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Understanding the Academic Stress-Sleep Quality: Implications for Academic Performance

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Abstract

This study examines the impact of academic stress and sleep quality on undergraduate students in Nepal. Using a quantitative, descriptive research design, data were collected from 384 students via a structured questionnaire. Findings indicate high stress levels due to academic workload, with 46.1% frequently experiencing nervousness and 49.7% feeling a lack of control. Poor sleep quality was reported by 38.5%, leading to headaches and irritability. Female

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students exhibited slightly higher stress levels. The study highlights the strong link between stress, sleep disturbances, and academic performance, emphasizing the need for institutional support and stress management initiatives.

Keywords: Academic, Performing, Stress, Sleeping, Quality

Introduction

In this age of technical advancement and globalization, education is seen as the foundation for all human endeavors. Students' lifestyles and duties change significantly once they enter higher education. The increased academic workload is one of the most significant of the many difficulties faced by college students. Attending lectures, finishing homework, getting ready for tests, and participating in extracurricular activities are all included in this workload. These students' stress levels are increased by the pressure to perform well academically and ensure a bright future.

Students' performance is the level of proficiency attained in academic work and knowledge acquired in school subjects represented by the percentage of marks obtained by students in examinations. University students living in halls of residence face additional challenges that can further affect their quality of sleep. Problems in their sleep environment may include noise and roommates' different habits.

Sleep serves a fundamental physiological function for human beings, and the quantity and quality of required sleep depends on a number of interacting environmental factors and underlying physiological variables. Sleep problems have been linked to learning difficulties, neurocognitive performance, and poor academic performance. Previous studies have reported that more than 60% of the university population show sleep problems and more than 25% sleep < 7 h/night, as measured by indices reflecting poor sleep quality. Between 16–23% of university students report insomnia symptoms and significant mental health problems related to sleep disturbances.

Many college students are at risk for sleep disorders, and those at risk may also be at risk for academic failure. Very few research studies have been conducted in Nepal regarding sleep quality. Many of the college students may have the chance of being physically and emotionally disturbed. Moreover, the quality of sleep in Nepalese college students may be poor as there is ineffectiveness of education system in addition to the further practical courses (Rakshya Khadka, 2019).

In recent years, there has been growing concern about the negative impacts of heavy academic workload on students' well-being. One critical area affected by these demands is sleep. Adequate sleep is vital for maintaining cognitive functions, emotional stability, and overall health. However, numerous studies have shown that college students often experience poor sleep quality and sleep deprivation due to their academic commitments. The stress is considered a part of the student's life and can impact the student's coping mechanisms according to their needs for academic life (Mahvish Fatima, 2024).

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The repercussions of inadequate sleep extend beyond physical health, significantly impacting mental health. Various aspects of life can affect a college student's stress level, anything from sleeping habits to heavier work-load. Mental health is also affected heavily by stress, and stress has shown the ability to prevent students from being successful in their respective educational goals (Koch, 2018). For example, poor mental health is associated with poor academic performance. Research has also found that students cope with depressed mood, hopelessness, and concentration difficulties, all due to stress. These stressors are more so linked to depressive symptoms when the importance of said stressor is high. This stress, when transformed into mental health disparities can have drastic effects on a student's college career as well as their future (Koch, 2018).

Considering how critical sleep and mental health are to academic achievement, it is critical to comprehend the causes of these problems and find workable solutions. The purpose of this study is to investigate the connection between college students' mental health, sleep habits, and academic workload. The article aims to offer a thorough grasp of the underlying mechanisms and offer viable remedies to lessen the adverse effects by reviewing the body of available material.

