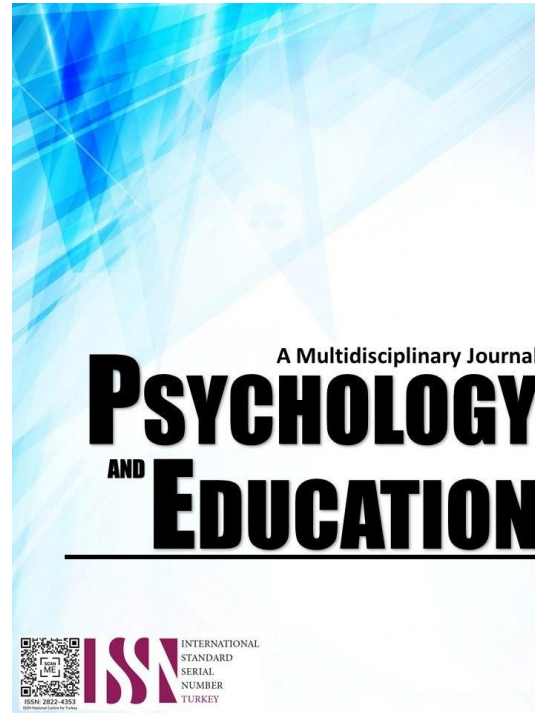


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The Relationship Between Sleep Habits, Academic Engagement, and Motivation in Senior High School Students

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Abstract

Sleep plays a critical role in students' cognitive function, well-being, and academic performance. However, senior high school students often experience insufficient sleep due to academic demands and extracurricular commitments. This study investigates the correlation between sleep patterns, learning engagement, and academic motivation among senior high school students at Lala Proper Integrated School during the 2023–2024 academic year. Utilizing a descriptive-correlational research design, data were collected from 100 randomly selected students through an adapted questionnaire assessing sleep patterns, learning engagement, and academic motivation. Findings indicate that while most students report adequate sleep duration, quality, and consistency, some experience sleep difficulties. Additionally, students exhibit high levels of learning engagement and motivation. Pearson correlation analysis reveals a significant positive relationship between sleep patterns and both learning engagement ($r = 0.441$, $p < 0.01$) and motivation ($r = 0.436$, $p < 0.01$), suggesting that students with healthier sleep habits tend to be more engaged and motivated academically. These results underscore the importance of promoting proper sleep hygiene and effective time management strategies to enhance students' academic engagement and motivation. Future research should explore other factors influencing students' sleep patterns and their broader impact on academic performance.

Keywords: *sleep patterns, learning engagement, learning motivation*

Introduction

Sleep is a fundamental factor influencing students' cognitive function, well-being, and academic performance. It enhances focus, energy levels, and learning efficiency, yet many senior high school students struggle to achieve sufficient rest due to academic demands, extracurricular activities, and excessive screen time. As a result, sleep deprivation becomes a prevalent issue, impairing concentration, engagement, and motivation in academic settings.

Research has consistently demonstrated the detrimental effects of poor sleep habits on both physical and mental health. Zhang et al. (2023) found that students with irregular sleep schedules are more susceptible to health complications, while Peltz and Rogge (2024) linked sleep deprivation to heightened anxiety, stress, and depression, all of which negatively impact academic performance. Additionally, Niu et al. (2025) reported a strong association between poor sleep quality and an increased risk of depression. Beyond mental health, insufficient sleep has been linked to cardiovascular risks (Wu et al., 2025) and increased susceptibility to falls and fractures (Zhou et al., 2023), underscoring its broader health implications.

Despite its importance, many high school students fail to develop healthy sleep habits due to multiple contributing factors. Heavy academic workloads, prolonged use of digital devices, and unhealthy lifestyle choices disrupt sleep quality (Sutay et al., 2022; Al-Wandi & Shorbagi, 2020). Environmental influences, such as household noise and inconsistent bedtime routines, further exacerbate irregular sleep patterns (Peltz & Rogge, 2024). Left unaddressed, these factors create a cycle of chronic sleep deprivation that significantly affects students' daily functioning.

