Lifestyle and Eating Habits on Sleep Quality among Senior High School Students

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ABSTRACT

This study examined the influence of lifestyle and eating habits on the sleep quality of senior high school students at Lorenzo S. Sarmiento Sr. National High School. The primary goal was to determine the levels of lifestyle factors, eating habits, and sleep quality, while investigating the significant relationships between these variables. The study also sought to identify which aspects of lifestyle and eating habits most strongly influenced sleep quality. A quantitative-correlational design was used, with 203 senior high school students from Lorenzo S. Sarmiento Sr. National High School as respondents. The statistical tools employed included mean, Spearman's rho, and multiple regression analysis. The results revealed that senior high school students exhibited varying patterns of lifestyle, including physical activity, screen time, and eating habits, which impacted their overall sleep quality. Significant correlations were found between certain lifestyle factors and sleep quality, such as the amount of physical exercise and meal timing. The study indicated that healthier lifestyle choices, including balanced eating habits and regular physical activity, were linked to better sleep quality. Based on the findings, it is recommended that interventions targeting the improvement of students' lifestyle and eating habits be integrated into school programs to enhance their sleep quality, thereby contributing to their overall well-being and academic performance.

Keywords: TVL-Caregiving, Lifestyle, Eating Habits, Sleep Quality, Senior High School Students, Philippines

INTRODUCTION

In the global context, sleep played a crucial role in cognitive function, physical health, and emotional well-being, impacting academic performance and overall quality of life (Brinkman et al., 2023). However, recent studies indicated a growing prevalence of non-communicable sleep disorders across Africa, adding strain to healthcare systems already burdened by communicable diseases (Nakie et al., 2024). In Ghana, exposure to Westernized lifestyles such as unhealthy eating habits, excessive social media use, and lack of physical activity had been linked to sleep disturbances (Yeboah et al., 2022). Similarly, in the United States, inadequate sleep negatively affected health and social outcomes, contributing to poor educational performance and labor market productivity, and was associated with seven of the 15 leading causes of death (Chattu et al., 2018).

A healthy lifestyle was essential for improving sleep quality, especially among adolescents. In the Philippines, the Department of Health (2022) emphasized the importance of physical activity in combating obesity, mental health disorders, and sleep-related issues. Poor lifestyle choices, including insufficient exercise, unhealthy eating, and excessive screen time, had been identified as major contributors to sleep deprivation among

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Filipino high school students (Dungog et al., 2021). Regular physical activity and reduced gadget use were associated with improved sleep duration and efficiency (Alnawwar et al., 2023).

Furthermore, diet played a significant role in sleep quality, with studies showing that high consumption of sugary drinks, fast food, and processed meat led to poor sleep, whereas whole grains, fruits, and vegetables promoted better rest (Gados et al., 2021). This concern was particularly relevant in the Philippines, where many adolescents consumed diets high in processed foods and sugars, leading to nutritional deficiencies (National Nutrition Council, 2023). Research further suggested that balanced nutrition was linked to better sleep patterns, highlighting the critical role of dietary choices in overall well-being (Bower & Moyer, 2020; Angeles-Agdeppa et al., 2022).

In Davao City, a study revealed that many students engaged in sedentary behaviors and unhealthy eating habits, affecting their physical health and compromising their sleep quality (Dela Cruz, 2023). Recent data showed that 68% of students experienced academic stress that disrupted their sleep, with only 30% achieving the recommended eight hours of rest. Additionally, 20% of students pulled all-nighters at least once a month, leading to a 30% decline in cognitive abilities and a 10% drop in academic performance (Quinagan & Galabo, 2023). At Lorenzo S. Sarmiento Sr. National High School, researchers observed that many students struggled with poor sleep due to irregular sleeping patterns and excessive late-night gadget use. This raised concerns about whether poor lifestyle habits and unhealthy eating contributed to sleep deprivation, affecting students' focus and academic success.

Research Objectives

1. To determine the level of lifestyle among senior high school students in terms of:

1.1 health & exercise;
1.2 psychological health;
1.3 nutrition;
1.4 environmental concern; and
1.5 social concern.