Objectives of Study

To assess students' perceptions of academic stress, sleep quality, and academic performance.
To examine the relationship between stresses, sleep quality, and academic performance.
To analyze gender differences in perceptions of academic workload stress

Literature Review

Sleep Patterns in College Students

Sleep has always been a popular topic in many fields, and both physiological and psychological medicine have placed a high value on it as a basic physiological activity. Sleep is a fundamental component of health, playing a crucial role in cognitive function, emotional regulation, and physical health. However, college students frequently experience disrupted sleep patterns, characterized by insufficient sleep duration, irregular sleep schedules, and poor sleep quality. In addition to some sleep-related elements like "daytime physical fatigue" and "nightmares", "sleep quality" also refer to both subjective factors like the "depth" or "satisfaction" of sleep as well as more quantifiable ones like sleep length, sleep latency, or the frequency of awakenings. Rest plays a crucial part in keeping up great wellbeing all through the life expectancy of a individual. A few ponders emphatically suggest that time of going to rest and both rest quality and amount are associated with students' learning capacities and scholastic victory. Additionally, the comes about of diverse considers delineated that more than 60 percent of college students' rest quality was destitute, which is the result of daytime languor; too, these thinks about watched an expanding slant in both physical and mental wellbeing. In addition, restricted sleep in a simulated classroom led to lower exam scores, more distracted behaviors, and lower encouragement (Rahman, 2020).

Almost all students, medical and nonmedical, suffer from poor sleep patterns, which are a widespread issue. Students who get poor quality sleep do worse academically because they

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have shorter attention spans and less stamina to participate and learn in class. Cognitive processing is slowed down by sleep deprivation because it affects attentiveness and causes attention problems. Therefore, students' academic performance may be compromised, thereby increasing the risk of medical malpractice and maltreatment in the future (Malak A Al Shammari, 2020).

Mental Health Concerns

Mental health issues, including depression, anxiety, and stress, are also prevalent among college students. The pressures of academic workload, coupled with the challenges of adapting to a new environment, can exacerbate these mental health concerns. Studies have shown that students with higher academic workload are more likely to report symptoms of depression and anxiety, which in turn can further disrupt sleep patterns. Academic stress had significant negative correlation with academic achievement and mental health of the adolescents, also academic achievement had significant positive correlation with mental health (Kadhiravan, 2017). It is found that significant differences exist in the mental health of adolescents due to their academic stress (Swarnalatha, 2021).

The President's New Freedom Commission on Mental Health (2003) estimates that between 5 and 9% of kids suffer from a "serious emotional disturbance." This phrase describes any diagnosable mental illness that significantly impairs social, intellectual, and emotional functioning in children under the age of 18.This means that in our schools, there are one to two children in every classroom who are suffering from a serious mental disability, yet nearly 80% of these children do not receive the mental health services they require (Singh, 2015).

Mental health issues in college students have consistently increased over time and these challenges and stressors pose a major problem for many college students with both their health and academic experience affected negatively including discontinuous college enrollment (Tammy Jordan Wyatt, 2017). In this study, we examine the prevalence of mental health challenges across genders and ethnicities as well as analyze the impact of mental health on academic performance throughout four years in college.

Academic Workload and Its Impact

Academic problems have been regarded as the most common stressor for college students. For example, in Schafer’s investigation, students reported that the most significant daily hassles were academics-related stressors such as constant study, writing papers, preparing for exams, and boring teachers. The academic workload in college is often intense, with students juggling multiple assignments, exams, and projects. This high level of academic demand can lead to significant stress, which negatively impacts both sleep and mental health. For instance, students with higher academic workload often report poorer sleep quality and higher levels of stress. Additionally, the irregular schedules and late-night study sessions common among college students can further disrupt sleep patterns, leading to a vicious cycle of sleep deprivation and increased stress. The academic performance of students impacts their future educational attainment and health and therefore emerged as a good health concern. Generally, as levels of education increase, there is increase in income and social status (Sauya, 2022). This study

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focuses more on the harm than good stress does to students in relation to their academic performance at college.

Interrelationship between Sleep, Mental Health, and Academic Performance

The relationship between sleep, mental health, and academic performance is complex and bidirectional. Poor sleep can lead to cognitive impairment, which affects academic performance and increases stress levels. Conversely, high stress levels and poor mental health can lead to sleep problems, creating a feedback loop that makes both problems worse. According to research, students who are sleep-deprived are more likely to have mental health disorders, and those with mental health disorders are more likely to have poor sleep quality. Research shows that students who are sleep-deprived are more likely to have mental health disorders, and those with mental health disorders are more likely to not get enough sleep.

