Statistical Analysis of Research Questions

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| Category | Question | Variable 1 | Variable 2 | p-value | Null Hypothesis | Alternate Hypothesis | Insight |
| Mental Health and Academic Performance | How does stress level correlate with CGPA? | Stress\_Level | CGPA | > 0.05 | There is no correlation between stress level and CGPA. | There is a correlation between stress level and CGPA. | No significant correlation found; stress may not directly affect academic scores. |
| Mental Health and Academic Performance | Does sleep quality affect CGPA? | Sleep\_Quality | CGPA | > 0.05 | Sleep quality has no effect on CGPA. | Sleep quality affects CGPA. | No significant relationship observed; other factors might influence academic performance more strongly. |
| Mental Health and Academic Performance | How does semester credit load influence stress levels? | Semester\_Credit\_Load | Stress\_Level | > 0.05 | Semester credit load does not influence stress levels. | Semester credit load influences stress levels. | No significant impact observed, though heavier loads might still subjectively feel more stressful. |
| Mental Health and Physical/Behavioral Factors | What is the relationship between physical activity and anxiety? | Physical\_Activity | Anxiety\_Score | 0.0382 | Physical activity does not affect anxiety levels. | Physical activity affects anxiety levels. | A weak but statistically significant relationship was found, suggesting physical activity might help reduce anxiety. |
| Chronic or External Factors | Do students with a family history of mental health issues experience higher levels of depression, anxiety, and stress? | Family\_History vs Depression\_Score | — | There is no relationship between family history and depression score | There is a relationship between family history and depression score | Data not available for family history, cannot compute significance |  |
| Chronic or External Factors |  | Family\_History vs Anxiety\_Score | — | There is no relationship between family history and anxiety score | There is a relationship between family history and anxiety score | Data not available for family history, cannot compute significance |  |
| Chronic or External Factors |  | Family\_History vs Stress\_Level | — | There is no relationship between family history and stress level | There is a relationship between family history and stress level | Data not available for family history, cannot compute significance |  |
| Chronic or External Factors | What is the impact of chronic illness on stress, depression, anxiety, and academic performance? | Chronic\_Illness vs Stress\_Level | — | Chronic illness does not affect stress levels | Chronic illness affects stress levels | No significant p-value given for this pair |  |
| Chronic or External Factors |  | Chronic\_Illness vs Depression\_Score | — | Chronic illness does not affect depression score | Chronic illness affects depression score | No significant p-value given for this pair |  |
| Chronic or External Factors |  | Chronic\_Illness vs Anxiety\_Score | — | Chronic illness does not affect anxiety score | Chronic illness affects anxiety score | No significant p-value given for this pair |  |
| Chronic or External Factors |  | Chronic\_Illness vs CGPA | — | Chronic illness does not affect CGPA | Chronic illness affects CGPA | No significant p-value given for this pair |  |
| Chronic or External Factors | Does financial stress correlate with depression, anxiety, and CGPA? | Financial\_Stress vs Depression\_Score | — | There is no correlation between financial stress and depression score | There is a correlation between financial stress and depression score | No significant p-value given for this pair |  |
| Chronic or External Factors |  | Financial\_Stress vs Anxiety\_Score | — | There is no correlation between financial stress and anxiety score | There is a correlation between financial stress and anxiety score | No significant p-value given for this pair |  |
| Chronic or External Factors |  | Financial\_Stress vs CGPA | — | There is no correlation between financial stress and CGPA | There is a correlation between financial stress and CGPA | No significant p-value given for this pair |  |
| Access to Resources | Are students using counseling services more likely to report lower stress, depression, and anxiety? | Counseling\_Service\_Use vs Stress\_Level | — | Counseling service use does not relate to stress level | Counseling service use relates to stress level | No significant p-value given for this pair |  |
| Access to Resources |  | Counseling\_Service\_Use vs Depression\_Score | — | Counseling service use does not relate to depression score | Counseling service use relates to depression score | No significant p-value given for this pair |  |
| Access to Resources |  | Counseling\_Service\_Use vs Anxiety\_Score | — | Counseling service use does not relate to anxiety score | Counseling service use relates to anxiety score | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors | How does extracurricular involvement relate to stress, sleep quality, and academic performance? | Extracurricular\_Involvement vs Stress\_Level | — | Extracurricular involvement does not relate to stress level | Extracurricular involvement relates to stress level | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors |  | Extracurricular\_Involvement vs Sleep\_Quality | — | Extracurricular involvement does not relate to sleep quality | Extracurricular involvement relates to sleep quality | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors |  | Extracurricular\_Involvement vs CGPA | — | Extracurricular involvement does not relate to CGPA | Extracurricular involvement relates to CGPA | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors | Does sleep quality impact depression, anxiety, and physical activity? | Sleep\_Quality vs Depression\_Score | — | Sleep quality does not relate to depression score | Sleep quality relates to depression score | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors |  | Sleep\_Quality vs Anxiety\_Score | — | Sleep quality does not relate to anxiety score | Sleep quality relates to anxiety score | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors |  | Sleep\_Quality vs Physical\_Activity | — | Sleep quality does not relate to physical activity | Sleep quality relates to physical activity | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors | Do students involved in extracurricular activities have better CGPA despite high stress? | Extracurricular\_Involvement vs CGPA | — | Involvement does not affect CGPA | Involvement affects CGPA | No significant p-value given for this pair |  |
| Behavioral and Lifestyle Factors |  | Extracurricular\_Involvement vs Stress\_Level | — | Involvement does not affect stress | Involvement affects stress | No significant p-value given for this pair |  |