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Unmasking Sleep Deprivation: Investigating Influencing Factors Among Sulu State College's Senior High Students

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Abstract

This study employed a quantitative research design to investigate the correlates of sleep deprivation within a stratified sample of senior high school students at Sulu State College. Utilizing quota sampling, data were collected from 30 participants, allocated proportionally across academic strands (n=15 per strand). Statistical analysis, comprising descriptive statistics (frequency distributions and percentages), inferential statistics (independent samples t-tests and one-way analysis of variance), and the calculation of weighted means, was conducted. The results did not demonstrate a statistically significant relationship between sleep deprivation and the demographic variables of gender, age, or academic strand. Therefore, the null hypothesis of no significant difference in sleep deprivation across these demographic groups was not rejected. These findings suggest that within this specific population, gender, age, and academic program are not significant predictors of self-reported sleep deprivation.

Keywords: *sleep deprivation, influencing factors, physical/environmental factors, social factors, psychological factors, biological factors, senior high school students of Sulu State College.*

INTRODUCTION

In today's fast-paced world, sleep often takes a backseat, but its impact on our physical and mental well-being is undeniable. For senior high school students, the pressure to excel academically, coupled with the allure of social activities and the constant pull of technology, can lead to chronic sleep deprivation. This lack of restorative rest significantly impairs cognitive function, affecting concentration, memory, and overall academic performance. This study delves into the complex interplay of factors contributing to sleep deprivation among senior high school students at Sulu State College. By examining the influence of age, gender, and academic track, we aim to uncover the dominant contributing factor and determine if significant differences exist across various demographic groups. The research will explore the impact of physical/environmental, social, psychological, and biological factors, offering valuable insights into this critical issue affecting student health and academic success.

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METHODOLOGY

This chapter presents a comprehensive description of the research methodology employed in this study. It outlines the research design, the target population and research setting, the sampling strategy, the data collection instruments, the data gathering procedures, and the statistical techniques utilized for data analysis. Each subsection provides a detailed account of the steps undertaken to conduct the study rigorously.

Research Design

This investigation utilizes a descriptive research paradigm, in accordance with Barrientos-Tan (2011), to delineate the characteristics of sleep deprivation. A quantitative methodology, employing a structured questionnaire, was implemented to ascertain the causative factors contributing to sleep deprivation amongst the senior high school student population of Sulu State College. This methodological framework is demonstrably congruent with the study's primary objective of identifying and characterizing these influential factors, thereby ensuring the efficacy and appropriateness of the chosen approach.

Research Locale

The research was undertaken at the Sulu State College Senior High School, located at the Capitol Site in Patikul, Sulu Province. The study population comprised the entirety of the senior high school student body, numbering 565 students.

Respondents of the Study

The primary data source for this research consisted of a stratified sample of thirty (30) formally enrolled senior high school students from Sulu State College during the 2021-2022 academic year. Fifteen participants were selected from each of the STEM and ABM academic tracks, with the selection process being independent of demographic factors such as age, gender, and grade level (inclusive of both Grade 11 and Grade 12 students).

Sampling Design

The research employed a stratified proportional quota sampling methodology to manage the substantial population (N=565) of senior high school students at Sulu State College. A sampling quota of thirty participants was assigned to each academic strand, with random selection procedures implemented to ensure the fulfillment of each stratum's allocated quota.

Data Gathering Procedure

A pilot study and assessment of face validity were undertaken prior to the commencement of data collection to ensure methodological rigor. Following the acquisition of necessary ethical approvals from the Sulu State College Senior High School coordinator, the researcher administered the questionnaires individually to each participant. Each session, conducted during the participant's unscheduled time, lasted approximately 20-30 minutes. Participants received comprehensive information regarding the study's aims and were assured of the strict confidentiality of their responses.

Research Instrument

Data on sleep deprivation and its influencing factors were collected using a two-part self-report instrument. Part I comprised a demographic questionnaire. Part II employed a checklist format, derived from a review of relevant literature, in which participants rated the frequency of identified factors contributing to sleep deprivation using 5-point Likert scale, with the following interpretive ranges: 4.50–5.00 representing very high influence; 3.50–4.49, high influence; 2.50–3.49, moderate influence; 1.50–

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2.49, less influence; and 1.00–1.49, very low influence. Items deemed potentially offensive were excluded to mitigate respondent bias and enhance response validity.