2. To assess the level of eating habits among senior high school students in terms of:
   2.1 healthy eating cognition;
   2.2 dietary restrictions; and
   2.3 diet superiority.
3. To determine the level of sleep quality among senior high school students in terms of:
   3.1 sleep latency;
   3.2 sleep duration; and
   3.3 sleep efficiency
4. To determine the significant relationship between lifestyle and sleep quality among senior high school students.
5. To determine the significant relationship between eating habits and sleep quality among senior high school students.
6. To determine which domains of lifestyle significantly influence sleep quality among senior high school students.
7. To determine which domains of eating habits significantly influence sleep quality among senior high school students.

METHODOLOGY

This study employed a quantitative non-experimental research design that used correlational techniques to describe the hypothetical relationship between lifestyle, eating habits, and sleep quality among senior high school students and determine the direction and degree of that relationship if one existed. When the purpose was to describe the condition of the situation as it existed at the time of the study to investigate the causes of a particular phenomenon, the descriptive correlation method was considered appropriate.

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Correlational research design investigated relationships between variables without the researcher controlling or manipulating them.

A correlation reflected the strength and direction of the relationship between two or more variables (Bhandari, 2021). Correlational research was the best quantitative method of research when there were two or more quantitative variables from the same group of subjects (Gay et al., 2006). This survey dealt with quantitative data about the said phenomenon. The quantitative aspect was an appropriate schedule for gathering the data designed for the target respondents to answer the questions. The process of collecting the data used questionnaires. The focus of the study was to determine the influence of lifestyle and eating habits on sleep quality among senior high school students at Lorenzo S. Sarmiento Sr. National High School.

Population and Sample

Simple random sampling was used in the selection of the respondents. The subjects of the study were the 426 students from Grade 12 senior high school, male or female, enrolled in the first semester of the school year 2024-2025 at Lorenzo S. Sarmiento Sr. National High School. They were ideal respondents for this study because they were directly involved with health-related behaviors, which were central to the focus of this research. Moreover, all junior high school and Grade 11 senior high school students were excluded. The respondents were chosen based on their direct experience with lifestyle choices, eating habits, and sleep quality, providing valuable insights into how these factors were interconnected.

The study also employed stratified random sampling to ensure that each subgroup of interest was represented in the sample, allowing for a representative distribution of respondents across the different sections. According to Minsel (2024), sample sizes ranging from 200 to 300 respondents were adequate for ensuring reliability in research, as this range balanced the desired level of precision with considerations of feasibility, cost, and time investment. Given the total population of 426 individuals, a random sample of 203 respondents was selected. The sample size was computed using the Raosoft sample size calculator.

Table 1. Population and Sample size of Respondents

Section	Population	Respondents
A	48	23
B	57	27
C	55	26
D	46	22
E	45	21
F	46	22
G	45	21
H	46	22
I	38	19
Total	426	203

Statistical Tool

The following statistical tools were utilized for the data analysis and interpretation.

Mean. This statistical tool was used to determine the level of lifestyle, eating habits, and sleep quality among senior high school students.

Spearman's rho. This statistical tool was used to ascertain the significant relationship between lifestyle and eating habits and sleep quality among senior high school students.

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Multiple regression analysis. This statistical tool was used to determine the significant influence of lifestyle and eating habits on sleep quality among senior high school students.

RESULTS

Level of Lifestyle

Table 2 presents the level of students' lifestyle in terms of social concern, environmental concern, health and exercise, psychological health, and nutrition. The overall mean is 4.19, described as high, with a standard deviation of 1.01 The high level can be attributed to the positive ratings given by the respondents across all indicators. This suggests that students generally exhibit strong well-being in these areas, reflecting their awareness and engagement in maintaining a balanced and healthy lifestyle.