Beyond health concerns, sleep deprivation has notable consequences on academic engagement. Studies indicate that insufficient sleep impairs cognitive function, reaction time, and problem-solving abilities (Thornton, 2018), leading to lower academic performance (Toscano-Hermoso et al., 2020). Sleep-deprived students struggle with classroom participation, knowledge retention, and motivation, increasing their risk of disengagement and academic underperformance. Additionally, inadequate sleep is associated with emotional instability, stress intolerance, and social withdrawal (Sivertsen et al., 2019), further diminishing students' ability to form positive relationships and engage in learning activities.

Addressing sleep deprivation requires collaborative efforts from students, parents, and educators. Schools can implement policies such as adjusted academic schedules and awareness programs to promote sleep hygiene, while parents can establish structured bedtime routines and limit screen exposure before sleep. At an individual level, students can improve sleep quality through better time management, relaxation techniques, and mindfulness practices (Katigbak et al., 2023). When these strategies are effectively integrated, students can achieve healthier sleep patterns, leading to enhanced academic engagement and motivation.

At Lala Proper Integrated School, many senior high school students face significant challenges in maintaining a balanced routine due to academic pressures, extracurricular commitments, and excessive gadget use at night. External factors such as household responsibilities, environmental disturbances, and inconsistent sleep schedules further contribute to poor sleep quality. Understanding how these factors impact students' engagement and motivation is crucial for designing effective interventions.

Although existing literature has extensively explored the relationship between sleep and academic performance, limited research focuses on its direct influence on learning engagement and motivation among senior high school students. Most studies have examined adolescent sleep patterns in general or focused on college students, leaving a gap in understanding how sleep deprivation affects high school students' daily academic experiences. While prior research establishes the cognitive and mental health consequences of sleep deprivation, further investigation is needed to determine how specific sleep patterns influence students' willingness to participate in learning activities and their intrinsic motivation to excel.

This study aims to bridge this gap by examining the relationship between sleep patterns, learning engagement, and motivation among senior high school students at Lala Proper Integrated School. The findings will provide valuable insights for students, parents, and educators in developing strategies that support both rest and academic success.

Research Questions

This study investigates the sleep patterns of senior high school students and how these relate to their learning engagement and motivation. Specifically, this study sought to answer the following questions:

1. How may the students' sleep patterns be described in terms of:
 - 1.1. sleep duration;
 - 1.2. sleep quality; and
 - 1.3. sleep consistency?
2. How may the students' learning engagement be described?
3. How may the students' learning motivation be described?
4. Is there a significant relationship between the respondents' sleep patterns and their learning engagement?
5. Is there a significant relationship between the respondents' sleep patterns and their learning motivation?

Methodology

Research Design

This study employs a descriptive-correlational research design to examine the relationship between sleep patterns, learning engagement, and motivation among senior high school students at Lala Proper Integrated School. A descriptive approach is utilized to characterize students' sleep habits, levels of learning engagement, and academic motivation, while a correlational approach is applied to determine the statistical relationships among these variables.

Respondents

The respondents of this study were senior high school students, with a total of 100 or more participants. They were chosen through random sampling to ensure that every student had an equal chance of being selected. These students were asked to answer a set of questions designed to understand their sleep habits, learning engagement, and motivation. Their responses provided valuable insights into how sleep patterns affect their academic experience.

Instrument

To collect data for this study, an adapted survey questionnaire was used, specifically designed to focus on senior high school students' sleep patterns, learning engagement, and motivation. The questionnaire were being checked and validated by the experts in the field. The questionnaire was divided into three sections, each addressing a key aspect of the research.

The first section explored students' sleep patterns, including their sleeping habits, the amount of rest they get, and factors that may affect their sleep quality. It aimed to understand how well students manage their sleep schedules and whether their sleep patterns align with recommended healthy practices.