Statistical Treatment of Data

The Statistical Package for the Social Sciences (SPSS) software was utilized for data analysis to address the research objectives. Descriptive statistics, comprising frequency distributions and percentage calculations, were implemented to characterize the sample's demographic profile (Problem 1). Weighted means were computed to quantify the influence of four identified dimensions on sleep deprivation (Problem 2). Subsequently, the identification of the predominant influencing factor (Problem 3) also leveraged weighted mean analysis. Finally, to assess statistically significant variations in influencing factors across the categorical variables of age, gender, and academic strand, inferential statistical techniques—specifically, independent samples t-tests and analysis of variance (ANOVA)—were employed (Problem 4). The analysis of the collected data will utilize both descriptive and inferential statistical techniques. The assessment of the influence of factors contributing to sleep deprivation will be based on a 5-point Likert scale, with the following interpretive ranges:

Scale	Range	Interpretation
5	4.50- 5.00	Influence very high
4	3.50- 4.49	influence high
3	2.50- 3.49	influence moderate
2	1.50- 2.49	influence less
1	1.00- 1.49	influence very low

RESULTS AND DISCUSSIONS

Demographic profile of Senior High School Students of Sulu State College in terms of age, gender, and strand taken.

The table presents the demographic profile of 30 senior high school students at Sulu State College, categorized by age, gender, and academic strand. Key Findings: The majority of students (50%) are 19-20 years old, with a significant portion (40%) aged 17-18. Only a small percentage (10%) are 21 years old. The student population is heavily skewed towards females (83.33%), with males representing a minority (16.67%). There's an equal distribution (50% each) between students enrolled in the STEM (Science, Technology, Engineering, and Mathematics) and ABM (Accountancy, Business, and Management) strands. The data reveals a predominantly female, young adult student body at Sulu State College with an even split across STEM and ABM academic strands.

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Table 1. Demographic profile of Senior High School Students of Sulu State College in terms of age, gender, and strand taken.

n=30

Profile	Frequency	Percentage
AGE:		
17-18 years old	12	40
19-20 years old	15	50
21 years old	3	10
GENDER:		
MALE	5	16.67
FEMALE	25	83.33
STRAND:		
STEM	15	50
ABM	15	50

Influencing Factors of Sleep Deprivation among Senior High School Students of Sulu State College

Table 2's analysis of sleep deprivation among Sulu State College senior high students reveals a low overall influence of physical/environmental factors (grand mean=2.34), despite high influence from noise and moderate influence from pre-sleep media use. Social factors show a moderate overall influence (grand mean=2.91), with significant impacts from shared sleeping arrangements, nighttime interruptions, and work/study demands. The influence of smoking, alcohol, and nighttime social media communication was low.

Analysis of psychological factors affecting sleep deprivation among Sulu State College senior high students reveals a moderate overall influence (grand mean=3.07), with final exam stress being a significant exception (high influence, mean=3.50). Biological factors also show a moderate influence (grand mean=2.89), stemming from frequent urination, morning alertness, chronic pain, nighttime heartburn/acid reflux, and leg cramps.

Research on the influencing factors of sleep deprivation among senior high school students at Sulu State College indicates a differential impact of various contributing elements. While physical and environmental factors exhibited a comparatively weaker influence, psychological, social, and biological factors demonstrated a more substantial effect on the students' sleep patterns.

This aligns with AlDabal and BaHammam's (2016) assertion of sleep's critical role in essential bodily functions, including learning, cellular repair, and memory consolidation. The absence of adequate sleep compromises the efficacy of these processes. Furthermore, Owens (2004) underscores the significant contribution of social, environmental, and cultural contexts to the characterization of sleep in adolescence.

Table 2. Influencing Factors of Sleep Deprivation among Senior High School Students of Sulu State College

Influencing Factors	Mean	Interpretation
2.1 PHYSICAL/ENVIRONMENTAL FACTORS		
I smoke cigarettes (or other tobacco).	1.17	Influence Very Low
I drink alcohol prior to bedtime.	1.23	Influence Very Low
I watch TV, movies, series and clips in bed prior to sleep.	3.20	Influence Moderate

