

# Impact of Distance Learning Setup on the Sleeping Habits of Senior High School Students

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**Abstract:** The COVID-19 outbreak forced schools to close, disrupting the lives of millions of children in the Philippines. As a result, online distance learning has become a new means of learning. Despite the ongoing pandemic, kids were able to continue learning using this method. However, studies have shown that students suffer from a lack of adequate sleep as a result of this rapid change in their learning environment, which has an impact on how they operate at home and in class. The study's goal is to examine how distance learning affects senior high school students' sleep. The researchers employed a qualitative exploratory research approach, collecting qualitative data with open-ended survey questions and then analyzing it using thematic analysis. The study's findings revealed several themes from the students' responses, including: the online distance learning setup caused inconsistent body clocks, resulting in shorter sleep times; and students' physical and mental health deteriorated as a result of sleep deprivation, resulting in tiredness and exhaustion. The researchers came to the conclusion that the transition to the new learning environment and the amount of schooling had had a negative impact on the students' sleeping cycles. The researchers suggest that during the setup for distance learning, school administrators analyze and review the current academic program of the institution considering its effects on the sleep of students.

**Key Words:** COVID-19; sleep deprivation; distance learning; senior high school; qualitative research

## 1. INTRODUCTION

The COVID-19 epidemic has had a wide-ranging impact on people's lives, causing widespread mortality, the inability to do once-routine activities, and forcing millions of students to rely on virtual learning. The initial change has had an impact on students' sleeping habits as they transition to this new typical setting in which students have transitioned from face-to-face learning to an online distance

learning setup. Online distance learning is a type of learning modality in which students attend class from the comfort of their own homes, utilizing the internet and various technological devices. But with the sudden switch to online classes, students have become more independent and are staying up later to get their schoolwork done on time. This is despite the fact that lack of sleep has a big effect on how well they do in school and how they act.

According to Walker (2017), students have

been deprived of sleep for hours on end as a result of their constant staring at a computer screen, with the average amount of sleep that students got during the week being as little as 4-5 hours per night, which was detrimental for the students' welfare.

Significant evidence suggested that technology disrupted and altered the body's internal clock, increasing the likelihood of drowsiness, anxiety, and depression, which was not good for students' wellbeing and academic performance in their learning environment, such as less participation in online lectures, short attention span, lack of concentration, and students not attending class at all (Ritcher, 2015). Furthermore, insufficient sleep has dangerously severe consequences for students' daily functioning, such as feeling fatigued, unmotivated, unproductive, and lacking the energy to do their work vigorously (Edwards, 2008).

Virtual learning has undoubtedly increased the amount of time students spend on digital devices every day, resulting in a huge increase in their personal electronic usage and disrupting students' sleeping habits. This virtual environment provided students with the option to complete their projects at their own leisure, which had a negative impact on their sleeping habits.

According to Pham et al. (2021), the effectiveness of virtual learning and students' learning outcomes has become a source of concern. (Ming et al. (2011) argued that students spent one-third of their life sleeping; as a result, sleep deprivation contributed to issues such as daytime tiredness and decreased mental alertness, which affected their class performance.

The study aimed to understand the experiences of senior high school students on their online distance learning and its impact on their sleep. Specifically, this study seek to answer the following questions:

1. How does the online distance learning setup impact the sleeping habits of senior high school students?
2. What are the perceptions of senior high school students on their physical and mental health during online learning setup?

## 2. METHODOLOGY

### *2.1 Research Design*

The researchers used an exploratory qualitative research approach to investigate one or more variables in this study. The exploratory qualitative research design was used to have a further understanding and to explore ideas concerning the different factors affecting the current status of the phenomena. This design also utilized the open-ended type of questions for in-depth interpretation of the present situation. Furthermore, this approach has enabled the researchers to provide qualitative analyses based on the collected qualitative data.

This study gathered qualitative data based on the responses of the participants in the survey that was conducted by the researchers. The qualitative data retrieved from the respondents have been analyzed and coded using thematic analysis to generate new findings for this research.

### *2.2 Research Setting and Participants*

This study used purposive sampling in selecting the participants of the research who are Senior High School students from the Science, Technology, Engineering and Mathematics (STEM) strand, Humanities and Social Sciences (HUMSS) strand, and Accountancy and Business Management (ABM) strand of Nazareth School of National University in Sampaloc, Manila. The respondents consisted of 5 boys and 5 girls for every section in Grade 11 and Grade 12. The researchers gathered data from an researcher-made online survey questionnaire regarding the impact of the online distance learning setup on the sleeping habits of senior high school students.