Moreover, the second section assessed students' learning engagement by examining how actively they participate in academic activities, their level of concentration during lessons, and their willingness to engage in class discussions and tasks. This part helped determine whether students who experience sleep deprivation struggle with focus and participation in school. Lastly, the third section examined students' motivation, focusing on their enthusiasm for learning, their persistence in overcoming academic challenges, and their overall drive to succeed. Since motivation plays a crucial role in academic performance, this section aimed to identify whether irregular sleep patterns affect students' willingness to learn and stay committed to their studies.

Procedure

The researcher first secured permission from the school head to conduct the study. Once approval was granted, the researcher, with the assistance of senior high school advisers, personally administered the survey to the selected participants.

A total of 100 senior high school students were identified as respondents, and they were given clear instructions on how to answer the questionnaire. After the surveys were completed, the collected data was carefully tallied, consolidated, analyzed, and interpreted to draw meaningful insights regarding the relationship between sleep patterns, learning engagement, and motivation.

Data Analysis

The data collected from the survey was analyzed using the Statistical Package for the Social Sciences (SPSS). To measure the central tendency of the responses, the mean was computed. Since the Shapiro-Wilk test indicated that the data did not follow a normal distribution, a nonparametric test was used. Specifically, Spearman's Rho correlation was applied to determine the relationship between students' sleep patterns, learning engagement, and motivation. This statistical approach ensured that the analysis was appropriate for the nature of the data and provided reliable insights into the connections between these variables.

Ethical Considerations

This study adhered to ethical research standards to ensure the rights, privacy, and well-being of all participants. First, permission was obtained from the school administration before conducting the survey. Participants were informed about the purpose of the study, and their participation was completely voluntary, with no pressure or obligation to take part. They were also assured that their responses would remain anonymous and confidential, and the data collected would be used solely for research purposes.

Before answering the questionnaire, students were given a brief explanation of the study and were asked for their informed consent. They were also informed that they had the right to withdraw from the study at any time without any consequences. To maintain integrity and fairness, the research followed non-biased data collection and analysis procedures, ensuring that all responses were handled with accuracy and objectivity.

Additionally, all findings were presented honestly and transparently, with no manipulation or misinterpretation of results. The study strictly followed ethical guidelines in research, respecting the dignity and welfare of all respondents throughout the process.

Results and Discussion

This section presents the findings according to the study's research questions. To find out the mean, significant relationship using IBM SPSS 26.0

Sleep Duration

Table 1 shows the mean scores for students' sleep duration, with all indicators falling within the "High" interpretation range. The aggregated mean of 2.76 suggests that, overall, students feel they get an adequate amount of sleep to function well during the day.

Table 1. Mean Distribution on the Sleep Duration of the Students

<i>Indicators</i>	<i>Mean</i>	<i>Interpretation</i>
1. I get enough sleep to feel well-rested for the day.	2.96	High
2. I sleep for a satisfactory amount of time that allows me to function properly.	2.78	High
3. My sleep duration is consistent and supports my daily activities.	2.75	High
4. I tend to cut my sleep short due to schoolwork or other activities.	2.67	High
5. I tend to cut my sleep short due to schoolwork or other activities.	2.62	High
Aggregated Mean	2.76	High

Looking at the individual indicators, the highest mean score (2.96) comes from students reporting that they get enough sleep to feel well-rested, indicating that many students believe they are managing their sleep well. However, the responses also highlight that a significant number of students cut their sleep short due to schoolwork or other activities (2.67 and 2.62), which could suggest that while they may feel rested, they still sacrifice sleep for academic responsibilities.

This data implies that while most students maintain a decent amount of sleep, their schedules can still be demanding, making it difficult to maintain a fully consistent sleep routine. If students continue to shorten their sleep due to schoolwork, it could eventually affect their energy levels, focus, and overall well-being. Encouraging better time management and healthier sleep habits could help students maintain both academic success and proper rest.