Table 2. Level of Lifestyle

Indicators	Mean	SD	Descriptive Equivalent
Health and Exercise	4.18	3.18	High
Psychological Health	4.09	0.69	High
Nutrition	3.95	0.72	High
Environmental Concern	4.23	0.57	Very High
Social Concern	4.51	2.88	Very High
Overall	4.19	1.01	High

The cited overall mean score was derived from the following computed mean scores, listed from highest to lowest: 4.51 or very high for social concern, with a standard deviation of 2.88; 4.23 or very high for environmental concern, with a standard deviation of 0.57; 4.18 or high for health and exercise, with a standard deviation of 3.18; 4.09 or high for psychological health, with a standard deviation of 0.69; and 3.95 or high for nutrition, with a standard deviation of 0.72.

Level of Eating Habits

Shown in Table 3 is the level of eating habits among senior high school students, assessed through three key indicators: healthy eating cognition, dietary restrictions, and diet superiority. The overall mean score is 4.17, described as high, with a standard deviation of 0.56. This elevated level suggests that students generally maintain favorable eating habits, which is encouraging given the critical role nutrition plays during adolescence.

Table 3. Level of Eating Habits

Indicators	Mean	SD	Descriptive Equivalent
Healthy Eating Cognition	4.26	0.59	Very High
Dietary Restrictions	4.1	0.65	Very High
Diet Superiority	4.16	0.68	High
Overall	4.17	0.56	High

The cited overall mean score was the result obtained from the following computed mean scores from highest to lowest: 4.26 or very high for healthy eating cognition with a standard deviation of 0.59; 4.16 or high for diet superiority with a standard deviation of 0.68; and 4.10 or high for dietary restrictions with a standard deviation of 0.65.

Level of Sleep Quality

Table 4 presents the mean scores of senior high school students' sleep quality in terms of sleep latency, sleep duration, and sleep efficiency. The overall mean is 4.24, with a standard deviation of 0.62. This implies that the respondents generally experience a moderate level of sleep quality in these aspects.

Table 4. Level of Sleep Quality

Indicators	Mean	SD	Descriptive Equivalent
Sleep Latency	4.24	0.6	Very High
Sleep Duration	4.24	0.57	Very High
Sleep Efficiency	4.15	0.69	High
Overall	4.21	0.59	Very High

The cited overall mean score was derived from the following computed mean scores from highest to lowest: 4.24 for sleep duration with a standard deviation of 0.57; 4.24 for sleep latency with a standard deviation of 0.60; and 4.15 for sleep efficiency with a standard deviation of 0.69.

Significance on the Relationship Between Lifestyle and Sleep Quality Among Senior High School

The Spearman's rho value between lifestyle and sleep quality is 0.561* with a p-value of <.001. In this analysis, lifestyle is the independent variable and sleep quality is the dependent variable. This suggests a moderate correlation between lifestyle and sleep quality. As lifestyle habits improve, sleep quality tends to improve as well.

The results indicate that the p-value is significantly lower than the 0.05 significance level (<.001), leading to the rejection of the null hypothesis, which stated that there is no significant relationship between lifestyle and sleep quality among senior high school students.

Table 5. Significance on the Relationships Lifestyle and Sleep Quality

		Sleep Quality
Lifestyle	Spearman's rho	0.561*
	p-value	< .001

Significance Relationship Between Eating Habits and Sleep QualityAmong Senior High School

The Spearman's rho value between eating habits and sleep quality is 0.658* with a p-value of <.001. The dependent variable is sleep quality, and the independent variable is eating habits. It suggests a moderate correlation between eating habits and sleep quality. This means that as eating habits improve, sleep quality tends to improve as well, to a moderate extent.

The overall result reveals a p-value of <.001, which is significantly lower than the significance level of 0.05. Therefore, the null hypothesis stating that there is no significant relationship between eating habits and sleep quality among senior high school students is rejected.

Table 6. Significance on the Relationships Eating Habits and Sleep Quality

		Eating Habits
Sleep Quality	Spearman's rho	0.658*
	p-value	< .001

Multiple Regression Analysis on the Influence of the Domain of Lifestyle and Sleep Quality Among Senior High School

Using Multiple Regression Analysis, the data revealed that the influence of lifestyle on sleep quality among senior high school students has an F-value of 24.162 and a corresponding significance p-value of <.001, which is significant.