Research Methodology

This study used a quantitative research approach to gather and analyze numerical data. A descriptive research design was applied to understand students' experiences and behaviors related to academic workload, sleep patterns, and mental health. The research was conducted in various universities across Nepal, including both urban and rural areas, to ensure a diverse and representative sample. The target participants were undergraduate students who were actively engaged in their studies and used academic services. Only students who were 18 years or older were included in the study.

To determine the required number of participants, a 5% margin of error and a 95% confidence level were used. The z-score for a 95% confidence level is 1.96. Since there was no prior data on the population proportion, p = 0.5 was used for maximum variability. The sample size was calculated using the formula: After rounding up, the required sample size was 384 students.

A simple random sampling technique was used to select participants fairly and without bias. Data was collected using a detailed questionnaire that covered. A Likert scale to measure the frequency of stress-related experiences.

Results

Demographic Variable

Table 1: Age Respondents

What is your Age?			
		Frequency	Percent
Valid	18	8	2.1
	19	30	7.8
	20	26	6.8
	21	110	28.6
	22	134	34.9
	23	52	13.5

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	24	13	3.4
	25	11	2.9
	Total	384	100.0

Source: Field Survey 2024

The above table summarizes the age composition of the 384 college students who were interviewed regarding the influence of the academic workload on their sleeping habits and psychological states. In terms of age, most of the participants are 21, as 28.6% of the sample is composed of participants aged 21, while 34.9% of the sample participants are aged 22.

This indicates many of the participants were within these age groups probably because of being students. Some respondents were 18 years old 2.1 % 19 years 7.8% 20 years 6.8% 23 years 13.5% 24 years 3.4% and 25 years old 2.9 %. The cumulative percentage shows that each age group has been added in turn, until it becomes 100%. This population variant helps in comprehending the makeup of the sample so as to better explain the effect of academic workload on the sleep and mental health of students of different ages.

Table 2: Gender

What is your Gender?			
		Frequency	Percent
Valid	Female	207	53.9
	Male	177	46.1
	Total	384	100.0

Source: Field Survey 2024

The above table examines the gender distribution of the 384 college students surveyed regarding their study of academic workload on sleep pattern and mental health. Out of the total respondents, 207 were female, representing 53.9% of the sample. The remaining 177 respondents were males, comprising 46.1% of the sample. The cumulative percent shows that, after accounting for the female respondents, 53.9% of the total sample is reached, and when adding the male respondents, the cumulative total reaches 100%. This demographic breakdown helps ensure a balanced representation of genders in the analysis, providing insights into how academic workload impacts both male and female students.

Table 3: Education Level

Education Level			
		Frequency	Percent
Valid	Bachelor	384	100.0

Source: Field Survey 2024

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The above table indicates that all 384 respondents in the survey are Bachelor's degree students, representing 100% of the sample. This uniformity ensures that the study's focus remains consistent, examining the impact of academic workload on sleep patterns and mental health within a specific educational level. By concentrating solely on Bachelor's degree students, the analysis avoids variations that might arise from differing educational programs and provides clear insights into this particular demographic.

Stress among university students

The ratings of the student's stress levels are presented in the table below.

Table 4: Student's rating of stress

Items	Never	Almost Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you been upset because of something that happened unexpectedly?	7.3%	9.1%	55.7%	17.2%	10.7%
In the last month, how often have you felt that you were unable to control the important things in your life?	5.2%	12.0%	49.7%	20.6%	12.5%
In the last month, how often have you felt nervous and stressed?	4.7%	8.6%	46.1%	26.3%	14.3%
In the last month, how often have you felt confident about your ability to handle your personal problems?	5.5%	5.5%	36.2%	37.8%	15.1%
In the last month, how often have you felt that things were going your way?	4.9%	20.6%	46.4%	20.1%	8.1%
In the last month, how often have you found that you could not cope with all the things that you had to do?	7.3%	12.8%	46.6%	24.2%	9.1%
In the last month, how often have you been able to control irritations in your life?	5.5%	14.8%	47.4%	25.0%	7.3%
In the last month, how often have you felt that you were on top of things?	3.1%	12.0%	36.7%	35.2%	13.0%
In the last month, how often have you been angered because of things that happened that been outside of your control?	6.0%	15.1%	54.2%	20.8%	3.9%
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	6.2%	10.9%	39.1%	29.2%	14.6%

