

Effects of Sleep Deprivation on Students Academic Achievement

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Abstract: *The study explored the effects of sleep deprivation on students academic achievement. To find the answer, the researchers used a sample size of 50 senior high school students studying in Marcelo H. Del Pilar National High school. A standardized questionnaire was generated using the Google Form, and the link was shared through social media—Facebook and Messenger. The survey asked the students about sleep deprivation. The data indicated that most of student's stressful events are in educational surroundings. The researchers, therefore, concluded that the result of this study shows that sleep deprivation has a huge negative impact on academic performance, students who have these disorders are at risk of suffering from poor performance and resistance to anything school-related. The researchers recommended that school may remind students that sleep deprivation may cause poor academic performance.*

Keywords—Sleep deprivation, academic achievement

1. INTRODUCTION

In the middle of covid - 19 pandemic many students suffer from sleep deprivation because of too much stress and anxiety. In this study, shows that Sleep is necessary for physical and cognitive health; these functions are susceptible to be impaired by sleep deprivation. This study evaluated the sleep patterns of the medical students and the impact they have on their academic performance [1]. A lack of sleep also has negative impact on our emotional regulation and mood according to the study, Poor quality of sleep and excessive daytime sleepiness affect cognitive ability and have a negative impact on the academic this study aims to determine the prevalence of excessive daytime sleepiness, sleep quality and psychological distress as well. Sleep deprivation can have substantial consequences for learning achievement [2].

Sleepiness and irregular sleep schedules have many unintended consequences, one of which is to negatively impact learning, memory, and performance can result in lower grade point averages, increased risk of academic failure, compromised learning, impaired mood. A good night's sleep is essential for improving cognitive abilities, particularly memory retention. Students' physical and cognitive health as well as their academic performance are impacted by poor nightly sleep and the resulting daytime tiredness.

The overall objective was to determine the effects of sleep deprivation on students' academic achievement in the new normal learning system.

2. RELATED WORKS

Lack of sleep, often known as sleep deprivation, can be either chronic or acute. Chronic sleep restriction can result in weariness, drowsiness during the day, clumsiness, and weight loss or growth. It has a negative impact on brain and cognitive function. However, in a small number of situations, sleep deprivation paradoxically results in more energy, alertness, and improved mood. Even as a form of treatment for

depression. Lack of sleep is associated with slower frontal cortex brain waves, decreased attention span, increased anxiety, poor memory, and a bad mood [4]. Medical students' academic performance is negatively impacted by poor sleep quality and excessive daytime sleepiness, both of which have an impact on cognitive function. The purpose of this study is to ascertain the prevalence of excessive daytime drowsiness, poor sleep quality, and psychological distress in this group [5] and to evaluate how closely these factors are related to poor academic performance.

Lack of sleep can have a significant impact on academic performance in college. However, previous research on this subject has been constrained by the use of convenience samples, cross-sectional data, insufficient confounder control, and a lack of outcome data from official school records. The relationship between sleep deprivation and college graduation was examined using logistic regression. Chronic sleep deprivation may be linked to lower GPA, according to the results of the random-effects and fixed-effects models. From their freshman through senior years, students who suffered sleep deprivation had a decreased chance of graduating than those who did not. Additionally, it was discovered that sleep deprivation during a student's final year had a greater impact on graduation than sleep deprivation during a student's freshman year.

Sleep deprivation may have grave health consequences; resulting in increasing disease morbidity and mortality. Sleep disturbance has also been affected the academic performance of medical students. Present study showed, 57% students were complaining of disturbed sleep. Students who felt sleepy during daytime (72.4%) were struggling more during exams compared to students not feeling sleepy (51.7%), which was statistically significant. Study revealed, students who got average mark in last semester exam were most affected with disturbed sleep (66.3%) followed by students who got good marks (53.5%) and poor marks (50%) [8].

Academic performance is impacted by sleep. Previous research concentrated on the detrimental effects of insufficient sleep time and poor sleep quality on GPA. There are now some fresh, new sleep measures. Sleep consistency gauges a student's propensity to wake up or go to bed at the same time each day. Students who sleep more regularly perform better academically. Higher grades are linked to a preference for the morning and early classes. The length of sleep may increase with later high school start times, but happiness and wellbeing are improved rather than GPA, which does not increase regularly. It is crucial to screen for a sleep disorder in students who are having scholastic difficulties. Devices that could help students better track their sleeping patterns, consistency, Chronotype, and behaviors are also being developed.

Medical students' academic performance is negatively impacted by poor sleep quality and excessive daytime sleepiness, both of which have an impact on cognitive function. The frequency of excessive daytime drowsiness, the caliber of sleep, and psychological discomfort in this cohort, as well as how closely they are related to poor academic performance [11].

Poor sleep quality, daytime sleepiness and depressive symptoms are frequent among medical students and are associated with lower academic performance. The identification of students at risk and the implementation of targeted interventions are warranted. Fostering adequate sleep habits and training on sleep medicine may partly counteract these issues [12].