This means that lifestyle has a significant influence on sleep quality among senior high school students since the probability is less than 0.05. The R^2 value of 0.380 indicates that 38.0% of the variation in sleep quality is explained by lifestyle, while the remaining 62.0% is due to other factors not covered by the study.

Therefore, as presented in the table, the hypothesis that there is no domain in the lifestyle that significantly influences the sleep quality is rejected on psychological health and environmental concern.

Table 7. Multiple Regression Analysis of the influence of the Domain of Lifestyle and Sleep Quality Among Senior High School

Lifestyle	Coefficients	t-value	p-value	Decision a=0.05
Health and Exercise	0.030*	0.523	0.602	H*o* is not Rejected
Psychological Health	0.358*	5.009	<.001	H*o* is Rejected
Nutrition	0.099*	1.335	0.183	H*o* is not Rejected
Environmental Concern	0.273*	4.102	<.001	H*o* is Rejected
Social Concern	0.016*	0.281	0.779	H*o* is not Rejected
Dependent Variable: Sleep Quality				

p<0.05 R=0.617 R^2=0.38 F-value=24.162 p-value< .001

Multiple Regression Analysis on the Influence of the Domain of Eating Habits and Sleep Quality Among Senior High School

Using Multiple Regression Analysis, the data revealed that the influence of eating habits on sleep quality among senior high school students has an F-value of 55.015 and a corresponding significance p-value of <0.001, which is significant.

This means that eating habits have a significant influence on sleep quality among senior high school students since the probability is less than 0.05. The R^2 value of 0.453 indicates that 45.3% of the variation in sleep quality is explained by eating habits, while the remaining 54.7% is likely influenced by other factors not covered by the study.

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Table 7. Multiple Regression Analysis of the influence of the Domain of Eating Habits and Sleep Quality Among Senior High School

Eating Habits	Coefficients	t-value	p-value	Decision a=0.05
Healthy Eating Cognition	0.274*	3.628	<.001	H*o* is Rejected
Dietary Restrictions	0.188*	2.656	0.009	H*o* is Rejected
Diet Superiority	0.305*	3.571	<.001	H*o* is Rejected
Dependent Variable: Sleep Quality				

p < 0.05 R= 0.673 $R^{2=}$0.453 F= 55.015 p-value < 0.001

Therefore, as presented in the table, the hypothesis that there is no domain in the eating habits that significantly influences sleep quality is rejected on healthy eating cognition, dietary restrictions, and diet superiority.

DISCUSSIONS

Level of Senior High School Students' Lifestyle

The respondents' level of lifestyle was high. This means that various lifestyle habits among students were very evident. While students' overall well-being, influenced by their daily habits, is considered high, it significantly affects their sleep quality. The engagement of students in different lifestyle activities, including social involvement, environmental awareness, health practices, and psychological well-being, plays a crucial role in shaping their sleep patterns. Positive lifestyle choices are associated with better sleep quality, as these habits help regulate their physical and mental state (Wu et al., 2020). It is encouraging to see that senior high school students prioritize a well-balanced lifestyle that supports their sleep and overall well-being.

The findings affirm that social engagement fosters emotional health, reduces stress and anxiety, and improves sleep quality (Acoba, 2024). Additionally, the results confirm that environmental concern and eco-friendly habits contribute to a relaxed mental state and better sleep hygiene (Alnawwar et al., 2023). The research also affirms that physical activity plays a vital role in regulating the body's internal clock, promoting deeper sleep, and that psychological well-being and effective stress management lead to better sleep outcomes (Kassymova et al., 2023). Lastly, the findings affirm that a balanced diet supports both physical and mental health, ultimately contributing to improved sleep quality (Yadav et al., 2022). Understanding and promoting these lifestyle habits among students can further enhance their overall well-being and sleep patterns.