Source: Field Survey 2024

The table summarizes, step by step, the students' self-reports for the last month as regard their experience with stress. There was a considerable number of students who indicated that they

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were nervous and stressful, whereby 46.1% of the students indicated at times and 26.3% indicated reasonably often, nervousness and stress. Control of critical parts of their lives was also an issue for many students, as indicated by 49.7% sometimes and 20.6% fairly often. Varying levels of confidence were reported, for example 37.8% fairly often, felt confident of handling their personal problems, while 36.2% reported being confident only sometimes.

Equally, 46.6% of students indicated that at times they would find it difficult to cope with all of their tasks, while 24.2% indicated that they felt this way fairly often. Controlling irritations appeared to be another hurdle, 47.4% of students, for instance, sometime would control the irritations while 25.0% would do this fairly often. Additionally, as many as 54.2% of students at times indicated that they were angry about some of the things that were outside their control and 39.1% felt that the difficulties they were facing were accumulating to such an extent that it was only over in their dreams.

Such data speaks volumes on the gross level of stress that college students are subjected to and the other emotional factors that magnifies the stress levels. It discloses that a large group of students on a daily basis come across stress, feel weighed down by their duties and lack confidence and control over their requirements.

Sleep quality among university students

The ratings of the sleep quality levels among students are presented in the table below.

Table 5: Student's rating of sleep quality

Items	Sometimes	Rarely	Often	Almost always
I have difficulty falling asleep.	38.5%	38.3%	13.0%	10.2%
I fall into a deep sleep.	27.6%	10.2%	30.5%	31.8%
I wake up while sleeping.	31.5%	45.1%	16.9%	6.5%
I have difficulty getting back to sleep once I wake up in middle of the night.	32.3%	45.8%	14.1%	7.8%
I wake up easily because of noise.	29.4%	32.8%	18.2%	19.5%
I toss and turn	40.9%	30.2%	18.0%	10.9%
I never go back to sleep after awakening during sleep.	22.1%	60.9%	12.8%	4.2%
I feel refreshed after sleep.	23.4%	11.7%	30.2%	34.6%
Poor sleep gives me headaches.	22.7%	13.3%	25.5%	38.5%
Poor sleep makes me irritated.	25.0%	6.0%	30.7%	38.3%
I would like to sleep more after waking up.	32.0%	22.7%	21.9%	23.4%
My sleep hours are enough.	30.2%	15.4%	31.0%	23.4%
Poor sleep makes me lose my appetite.	28.6%	41.1%	17.7%	12.5%

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Poor sleep makes hard for me to think.	36.7%	11.5%	25.8%	26.0%
Poor sleep makes me lose interest in work or others.	30.2%	13.8%	28.6%	27.3%
My fatigue is relieved after sleep.	38.0%	8.3%	26.3%	27.3%
Poor sleep causes me to make mistakes at work.	42.4%	20.6%	23.2%	13.8%
I am satisfied with my sleep.	25.0%	17.7%	31.5%	25.8%
Poor sleep makes me forget things more easily.	41.4%	18.8%	25.5%	14.3%
Poor sleep makes it hard to concentrate at work.	37.5%	15.6%	23.7%	23.2%
Sleepiness interferes with my daily life.	42.2%	19.3%	23.2%	15.4%
Poor sleep makes me lose desire in all things.	43.5%	19.8%	22.4%	14.3%

Source: Field Survey 2024

The above table summarizes the college students' responses concerning the sleep patterns they have and how poor sleep affects their lives. It shows that 38.5% of the students sometimes have sleeping problems, with 38.3% of them rarely having such a problem. The students' response depicts that 31.8% almost always go to deep sleep and 30.5% are deep sleepers quite a number of times. For 31.5%, waking up mid-sleep is sometimes the case but for 45.1%, that is never the case. With respect to returning back to sleep after waking up, 32.3% have the problem quite a few times, while 45.8% rarely do. Noise influences the sleep of 29.4% of students occasionally, while 32.8% only experience it a few times. Moving restlessly is moderately of concern to 40.9% of the students.

