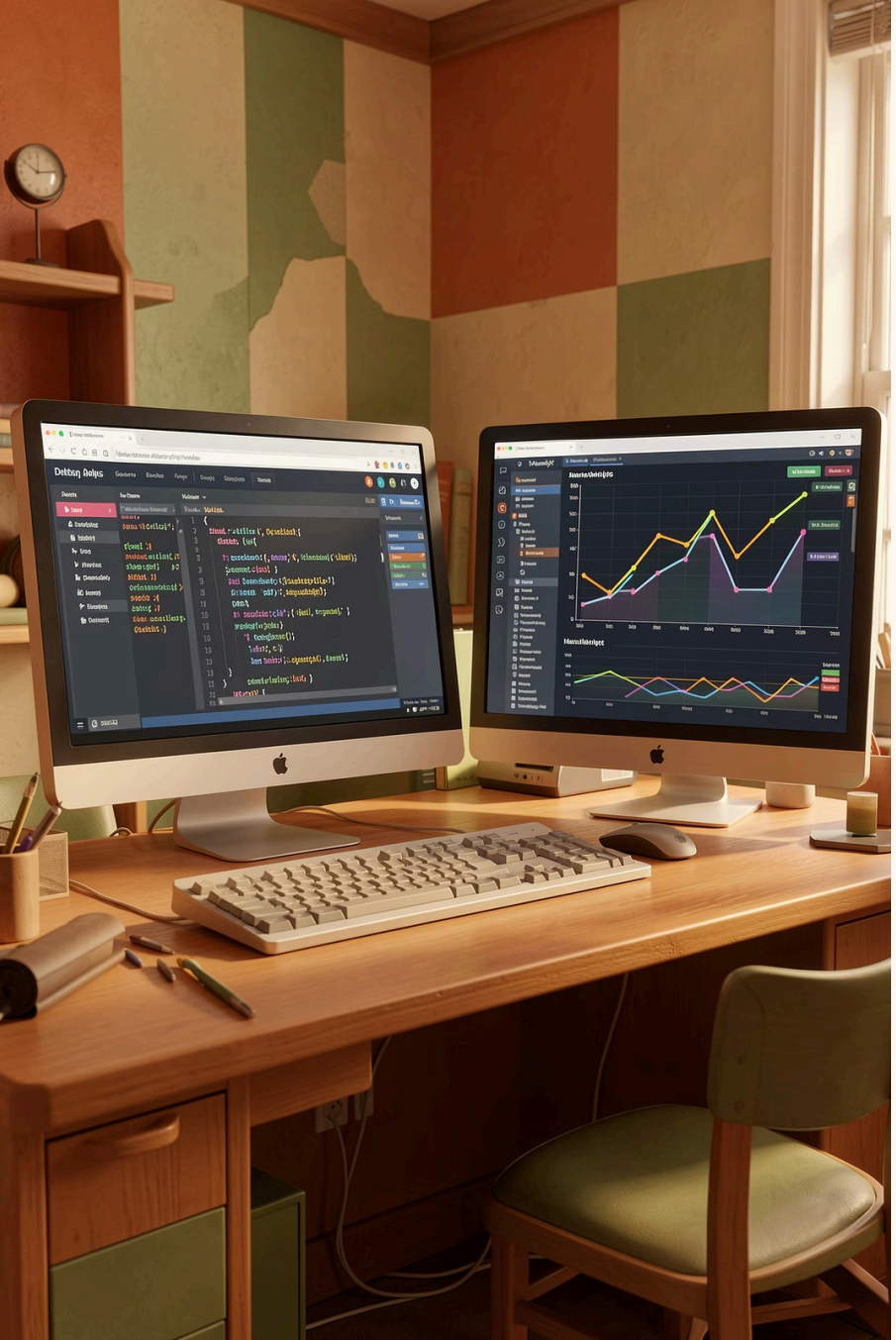
**Purpose:** Reflect realistic NEET preparation scenarios

**Sample Size:** 502 NEET aspirants

**Ethical Approach:** Created to avoid privacy, ethical, and consent-related concerns

## Key Variables

- Sleep Duration (≤6, 6–7, 7–8, >8 hours)
- Daily Study Hours (0–12 hours range)
- Study Satisfaction Score (1–5 scale)
- Academic Pressure Level (1–5 scale)
- Financial Stress Level (1–5 scale)
- Student Count (aggregated)



# Methodology

01

## Data Preparation

Data cleaning and structuring performed using SQL. Validation of categorical ranges and logical consistency across all variables.

02

## Exploratory Data Analysis (EDA)

Distribution analysis of sleep duration categories. Trend analysis of student count across increasing study hours. Comparative analysis of satisfaction, pressure, and stress levels.