There is a dearth of quantitative evidence utilizing objective metrics to explicitly evaluate the relationship between sleep and academic achievement, despite the prevalence of survey studies reporting links between sleep and cognitive function. Overall, higher grades were associated with higher quality, longer duration, and more consistent sleep. The night before a test had no relation to test performance, but the month and week prior to a test did have a correlation between better grades and sleep duration and quality. Nearly 25% of the difference in academic performance was explained by sleep metrics. It offers quantifiable, factual proof that more consistent, longer-lasting sleep patterns are closely linked to higher academic achievement in college [13].

A univariate study found strong correlations between the aforementioned aspects of sleep and the affective aspects of subjective well-being, with the exception of sleep latency. Except for sleep latency and frequency of sleep disruptions, the analysis also showed significant relationships between the aforementioned sleep variables and psychological well-being. In our univariate analysis, we only discovered that daytime dysfunction was substantially linked with academic achievement. Additionally, the multivariate study demonstrates that academic success, affect balance, and psychological well-being each have a direct impact on overall sleep quality. Overall sleep quality and psychological well-being have a U-shaped association, whereas overall sleep quality and affect balance have a linear relationship that is tempered by psychological well-being [14]. The most

vulnerable demographic group for various types of sleep problems is full-time students who experience high levels of stress as a result of a heavy workload of course materials and performance standards.

According to the study, there is no much of a gender difference in the degree to which students suffer from various sleep disorders. When compared to students who had normal sleep patterns, those with more severe sleep problems had poorer grade point averages. The findings supported the idea that college students with sleep difficulties performed worse academically [15].

3. STATE OF THE PROBLEM

The main problem of this study is to determine the Effects of Sleep Deprivation on Students Academic Achievement. Specifically, this study sought answers to the following questions:

1. How may sleep deprivation on students may be described?
2. What is the level of sleep deprivation in students academic achievement?
3. Does the sleep deprivation significantly affect students academic achievement?
4. What implications may be derived from the findings of the study?

4. METHODOLOGY

The researchers used descriptive correlational research method in this study. Correlational research is a type of research technique that includes the observation of two variables in order to establish a statistically corresponding relationship between them. Particularly, the main objective of this study is to determine the effects of sleep deprivation on students academic achievement.

Guided by Raosoft software, a calculator sample size, the respondent of a study was composed at 47 out of 100 senior high school students during the school year 2021-2022. The researcher used random sampling technique or the fish bowl technique in determining the sample from the population.

To gather necessary data for this study, the researchers utilized 15-item self-made questionnaires which aims to describe the experience of students dealing with anxiety. This questionnaire is a 5-point Likert type and was subjected to expert validation. Meanwhile, the researchers adopted a standardized questionnaire entitled, "Consequences of inadequate sleep during the college years: Sleep deprivation, grade point average, and college graduation Preventive medicine developed and validated by Chen, W.L., Chen, J.H. (2019) to describe the effects of sleep deprivation on students academic achievement. This questionnaire is a 5-point Likert scale type and is highly reliable as evidenced by .84 Cronbach Alpha.

In gathering the data, the researchers followed the following procedures: With a careful approval of the Research Coordinator of the Marcelo H. del Pilar National High School after implementing all the comments, suggestions and

recommendations during the proposal defense, a letter was sent to the school principal to ask permission to conduct the study. With their approval, the researchers prepared the google forms link indicating the consent form on the first part of the survey and then distribute them to the respondents with the assistance of the researcher’s contact person per strand/section.

The data were tabulated and processed using Statistical Packages for Social Sciences (SPSS). To analyze and interpret the data gathered, the following statistical measures were used: mean procedures, frequency counts, and Pearson correlation coefficient/regression analysis.

5. RESULTS AND DISCUSSION

Sleep Deprivation

Table 1. Sleep Deprivation

Indicators	Mean	Interpretation
1. I can’t do the task that are given.	4.43	To a great extent
2. I have overtime in work.	4.05	To a great extent
3. In work i was a night ship.	4.08	To a great extent
4. I can’t sleep early because of the task I’m doing.	3.94	To a great extent
5. Watching movie at night.	4.10	To a great extent
6. Playing mobile games at night.	4.11	To a great extent
7. Doing the task late.	4.05	To a great extent
8. Staying up late reading book.	4.13	To a great extent
9. Staying up late watching tv.	4.08	To a great extent
10. I’m stressed of school works.	4.16	To a great extent
11. I spent my night overthinking.	4.21	To a great extent
12. Playing mobile games.	4.10	To a great extent
13. Change of sleeping routine.	4.13	To a great extent
14. To much stress.	4.24	To a great extent
15. Having panic attacks.	4.24	To a great extent
AVERAGE:	4.13	To a great extent

Table 1 showed that the assessment of sleep deprivation got extent rating as evidenced by 365 mean percentage score. This was shown by the following indicators. The students

can’t do the task that are given (4.43). The students have overtime in work (4.05). The students are night ship in work (4.08). The students can’t sleep early because of the task their doing (3.94). The students watching late at night (4.10). The students playing mobile games at night (4.11). The students doing the task late (4.05). The students staying up late reading book (4.13). The students stating up late watching t.v (4.08). The students stressed because of school works (4.16). The students spend their night overthinking (4.21). The students playing mobile games at night (4.10). The student struggling because od changing sleeping routine (4.13). The student suffering for to much stress (4.24). The students having panic attack (4.24).