Sleep Quality

Table 2 shows that students generally experience good sleep quality, with an aggregated mean of 2.85, which falls under the "High" interpretation. This suggests that most students feel that their sleep allows them to function well throughout the day.

Table 2. Mean Distribution on the Sleep Quality of the Students

<i>Indicators</i>	<i>Mean</i>	<i>Interpretation</i>
1. I wake up feeling rested and ready to start my day.	2.94	High
2. I find it easy to fall asleep at night when I feel tired.	2.80	High
3. I feel alert and energized throughout the day after sleeping at night.	2.86	High
4. I sleep peacefully throughout the night without frequent awakenings.	2.82	High
5. I believe that my good sleep quality enhances my concentration and mood during the day.	2.84	High
Aggregated Mean	2.85	High

Among the indicators, the highest mean score (2.94) comes from students reporting that they wake up feeling rested and ready to start their day. This is a positive sign, as it suggests that many students are getting restful sleep. Similarly, the responses show that students find it easy to fall asleep when they are tired (2.80) and sleep peacefully without frequent awakenings (2.82), which are important factors in maintaining good sleep quality.

However, while the overall sleep quality is rated as high, there is still room for improvement. Ensuring a consistent bedtime routine, minimizing distractions before sleep, and managing stress levels can help students further enhance their sleep quality. Since good sleep has been linked to better concentration and mood (2.84), maintaining healthy sleep habits can contribute to better academic performance and overall well-being.

Sleep Consistency

The table shows that students generally have consistent sleep habits, with an aggregated mean of 2.81, which falls under the "High" category. This suggests that most students try to maintain a regular sleep schedule, balancing their school and personal activities while ensuring they get enough rest.

Table 3. *Mean Distribution on the Sleep Consistency*

Indicators	Mean	Interpretation
1. I go to bed and wake up at the same time each day.	2.86	High
2. I wake up at the same time every day, including weekends.	2.68	High
3. I maintain a consistent bedtime and wake-up schedule throughout the week.	2.87	High
4. I successfully balance my academic and personal activities while maintaining a regular sleep schedule.	2.96	High
5. I consistently get the recommended amount of sleep to support my overall well-being.	2.68	High
Aggregated Mean	2.81	High

The highest mean score (2.96) comes from students reporting that they successfully balance their academic and personal activities while keeping a regular sleep schedule. This is a good sign, as it shows that many students are able to manage their time effectively without compromising their rest. Similarly, students maintain a consistent bedtime and wake-up schedule throughout the week (2.87) and go to bed and wake up at the same time each day (2.86), reinforcing the idea that they follow structured sleep routines.

However, the lower mean scores (2.68) indicate that some students struggle to wake up at the same time on weekends and consistently get the recommended amount of sleep. This suggests that while students may follow a routine on school days, they might deviate from it on weekends, possibly leading to irregular sleep patterns and fatigue during the week.

This data highlights the importance of maintaining consistent sleep habits every day, including weekends, to avoid disruptions in energy levels and concentration. Encouraging students to stick to a steady routine can help improve their overall well-being, focus, and academic performance.

Students' Level of Engagement

The table presents the students' level of learning engagement based on various indicators. The overall aggregated mean is 3.00, which falls under the "Engaged" category. This suggests that, on average, students demonstrate active participation in their learning process. Among the indicators, the highest mean (3.16) corresponds to students feeling interested in the topics studied in school, indicating a strong intrinsic motivation. Meanwhile, the lowest mean (2.91) reflects students' ability to stay engaged even when the subject is difficult or less interesting, suggesting that some struggle to maintain focus in challenging situations.