03

## Visualization

Tableau used to build interactive dashboard. Focus on clarity, accessibility, and narrative flow. Visual hierarchy designed for non-technical audiences.

# Key Findings

## Sleep Deprivation Patterns

A significant proportion of aspirants report sleeping less than the recommended 7–8 hours, indicating widespread sleep deprivation.

## Study Load Intensity

As daily study hours increase, student counts remain high, suggesting sustained academic intensity with coinciding academic pressure.

## Satisfaction vs Effort

Study satisfaction does not consistently rise with increased effort. Satisfaction peaks at moderate levels before declining, suggesting emotional fatigue at higher intensities.

## Academic Pressure

Higher academic pressure levels reported by substantial number of aspirants, indicating pressure is a common experience.

## Financial Stress Factor

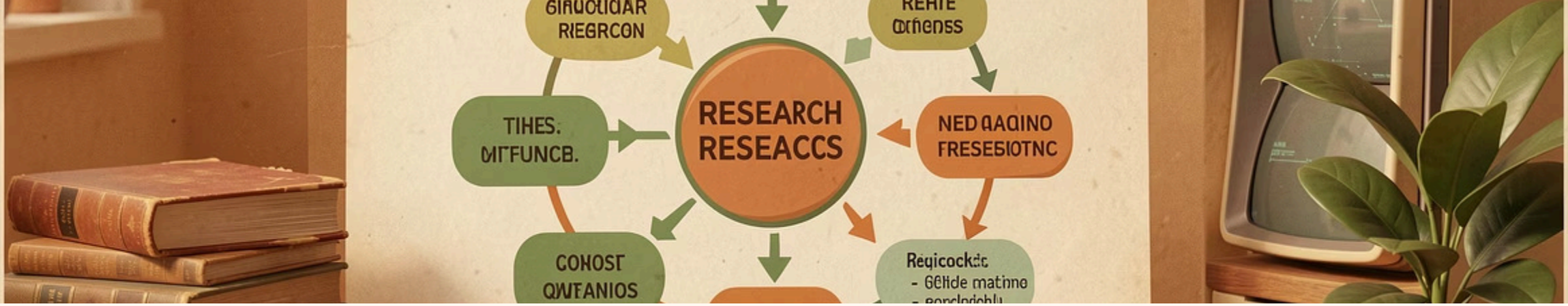
Financial stress observed alongside academic pressure, suggesting economic constraints intensify psychological and academic stress.

# Interpretation

The findings suggest that multiple stressors—sleep deprivation, sustained study intensity, academic pressure, and financial stress—often coexist among NEET aspirants.

While none of these factors alone implies depression, their combination may increase vulnerability to emotional distress. This reinforces the importance of holistic approaches to student wellbeing that extend beyond academic performance alone.

Educational support systems should consider addressing these interconnected stressors through integrated wellbeing programs, sleep education, financial counseling, and mental health resources.




# Limitations

## Synthetic Data

The dataset is synthetic and does not represent real individuals. Findings must be interpreted as exploratory and illustrative rather than representative of actual aspirant populations.