In Table number 1 the highest mean is “I can’t do the task that are given” with the mean of 4.43. And the lowest mean comes from "Doing the task late" with the mean of 4.05. Explain that the majority cause of sleep deprivation is lack of appetite to do the said activity or assignment.

Students Academic Achievement

Table 2. Students Academic Achievement

Indicators	Mean	Interpretation
1. I don’t get enough sleep at night	4.43	To a great extent
2. I get insomnia at night.	4.02	To a great extent
3. I can’t focus on studying because of work.	4.18	To a great extent
4. Not having enough energy to study	4	To a great extent
5. Lacking sleep after watching series.	4.16	To a great extent
6. I can’t follow the given tasks	3.97	To a great extent
7. I can’t focus and concentrate.	4.24	To a great extent
8. Impulsive decisions in school	4.27	To a great extent
9. I get anxiety during class.	4.18	To a great extent
10. I am always dizzy from lack of sleep.	4.05	To a great extent
11. I can’t memorize the task given.	4.05	To a great extent
12. I feel tired all the time.	4.05	To a great extent
13. I always wanted to sleep.	4.29	To a great extent
14. Having panic attacks.	3.97	To a great extent
15. I can’t concentrate on studying.	4.29	To a great extent
AVERAGE:	4.14	To a great extent

The table 2 shows that the assessment on sleep deprivation got a great extent as evidenced by 365 mean percentage score. This was shown by the following indicators; The students don't get enough sleep at night (4.43). The students get insomnia at night (4.02). The students can't focus on studying because of work (4.18). The students are not having enough energy to study (4). The students lack of sleep after watching series (4.16). The students can't concentrate on studying (3.97). The students can't follow the given task (4.24). The students can't focus and concentrate (4.27). The student having impulsive decisions in school (4.18). The students get anxiety during class (4.05). The students always dizzy because of lack of sleep (4.05). The students can't memorize the task given (4.05). The students feel tired all the time (4.29). The students having panic attack (3.97). The students always want to sleep (4.29).

The highest mean went to "I don't get enough sleep at night" with the mean of 4.43 which means students don't get enough sleep every night because of their school works, and the one with the lowest mean "I can't follow the given task" with 3.97 which means that there are students who can't follow the stated activity due to lack of sleep.

Effects of Sleep Deprivation on Students Academic Achievement

Findings revealed that the sleep deprivation has a huge negative impact on students' academic achievement. The association between school start time and sleep duration, sustained attention, and academic performance. [8] This means that Longitudinal changes of sleep and sustained attention were associated with a coherent pattern of changes in academic performance.

Implication based on the findings of the study

Sleep Deprivation/ Sleep disorder is one of the most common problem of students during this pandemic. regrettably, not all students affected by Sleep Deprivation/ Sleep Disorder benefit from current treatments which is why continued research is so important. More information will help us better understand the brain mechanisms that lead to Sleep Deprivation/ Sleep disorders, and ultimately to identifying new treatments that target these brain mechanisms. It plays an important role in discovering new treatments, and making sure that we use existing treatments in the best possible ways.

6. CONCLUSION

The study examined the correlation between study sleep deprivation on students academic achievements. The findings of this study show the level of sleep deprivation on students have significant relationship through the examination of multiple studies and the conducted survey the researches

able to find the effects that sleep deprivation have on the performance of senior high school students. The survey shows the majority of respondent that the sleep deprivation is very common now that we are facing Covid - 19 pandemic. The students we're able to asses the problem arise while conducting are research. Most of the respondents participated well in the survey.

7. RECOMMENDATION

The researchers suggest the following direction for the future based on the findings and conclusion: involve students in a class discussion regarding their findings. Help them to understand the connection between the recommended amount of sleep and their emotional well-being and cognitive abilities. Students need to learn about how sleep affects their brains, particularly in terms of mood and memory. By keeping a sleep journal, it will be easier for students to see the direct link between getting enough sleep and their capacity to stay alert and concentrate well during class and on homework.

The study suggests that teachers plan a lesson that will cover both the benefits of getting good sleep and the negative effects of getting bad sleep. Make sure to include both real-world examples and facts and data in this lecture so that the students will comprehend its significance. The researcher advises teachers to write a guide for their students. It is vital to give the students a visual reference after the lesson. Students can benefit from their teachers' support by being encouraged to make a daily schedule that will teach them to go to bed at the same time each night.

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