Level of Senior High School Students' Eating Habits

The respondents' level of eating habits among senior high school students was high. This indicates that students have strong awareness and control over their dietary behaviors, which is essential for promoting overall health and well-being. The study's findings showed that all three key indicators, healthy eating cognition, diet superiority, and dietary restrictions, were rated as high, with healthy eating cognition receiving the highest rating. This suggests that students are well-informed about nutrition and make intentional choices regarding their diet. The high level of diet superiority further reflects students' confidence in their eating habits compared to their peers, reinforcing the idea that self-efficacy plays a crucial role in maintaining healthy behaviors. However, while dietary restrictions were rated the lowest among the three, they still indicated a

significant level of adherence, showing that students recognize the benefits of limiting unhealthy food consumption despite perceived barriers such as convenience and social influences.

These findings affirm the importance of awareness and knowledge in shaping behaviors, as emphasized in Bandura's Social Cognitive Theory (1986). The results also confirm that positive attitudes toward nutrition lead to healthier food choices, aligning with the Theory of Reasoned Action (Fishbein & Ajzen, 1975). Additionally, the findings support Ajzen's Theory of Planned Behavior (1991), which highlights the influence of perceived control over eating habits on dietary decisions. The study further affirms that while individuals acknowledge the benefits of dietary restrictions, adherence may still be affected by external factors, as explained by Rosenstock's Health Belief Model (1974). The results also confirm that students may be at different stages of change in their eating habits, as suggested by the Transtheoretical Model (Prochaska & DiClemente, 1983), with some still working toward consistent adherence. Despite dietary restrictions receiving the lowest rating, the overall high level of eating habits suggests that students' nutrition positively influences their overall well-being, including sleep quality, as supported by Ramón-Arbués et al. (2022).

Level of Senior High School Students' Sleep Quality

The respondents' level of sleep quality among senior high school students was very high. This indicates that students generally experience favorable sleep patterns, which are essential for their overall health, academic performance, and emotional well-being. The study assessed three key indicators, sleep duration, sleep latency, and sleep efficiency, all of which were rated as high. Among these, sleep duration received the highest score, suggesting that students are getting an adequate amount of sleep on average. This aligns with research from the National Sleep Foundation (2015) and Walker (2017), which emphasize that sufficient sleep duration is crucial for cognitive function, emotional stability, and memory consolidation. Sleep latency also scored high, indicating that students fall asleep within a reasonable amount of time, which is beneficial for maintaining their circadian rhythm and overall sleep quality (Andalao et al., 2024). However, sleep efficiency, while still rated high, showed the most variability, suggesting that some students may experience occasional sleep disruptions or difficulty staying asleep throughout the night.

The findings affirm that adolescents with sufficient sleep experience better mental health, reduced stress levels, and improved concentration, all of which contribute to academic success (Hirshkowitz et al., 2015). The results also confirm the importance of sleep latency, as prolonged sleep onset can lead to sleep disturbances and cognitive difficulties (Pacheco, 2023). Additionally, the findings highlight the significance of sleep efficiency, as lower efficiency is associated with impaired cognitive function and emotional regulation (Suni & Vyas, 2023). While sleep efficiency showed the most variability in this study, the overall high sleep quality suggests that students prioritize sleep as a crucial factor for their well-being, reinforcing its role in their daily functioning and academic performance.

Significance on the Relationship Between Lifestyle and Sleep Quality Among Senior High School

The results of the study revealed a significant relationship between lifestyle and sleep quality among Senior High School students. The computed R-value indicated a moderate positive correlation between these two variables. This correlation suggests that as lifestyle factors, such as psychological health and environmental concern, improve, sleep quality among students also increases significantly.

The findings affirm that environmental stressors, such as noise and light exposure, can hinder sleep quality, while a supportive environment can significantly improve sleep outcomes (Johnson et al., 2018). The results also confirm the importance of psychological health and its direct impact on circadian rhythms, further supporting the study's conclusions (Walker et al., 2020).

These findings emphasize the importance of incorporating healthier lifestyle choices to improve sleep quality among adolescents. By fostering positive psychological health and creating conducive environments, students

may experience better sleep outcomes, which can contribute to enhanced academic performance and overall well-being.

Significance on the Relationship Between Eating Habits and Sleep Quality Among Senior High School

The results of the study revealed a significant relationship between eating habits and sleep quality among senior high school students. The computed R-value indicated a moderate positive correlation between these two variables. This correlation suggests that as students' eating habits improve, their sleep quality also increases at a higher rate.