Table 4. *Mean Distribution on Students' Level of Engagement*

Indicators	Mean	Interpretation
1. I feel interested in the topics we study in school.	3.16	Engaged
2. I actively engage with the material by taking notes and asking questions during class.	2.98	Engaged
3. I participating in discussion ls or debates in class.	2.94	Engaged
4. I stay engaged with my schoolwork, even when the subject is difficult or not very interesting.	2.91	Engaged
5. I make an effort to understand the material, not just memorize it for exams.	2.94	Engaged
6. I often seek out additional resources to help me understand the lessons better.	2.97	Engaged
7. I enjoy working with my classmates on group projects or activities.	3.01	Engaged
8. I find it easy to stay focused on schoolwork when I am in class.	2.92	Engaged
9. I feel satisfied with my participation in school -related activities and tasks.	3.07	Engaged
10. I often take notes during class to help me stay engaged with the lessons.	3.08	Engaged
Aggregated Mean	3.00	Engaged

These findings imply that students are generally engaged in their learning but may require additional support when faced with difficult subjects. Their engagement is evident through active participation in discussions, note-taking, and seeking additional resources. However, the lower score in sustaining engagement during challenging topics suggests that educators might need to incorporate more interactive or real-life applications to maintain student interest in such areas.

Students' Level of Learning Motivation

The table shows the students' level of learning motivation, with an overall aggregated mean of 3.05, categorized as "Engaged." This indicates that students generally demonstrate motivation in their studies. The highest mean (3.23) is observed in students' drive to do their best even when tired or stressed, suggesting strong perseverance. On the other hand, the lowest mean (2.90) relates to staying motivated to study for exams or complete difficult projects, implying that some students struggle with motivation when faced with challenging tasks.

Table 5. *Mean Distribution on Students' Level of Learning Motivation*

<i>Indicators</i>		<i>Mean</i>	<i>Interpretation</i>
1.	I am driven to do my best in school, even when I am tired or stressed.	3.23	Engaged
2.	I feel motivated to complete assignments, even if they are not exciting to me.	3.13	Engaged
3.	I set specific academic goals for myself and work toward achieving them.	3.09	Engaged
4.	I feel proud when I achieve my academic goals.	3.14	Engaged
5.	I find it easy to stay motivated to study for exams or complete difficult projects.	2.90	Engaged
6.	I feel that doing well in school is important for my future opportunities.	2.99	Engaged
7.	I stay focused on my long-term goals, even if I face challenges or setbacks.	3.00	Engaged
8.	I feel that my efforts in school are rewarding, even if I do not always get perfect grades.	2.93	Engaged
9.	I believe that my academic success will contribute to my personal growth and future career.	3.10	Engaged
10.	I feel more motivated to work hard in school when I receive positive feedback from my teachers.	2.98	Engaged
Aggregated Mean		3.05	Engaged

These findings suggest that while students are motivated in their learning, they may need additional support when dealing with difficult subjects or tasks. Their motivation is evident in their commitment to achieving academic goals, valuing future opportunities, and feeling rewarded by their efforts. However, the lower motivation in studying for exams and completing difficult projects highlights the need for strategies that can help maintain their enthusiasm, such as positive reinforcement and structured support systems.

The Significant Relationship Between the Respondents' Sleep Patterns and Learning Engagement

The table presents the correlation between students' sleep patterns and their learning engagement. The Spearman rho correlation coefficient is 0.441, indicating a moderate positive relationship between the two variables. The p-value is 0.000, which is statistically significant at the 0.01 level. This means that better sleep patterns are associated with higher levels of learning engagement.

Table 6. *Significant Relationship between the Respondents' Sleep Patterns in their Learning Engagement*

<i>Correlations</i>		<i>Learning Engagement</i>
<i>Spearman rho</i>	<i>Sleep Patterns</i>	<i>Correlation Coefficient</i>
		.441**
		<i>Sig. (2-tailed)</i>
		.000
		<i>N</i>
		100

These findings suggest that students who maintain healthy sleep patterns tend to be more engaged in their learning. Conversely, poor sleep habits may negatively affect their ability to stay focused and participate actively in school activities. This highlights the importance of promoting good sleep hygiene among students to enhance their academic engagement. Schools and educators may consider implementing strategies to raise awareness about the impact of sleep on learning.