Feeling ready to take on the day after sleep is something that 30.2% of the respondents say occurs often whereas 34.6% affirm that it always occurs. It is evident that poor sleeping habits often results in headaches and irritation as shown by 38.5% sleep troubled individuals and 38.3%. While 32.0% of the students sometimes feel like they want to go back to sleep after its time to wake up, for 31.0% that is almost hardly the case. The results also indicate that appetite, clarity of thought and level of interest in work may be far off normal which happens to 41.1%, 36.7% and 30.2% of students respectively. A significant 42.4% of the respondents do have the problem of making mistakes at work on occasions because of poor sleep while for 27.3% poor sleep does not trouble them at almost a constant sleep state. 31.5% is the number of those who regard their sleep as satisfactory, whereas 41.4% of them report having," forgetfulness" related to sleep issues, work concentration problems are also a concern as voiced by 37.5%.

Academic performance among university students

The ratings of the academic performance levels among students are presented in the table below.

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Table 6: Student's rating of Academic Performance

Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I made myself ready in all my subjects.	15.1%	33.9%	36.2%	9.6%	5.2%
I pay attention and listen during every discussion.	13.3%	45.1%	31.8%	6.8%	3.1%
I want to get good grades in every subject.	52.3%	34.6%	11.5%	1.0%	0.5%
I actively participate in every discussion.	10.7%	36.7%	37.2%	10.4%	4.9%
I gain focus when I see technical problems.	19.8%	44.8%	26.0%	7.3%	2.1%
I enjoy homework and activities because they help me improve my skills in every subject	15.9%	34.6%	26.0%	10.4%	13.0%
I exert more effort when I do difficult assignments.	18.0%	42.2%	30.7%	4.9%	4.2%
Solving problems is a useful hobby for me.	17.2%	44.0%	29.9%	5.7%	3.1%

Source: Field Survey 2024

The above table shows the intentions and behavior of college students in undertaking the activities associated with their studies and indicates the general level of agreement for students from "strongly agree" to "strongly disagree". It shows that a good number of students have a great desire to improve academically as 52.3 % and 34.6 % respectively agree and strongly agree with this statement. A lot of students are also willing and prepared to attend to their subjects but the opposite is also true for some learners. For example, there is also a high percentage that states otherwise: 36.2% are neutral regarding their level of preparedness and 31.8% are neutral regarding attention paid during discussions.

Likewise, the level of participation is also broad as 37.2% of the respondents are neutral to the question while 36.7% of the students agree that they do participate actively. The answers suggest that in most occasions students tend to concentrate and try much harder when engaged in more difficult tasks, however, enjoyment of homework and activities was much more sporadic with 26.0 percent of respondents remaining neutral and 23.4 percent disagreeing to a degree. Overall, the data points to the existence of a variety of attitudes on the part of students towards the performance of academic tasks, motivation and the areas that need improvement in terms of engagement.

Correlation between Stress and Sleep Quality

Table 7: Correlations (Stress and Sleep Quality)

		st_mean	sq_mean
st_mean	Pearson Correlation	1	.120*
	Sig. (2-tailed)		.019
	N	384	384

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sq_mean	Pearson Correlation	.120*	1
	Sig. (2-tailed)	.019	
	N	384	384
***. Correlation is significant at the 0.05 level (2-tailed).**			

Source: Field Survey 2024

The table provides the Pearson correlation analysis between "st_mean" and "sq_mean." The Pearson correlation coefficient between the two variables is 0.120, showing a weak positive relationship. The significance value (Sig. 2-tailed) is 0.019, less than the conventional threshold level of 0.05. That means that the correlation is statistically significant, with a meaningful association of the stress level with sleep quality in the 384 students sampled. In particular, the more stressful the state, the worse the quality of sleep. The note refers to a significant correlation at 0.05 level.