Because of the pandemic's community quarantine requirements, this survey was performed through Microsoft Forms, which was delivered to the respondent's school account. As a result, the researchers have asked authorization from the senior high school teachers to perform the study formally. Furthermore, before completing the survey questions, the respondents signed consent forms to affirm that both the researchers and the participants agreed to the terms and conditions of the study. This letter offers the purpose for the research as well as assurances that all information supplied by respondents, including personal information if any,

will be kept confidential and used solely for this study.

### *2.3 Research Instrument*

The researchers employed questionnaires to help the researcher in collecting data to get data in response to the study's specific information to collect qualitative data for the impact of distance learning setup on the sleeping habits of senior high school students. The questionnaire was divided into two sections: the first addressed the students' demographic profile, while the second covered the researchers' open-ended questions.

The following questions are to be used in collecting qualitative data:

1. What do you feel about the online learning setup? Why?
2. How long do you sleep and why?
3. What are the things you do before you sleep?
4. How does school work affect your sleep schedule?
5. How would you describe your body clock?
6. When you first heard about the online class, what do you think it would be?
7. Do you think your sleep schedule is healthy? Why did you think so?
8. How would you describe your sleeping habit, sleeping quality, and body clock prior to and during the online learning setup? Is there a significant change? Explain in at least 5 sentences.

### *2.4 Data Gathering Procedure*

The researchers conducted a survey by using survey questionnaires that were answered by senior high school students at Nazareth School of National University, Manila. Considering the COVID-19 pandemic restrictions, the researchers have decided to gather information electronically.

The researchers required every class president to ask for the consent of these students to give their corresponding school email addresses. After receiving the email addresses, the researchers wrote

an email to every respondent regarding their approval to participate in this study. The researchers also included a consent form that the respondents have to accomplish in order to confirm the respondents' voluntary participation and to guarantee that all responses will be kept confidential and that will only be used for the purpose of this study.

After finalizing the participants of this study, an email that further explains the objectives and purpose of the study were sent individually to each respondent. Then, the researchers sent the link of the Microsoft Forms to the respondents' email addresses, and the participants were given enough time to answer the survey questionnaires.

After the survey forms was answered, the researchers downloaded the excel file of the responses in order to start the process of thematic analysis.

### *2.5 Data Analysis*

The data from Microsoft forms was collected and evaluated by the researchers using theme analysis. The answers were coded and put in a separate coding table so that the data could be easier to analyze and understand.

After each question in the coding table, the answers to the demographic profile and open-ended questions were written down, and each respondent was given a coded name to hide their identity. One of the researchers reads each response first, highlighting relevant texts and assigning shorthand codes to them.

Following that, the first researcher's highlighted words and codes will be reviewed by the second researcher for a second viewpoint on the codes. Due to the exploratory nature of the work, no intercoder reliability tests were performed.

The patterns in the generated codes were found by the researchers after the codes were formed. Codes with a likeness and link were joined to generate the categories from which the main themes emerged. The developed themes were then contextualized by linking them to the study topics.

### 3. RESULTS AND DISCUSSION

The following themes were discerned from the questionnaires for the purpose of identifying the effects of the virtual learning set-up on the sleeping habits of Senior High School students at a school in Sampaloc Manila:

Theme 1: Online Distance Learning Setup causes negative changes in the sleeping schedules of senior high school students causing sleep deprivation.

Theme 1 arises from the responses of the survey participants volunteering in this study, suggesting that the online learning setup brought significant changes in the sleeping schedules and body clocks of the senior high school students at Nazareth School of National University as it shows positive and negative changes prior to and during the virtual setup. Additionally, students were sleep-deprived during the online learning setup as it imposed shorter sleep duration, inconsistent body clocks, and poor sleep schedules due to piled-up academic requirements.

Table 1. Coding of survey questionnaire's responses for the negative changes in sleeping habits category

Survey Question	Response	Codes	Category
Question 8: How would you describe your sleeping habit, sleeping quality, and body clock prior	Respondent 30: My sleeping habit is not consistent, what I mean here is sometimes my sleeping time is late and sometimes early. I sometimes do not have any short naps any more than before.	Inconsistent sleeping habit	Negative changes in sleeping habits

to and during the online learning setup? Is there a significant change? Explain in at least 5 sentences.	Respondent 47: Before the online learning setup, I started being productive. I used to have a healthy routine where I woke up early, did things that I wanted, ate on time, and slept on time. During the online learning setup, my sleeping habit, sleeping quality, and body clock got a little worse than before. I don't have any routines anymore.	Feeling unmotivated and inactive
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Table 1 reveals the negative changes in sleeping habits. Insufficient sleep had been greatly affected by the alteration of setup in order to achieve an adequate amount of sleep. Ergo, it resulted in having an inconsistent sleeping habit due to giving up sleep time in order to satisfy the tasks needed to be done in time.