The Significant Relationship Between the Respondents' Sleep Patterns and Learning Motivation

The results show a significant positive relationship between sleep patterns and learning motivation among the respondents. The Spearman rho correlation coefficient is 0.436, indicating a moderate correlation between the two variables. The p-value is 0.000, which means the relationship is statistically significant. This suggests that students who have better sleep patterns tend to have higher learning motivation.

Table 7. *Significant Relationship between the Respondents' Sleep Patterns in their Learning Motivation*

<i>Correlations</i>		<i>Learning Motivation</i>
<i>Spearman rho</i>	<i>Sleep Patterns</i>	<i>Correlation Coefficient</i>
		.436**
		<i>Sig. (2-tailed)</i>
		.000
		<i>N</i>
		100

These findings imply that maintaining healthy sleep habits can contribute to increased motivation for learning. Students who follow consistent sleep patterns may experience improved focus, energy, and overall academic engagement. On the other hand, poor sleep habits could lead to decreased motivation, affecting their ability to learn effectively.

Conclusions

The findings of this study indicate that senior high school students generally maintain good sleep duration, quality, and consistency, enabling them to function effectively throughout the day. However, some students sacrifice sleep due to academic demands, which may have long-term implications for their overall well-being. Despite variations in sleep patterns, students exhibit high levels of learning engagement, actively participating in discussions and making efforts to understand their lessons. Furthermore, students demonstrate strong academic motivation, setting goals and recognizing the significance of education for their future success.

The study further revealed a significant positive correlation between sleep patterns and both learning engagement and motivation. This suggests that students who maintain consistent and high-quality sleep are more likely to be focused, energetic, and driven to succeed in their studies. Conversely, insufficient sleep can lead to decreased concentration, reduced participation, and diminished motivation, ultimately affecting academic performance. These findings highlight the critical role of sleep in students' cognitive and emotional well-being, emphasizing the need for interventions that promote healthy sleep habits.

Based on the study's conclusions, several recommendations are proposed to promote healthier sleep habits among students and enhance their learning engagement and motivation. Schools and educators should implement strategies that help students develop time management skills, enabling them to balance academic responsibilities and personal well-being. Additionally, educational campaigns should be conducted to raise awareness about the importance of sleep and its impact on learning, motivation, and mental health. To further support students, academic workloads and schedules should be adjusted to minimize excessive late-night studying, which can disrupt sleep patterns.

Parents also play a crucial role in fostering healthy sleep habits. They should encourage consistent sleep routines at home by setting designated bedtime schedules and limiting screen time before sleep. Moreover, parents can support students in managing academic stress by creating an environment that prioritizes both well-being and academic success. This balance will help students develop healthier habits and prevent sleep deprivation.

At the individual level, students should adopt self-regulation strategies to effectively manage their time, ensuring that academics, extracurricular activities, and personal commitments do not interfere with sleep quality. Practicing healthy sleep habits, such as avoiding stimulants like caffeine before bedtime and maintaining a comfortable sleeping environment, can also contribute to better rest and overall well-being.

This study provides a foundation for future research on the relationship between sleep patterns, learning engagement, and academic motivation. Future studies could explore additional variables, such as the effects of sleep patterns on cognitive functions, emotional regulation, and stress management. Researchers may also examine the effectiveness of interventions aimed at improving sleep habits, including mindfulness techniques, sleep hygiene programs, and school policy modifications. Longitudinal studies could offer deeper insights into the long-term impact of sleep patterns on academic performance, mental health, and career readiness. Additionally, investigating external factors such as socioeconomic status, family environment, and digital media consumption may provide a more comprehensive understanding of the factors influencing students' sleep behaviors.

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