Stress and Academic Performance

Table 8: Correlations (Stress and Academic Performance)

		st_mean	ap_mean
st_mean	Pearson Correlation	1	.060
	Sig. (2-tailed)		.240
	N	384	384
ap_mean	Pearson Correlation	.060	1
	Sig. (2-tailed)	.240	

Source: Field Survey 2024

The above table shows the Pearson correlation analysis between two variables, "st_mean" representing stress mean and "ap_mean" representing academic performance mean for 384 students. The Pearson correlation coefficient between stress and academic performance is 0.060, showing a very weak positive relationship. The significance (Sig. 2-tailed) is 0.240, which is greater than the conventional threshold of 0.05. This would mean that the correlation is not statistically significant; no significant relationship can be established between stress levels and academic performance in the sampled students. Changes in the level of their stress do not therefore apparently affect their academic performance.

Sleep Quality and Academic Performance

Table 9: Correlations (Sleep Quality and Academic Performance)

		sq_mean	ap_mean
sq_mean	Pearson Correlation	1	.053
	Sig. (2-tailed)		.299
	N	384	384
ap_mean	Pearson Correlation	.053	1
	Sig. (2-tailed)	.299	
	N	384	384

Source: Field Survey 2024

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The above table shows the Pearson's correlation analysis between two variables, "sq_mean" and "ap_mean". There is a pretty weak positive relationship since Pearson coefficient between sq_mean and ap_mean is 0.053. The Significance, that is Sig. 2-tailed of 0.299 being greater than conventional level 0.05. This would imply that the correlation is insignificant, and there is no significant relationship between sleep quality and academic performance among the 384 students sampled. Thus, fluctuations in sleep quality do not appreciably affect the students' academic performance studied.

Gender differences in perceptions of academic workload stress

Table 10: Independent Samples Test (Stress mean and Gender)

Group Statistics										
	What is your Gender?		N	Mean	Std. Deviation	Std.Error Mean				
st_mean	Male		177	3.1757	.53271	.04004				
	Female		207	3.2961	.41347	.02874				
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
st_mean	Equal variances assumed	4.933	.027	-2.491	382	.013	-.12043	.04834	-.21547	-.02539
	Equal variances not assumed			-2.443	329.355	.015	-.12043	.04929	-.21739	-.02347

Source: Field Survey 2024

The above independent samples test outcome the test for difference of “st_mean” between two groups. Levene’s Test of Equality of Error Variances reads as “The F value = 4.933 is significant at 0.027 hence it can be concluded that the variances are not equal” Therefore the results of the t-test of equality of means assuming equal variance and the alternative of unequal variance. When using the assumption of equal variances the t-value is -2.491 at 382 degrees of freedom and the p-value is 0.013. The mean of differences between groups is 0.12043 and the standard error of differences is 0.04834. The 95 percent confidence interval for the mean of differences is between -0.21547 and -0.02539. If different variances are assumed then 329.355 the df t and is p -2.443 = with 0.015. The mean difference is -0.12043 with standard error of difference being 0.04929. The 95% CI for the mean difference is from -0.21739 to -0.02347.

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This shows that there is a significant different between the two groups for the variable "st_mean".

Conclusion

The study investigates the impact of academic stress, sleep quality, and their relationship with academic performance among university students. The results reveal that a significant number of students experience high stress levels, often feeling nervous, unable to control aspects of their lives, and struggling to cope with tasks. Sleep quality is also a concern, with many students reporting difficulty falling asleep, frequent awakenings, and poor sleep affecting their daily lives, such as headaches and concentration issues. Despite these challenges, most students show a strong desire to improve academically and are motivated by the desire for good grades. The correlation analysis indicates a weak but statistically significant positive relationship between stress and poor sleep quality, suggesting that higher stress levels contribute to poorer sleep.

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