## Exploratory Nature

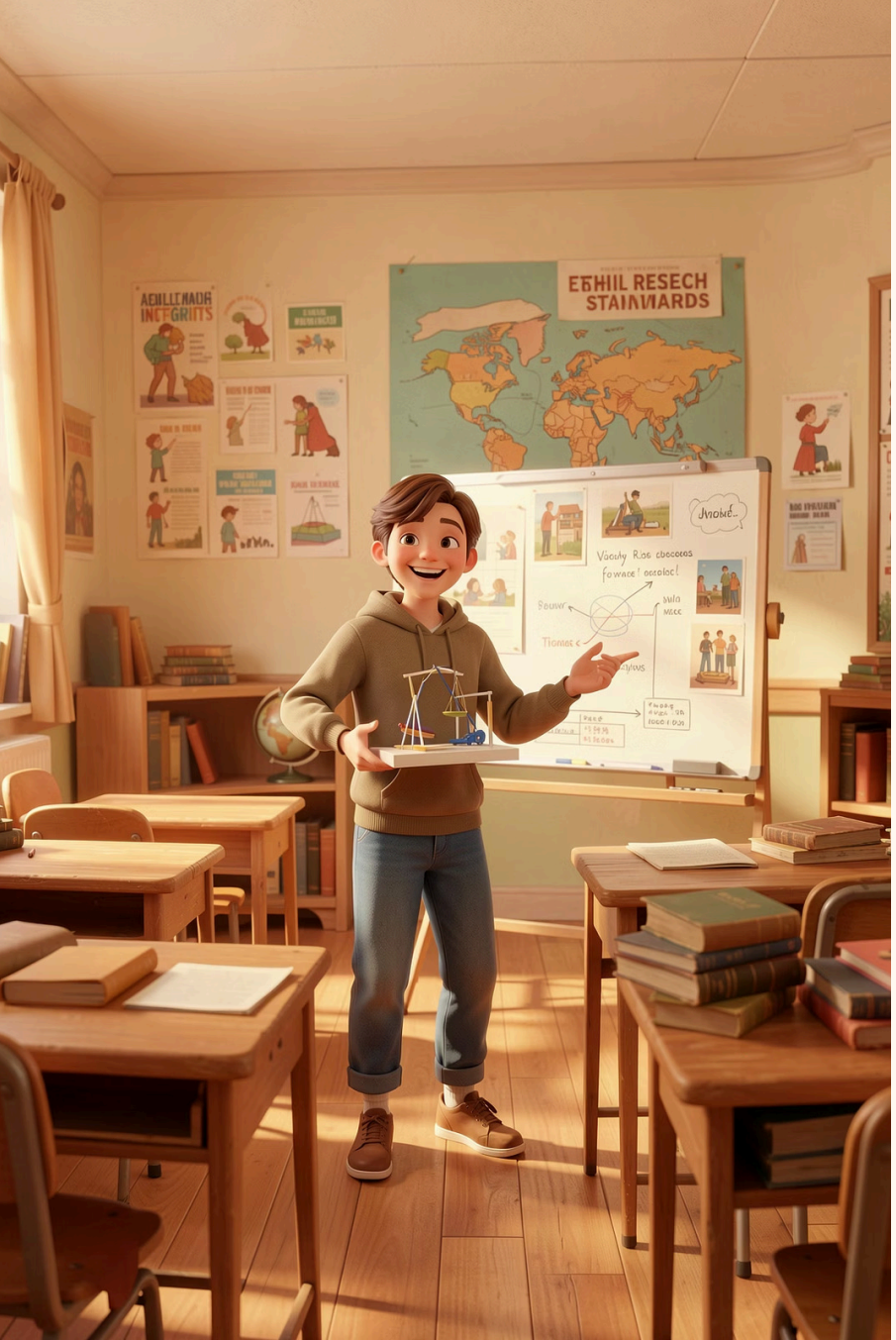
Findings are exploratory and illustrative. The analysis identifies patterns and correlations but cannot establish causal relationships between variables.

## Survey Bias

Self-reported survey structures may introduce response bias. Students may underreport or overreport stress levels due to social desirability or recall limitations.

## Generalizability

Results may not be generalizable to all NEET aspirants due to sample characteristics and synthetic data generation methods.



# Ethical Considerations

## Privacy Protection

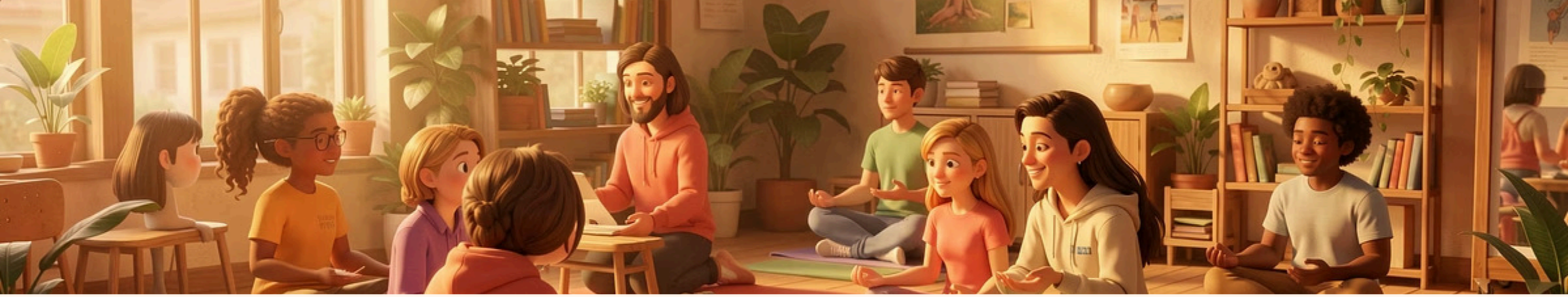
No real personal or medical data was used in this analysis. All survey responses are simulated.

## No Diagnostic Claims

The analysis does not diagnose, assess, or predict mental health conditions in individuals.

## Responsible Language

Language and interpretation consistently avoid causal or medical conclusions about depression or other conditions.



# Conclusion

This project demonstrates how SQL-based exploratory analysis and Tableau visualization can be combined to communicate complex wellbeing-related patterns responsibly. The analysis highlights areas where further research and supportive interventions may benefit students preparing for high-stakes examinations like NEET.

> *Future research should focus on longitudinal studies using real survey data, incorporating validated mental health assessment tools, and developing targeted intervention programs for at-risk aspirants.*