The findings affirm that eating habits significantly influence sleep quality, with healthier eating behaviors contributing to better sleep patterns (Summer & Guo, 2024). Their research highlights the positive effects of balanced diets, particularly those rich in nutrients, on overall well-being, including sleep quality. The study also confirms that individuals are more likely to adopt health-promoting behaviors, such as improved eating habits, if they believe it will lead to positive outcomes like better sleep, as emphasized by the Health Belief Model of Behavior Change (Alyafei & Easton-Carr, 2024).

Additionally, the results support the strong relationship between diet and sleep quality, as found by Farris et al. (2022), who showed that students who adhered to healthier dietary practices reported better sleep outcomes. This suggests that promoting healthy eating habits among students could be an effective strategy for improving sleep quality and academic performance.

Multiple Regression Analysis on the Influence of the Domain of Lifestyle and Sleep Quality Among Senior High School

The regression coefficient was used to test the significant influence of lifestyle domains on sleep quality among Senior High School students. Using Multiple Regression analysis in JASP Software, the data revealed that environmental concern significantly influences sleep quality among Senior High School students. Only 38% of the students' sleep quality is influenced by environmental factors. The overall results of environmental concern predict sleep quality among Senior High School students. Therefore, the significance level of the hypothesis of lifestyle domains and sleep quality is rejected.

The findings affirm that environmental concern, particularly factors like noise levels, light exposure, and room temperature, plays a vital role in improving sleep quality. Research emphasizes the importance of a conducive physical environment in supporting better sleep (Xie et al., 2021). When students have a positive and supportive environment, they are more likely to experience improved sleep quality. This confirms that environmental factors are key determinants in students' overall sleep hygiene and well-being.

Multiple Regression Analysis on the Influence of the Domain of Eating Habits and Sleep Quality Among Senior High School

The regression coefficient was used to test the significant influence of eating habits on sleep quality among Senior High School students. Using Multiple Regression analysis in JASP Software, the data revealed that eating habits significantly influence sleep quality among Senior High School students. Specifically, 45.3% of the variance in sleep quality is explained by students' eating habits. The overall results suggest that healthy eating cognition, dietary restrictions, and diet superiority are key factors in predicting students' sleep quality.

The findings affirm that healthier eating habits lead to improved sleep quality among Senior High School students. As students become more aware of the importance of nutrition (healthy eating cognition), limit the intake of substances like caffeine, alcohol, and sugar (dietary restrictions), and maintain a balanced, nutrient-rich diet (diet superiority), their sleep quality improves. This aligns with findings from Walker (2017), who suggests that proper nutrition plays a significant role in regulating sleep patterns and supporting circadian rhythms.

Therefore, the hypothesis that eating habits positively impact sleep quality is confirmed. A healthy diet can lead to better sleep duration, reduced sleep latency, and improved sleep efficiency. This is supported by theories such as the Theory of Planned Behavior (Ajzen, 1991) and the Homeostasis Theory (Borbely, 1982), which highlight the relationship between diet and sleep regulation. Hence, promoting better eating habits among students is essential for improving their overall sleep quality and well-being.

CONCLUSION

Conclusions are drawn based on the results of the study. The study concludes that the level of influence of senior high school students' lifestyle on their sleep quality was high, with key indicators, including social concern, environmental concern, health and exercise, psychological health, and nutrition, all significantly contributing to improved sleep quality. Furthermore, the study concludes that the level of students' eating habits on their sleep quality was also high, particularly through healthy eating cognition and diet superiority. Additionally, the overall level of sleep quality among students was found to be very high, with sleep duration, sleep latency, and sleep efficiency playing crucial roles. The findings support the theoretical assumption that healthier lifestyle choices and better eating habits positively impact sleep quality. It is evident that promoting these habits is essential for enhancing students' well-being. The study emphasizes the positive relationship between lifestyle choices, eating habits, and improved sleep quality, suggesting that encouraging healthier lifestyle practices can have a significant positive impact on students' overall health and academic performance.

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