Impact of Lifestyle Choices and Mental Health on Academic Success

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Abstract

This report explores the relationship between mental health, lifestyle choices, and academic success among students. Using a dataset of student mental health records supplemented by synthetic data, we analyze factors such as sleep, social relationships, sports participation, and financial concerns. Insights derived from structured queries form the basis for actionable recommendations to support student well-being and academic achievement. Dashboards are created to provide a visual representation of the findings.

1 Introduction

Mental health is a vital component of student life that significantly impacts academic performance and overall well-being. Academic pressures, lifestyle choices, and external factors such as financial concerns contribute to mental health challenges among students. This project aims to identify key insights that can help students and academic institutions address these challenges effectively. By analyzing a student mental health dataset, we examine the influence of sleep, social relationships, academic workload, and other factors on academic outcomes.

2 Data Collection and Processing

The primary dataset was sourced from Kaggle (`https://www.kaggle.com/datasets/willianoliveiragibin/student-mental`), containing 100 student records. To increase the robustness of the analysis, synthetic data was generated to expand the dataset to 1,000 records, maintaining the original distribution of attributes. The dataset includes the following key features:

- Mental health indicators such as anxiety, depression, and social relationships.
- Lifestyle attributes such as sleep patterns, study satisfaction, and stress relief activities.
- Demographic and academic information such as gender, residential status, academic year, and degree major.

The data was preprocessed to ensure consistency and correctness before being divided into three relational tables: *Mental Health*, *Students*, and *Lifestyle*.

3 Database Creation and Data Insertion

A relational database was created using SQLite to store the dataset efficiently. The database consisted of three tables:

1. **Mental Health Table:** Contains attributes such as `anxiety`, `depression`, `financial_concerns`, `sports_engagement`, and `isolation`.
2. **Students Table:** Includes demographic and academic attributes like `university`, `gender`, `residential_status`, and `student_id (Primary Key)`.
3. **Lifestyle Table:** Tracks attributes like `average_sleep`, `CGPA`, `academic_pressure`, and `stress_relief_activities`.

Data from CSV files was inserted into these tables, ensuring proper foreign key relationships for linking data across tables. This design enabled efficient execution of complex queries for analysis.

4 Analysis of Queries

A total of 15 queries were designed and executed to extract actionable insights. These queries addressed the following research questions:

- **Mental Health Trends:** Which student majors report the highest levels of depression? How does campus discrimination affect mental well-being?
- **Lifestyle Factors:** What is the impact of sleep on academic performance and mental health? Which stress-relief activities are associated with lower depression levels?
- **Social and Academic Factors:** How do academic workload and future insecurities influence students' mental health? How do social relationships vary among students with anxiety or depression?

The queries utilized SQL operations such as `JOIN`, `GROUP BY`, and aggregate functions to analyze relationships across the three tables.

5 Results

The following key findings emerged from the analysis:

- **Depression by Major:** Students majoring in Engineering and Data Science reported the highest levels of depression, potentially due to high academic workload and future insecurity.
- **Impact of Sleep:** Students averaging 7-8 hours of sleep had significantly higher CGPAs and reported better mental well-being.
- **Stress-Relief Activities:** Activities like meditation and regular exercise were strongly associated with lower levels of depression.

- **Campus Discrimination:** Students experiencing campus discrimination reported lower CGPAs and higher levels of anxiety and isolation.
- **Gender Trends:** Female students reported higher levels of social relationship challenges and anxiety compared to male students.

6 Contributions

This project was collaboratively executed by:

- **Vignesh Ramaswamy Balasundaram:** Responsible for designing and executing SQL queries to uncover valuable insights about the relationships between mental health, lifestyle, and academic success.
- **Abhishek Kothari:** Focused on creating dashboards to present the results visually, enabling clear and intuitive interpretation of the findings.

7 Conclusion

The findings underscore the importance of holistic support systems for students, addressing both mental health and academic challenges. Interventions such as promoting sleep hygiene, encouraging participation in stress-relief activities, and fostering inclusive campus environments could improve student outcomes.

8 Future Work

Future studies could analyze longitudinal data to observe trends over time and test interventions aimed at improving mental health and academic performance.