According to the results in Table 1, the transition to online learning altered their body clock and sleep quality. Respondent 30 reported sleep dissatisfaction or not getting enough sleep, whereas Respondent 47 reported an erratic body clock or a rapid change in their sleeping patterns. The findings reflect a prior study by Khare et al., (2021) showing the online learning environment, which includes the use of gadgets, has an impact on an individual's sleep health. The respondents stated that they had difficulty sleeping, that their sleeping habits became unpredictable, and that they were unsatisfied with their sleep.

This problem is associated with the study of Akman (2021), where the blue light emitted from the gadgets inhibits the secretion of melatonin, which widely affects the sleeping pattern because of hormonal imbalance. The statement of respondent 59 supports the existing theory of Wang et al. (2012) where students spend more time on sedentary

activities such as video games and computers due to the transition from face-to-face to online learning.

Theme 2: Online Distance Learning Setup impacts the sleep schedule of senior high school students causing physical and mental health deterioration.

Theme 2 points out the effects of the virtual learning setup on the participants' mental and physical health due to the completion of schoolwork pushing them to push their sleep time, leading to unwanted health problems and experiences.

Table 2 reveals the unhealthy effects of having an insufficient duration of sleep and how online class activities make them sleep-deprived. Shortened sleep time had adverse effects on the students' overall physical and mental health. Physically, the students felt exhaustion, fatigue, headache, and vomit. Usually, the headaches felt by the students are because of eye strain as most of the time their eyes are faced with their screens. Sleep deprivation also causes students to develop sleep disorders like insomnia.

Table 2. Coding of survey questionnaire's responses for the health problems and sleep disorder category

Survey Question	Response	Codes	Category
Question 7: Do you think your sleep schedule is healthy?	Respondent 47: No, I don't think my sleep schedule is healthy. I know to myself how late I sleep at some times, and I get sleepy the next day. I also lost some weight due to sleeping late and it sometimes affects my lifestyle. I am also dehydrated sometimes whenever I sleep way too late.	Weight loss and dehydration	Health problems and sleep disorder

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Respondent 15: I am very well aware that my sleep schedule is not healthy. The past few weeks I've been experiencing moderate to severe headaches more often than I ever experienced in my life. And I guess it has a connection with my sleeping schedule because I tried to complete 8 hours of sleep and maybe sleep an hour or two after midnight so the headaches will go away..

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During the timeframe of the outbreak, people were discouraged from leaving their homes and prevented from participating in any physically demanding activities. As a direct consequence of this, the amount of physical activity that students engage in has decreased, while their desire for engaging in technological entertainment has increased. A person's physical and mental health may suffer if they have an unhealthy relationship with their electronic gadgets, such as desktop computers, laptop computers, cellphones, and other similar devices (Hunt & Eisenberg, 2008; Vadim et al., 2013).

A study on the effects of electronic devices on the general health of children of school age found that 59 percent of the youngsters surveyed reported that they frequently suffer from headaches (Hegde A. et al., 2018). This was in relation to a survey that was conducted by the American Optometric Association. In the poll, the effects of prolonged screen time were described as eye strain, burning, itching, or weary eyes; headaches; weariness; blurred or double vision; and head and neck pain. This study lends credence to the data shown in Table 2, notably the comments made by respondents 47 and 15 on the challenges they face with their health.

#### 4. CONCLUSIONS

The results demonstrate that the majority of students are sleep deprived throughout the online learning environment, which has an influence on their physical and mental health. As the online distance learning continues, the respondents' sleeping patterns, sleeping quality, and body clock worsen. Furthermore, the overall findings of this study provide compelling evidence of the relevance and significance of assessing the experiences of senior high school students during online distance learning and the impact on their sleep.

Previous research has shown that students are unaware of the negative impacts of sleep deprivation on their cognitive performance, behavior, and health. The rapid transition to online distance learning has a significant effect on the sleep quality of senior high school students, according to this study. The school has a significant impact on people's sleep, especially teenagers and adolescents who remain up late doing schoolwork.

The study's findings can lead to an open discussion of the issue of the current mode of learning, which has a substantial impact on the sleeping habits of senior high school pupils. Furthermore, the success of this study could improve students' health and academic performance. Given these findings, the researchers urge school administration to assess and evaluate the institution's current academic timetable during the virtual learning setup. This evaluation should also take into account students' perspectives on their online learning experiences and how they affect their sleep.

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