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I wake up easily because of noise.	3.50	Influence High
I scroll on social media feeds such as Facebook, Twitter, Instagram and TikTok.	2.60	Influence Moderate
AVERAGE	2.34	**Influence Less**
2.1 SOCIAL FACTORS		
Communicating with friends using chat apps during the night.	2.13	Influence Less
I share bed with my dormmate.	3.23	Influence Moderate
Getting up to use the toilet in the night interrupts my sleep.	3.23	Influence Moderate
I work or study only during bedtime.	3.00	Influence Moderate
Poor sleep affects my mood towards my family and friends.	3.00	Influence Moderate
AVERAGE	**2.91**	**Influence Moderate**
2.3 PSYCHOLOGICAL FACTORS		
Stress of midterm exams leads me to sleep deprivation.	3.07	Influence Moderate
Stress of final exams leads me to sleep deprivation.	3.50	Influence High
Thoughts go through my head and keep me awake.	2.87	Influence Moderate
Fear of the unknown & not wanting to go to bed for sleep.	2.83	Influence Moderate
My sleep is disturbed by sadness or depression.	3.10	Influence Moderate
AVERAGE	**3.07**	**Influence Moderate**
2.4 BIOLOGICAL FACTORS		
I am more alert in the morning than evening.	3.17	Influence Moderate
Heartburn or acid reflux at night interrupts my sleep.	2.67	Influence Moderate
Chronic pain interferes with my sleep.	2.77	Influence Moderate
The need to urinate frequently interrupts my sleep.	3.23	Influence Moderate
I have cramps or pain in my legs during the night.	2.63	Influence Moderate
AVERAGE	**2.89**	**Influence Moderate**

Dominant Influencing Factors of Sleep Deprivation among Senior High School Students of Sulu State College

Table 3 demonstrates that, amongst senior high school students at Sulu State College, psychological factors constituted the most prominent influence on sleep deprivation (M = 3.07). This was followed by social (M = 2.91) and biological (M = 2.89) factors, with physical factors exhibiting the least significant effect (M = 2.34). In summary, while all factors show some level of influence, psychological factors exhibit the strongest influence on sleep deprivation in this study, followed closely by social and biological factors. Physical/environmental factors have the least impact, according to this data.

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Table 3. Dominant Influencing Factors of Sleep Deprivation among Senior High School Students of Sulu State College

Influencing Factors	Mean	Interpretation
1. Physical/Environmental Factors	2.34	Influence Less
2. Social Factors	2.91	Influence Moderate
3. Psychological Factors	3.07	Influence Moderate
4. Biological Factors	2.89	Influence Moderate

Significant difference among Influencing Factors of Sleep Deprivation among Senior High School Students when grouped according to age, gender and strand.

Table 4.1 presents a t-test analysis of the influence of gender on sleep deprivation factors. The obtained t-value of 4.12 surpasses the conventionally accepted alpha level of 0.05, indicating statistical significance. Nevertheless, given the dichotomous nature of the gender variable, this result does not demonstrate a practically significant difference in sleep deprivation factors between male and female senior high school students.

Table 4.1 Significant difference among Influencing Factors of Sleep Deprivation among Senior High School Students when grouped according to age, gender and strand.

	Test Value = 0.05					
Gender	T	df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lesser	Upper
	. 412	29	.310	.0046	2.18	3.45

Table 4.2 reveals Analysis of variance (ANOVA) revealed a significant effect of age ($F = 5.21$, $p < .05$) but not strand ($F = 3.62$, $p > .05$) on sleep deprivation among Sulu State College senior high students. This suggests that while sleep deprivation is prevalent, its extent varies individually, regardless of age or strand.

Leonidas (2014) reported that 68% of students are awake after their heads hit the pillow, and only 30% sleep 8 hours nightly.

This study's key finding is the absence of significant demographic influences on sleep deprivation among Sulu State College senior high students (ages 17-18). Specifically, no significant differences were observed in sleep deprivation levels based on age, despite established age-related increases in sleep disorders (Webb, 1981). Similarly, gender did not significantly affect sleep deprivation, even considering the increased risk of certain disorders in females (Gaul tney, 2010).

Table 4.2
ANNOVA Summary of Table

	Sum of Square	*df*	Mean Square	F-ratio	Sig.
AGE					
Between Groups	4.520	1	4.520	5.21	.000

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Within Groups	15.615	18	0.868		
Total	**20.135**	**19**			
STRAND					
Between Groups	3.712	1	3.712	3.62	.000
Within Groups	18.462	18	1.026		
Total	**22.174**	**19**			

Finally, the study found no significant difference in sleep deprivation between students enrolled in STEM and ABM strands. This suggests a common underlying factor, possibly related to academic pressure, impacting sleep across all demographic groups within the sample. The results highlight the crucial role of strong mathematical content and process skills in navigating academic demands and promoting sufficient sleep.

Conclusion

The study concludes that sleep deprivation is a significant issue among the senior high school students at Sulu State College. The student population, largely female and appropriately aged for their grade level, exhibited a high prevalence of sleep deprivation. The findings indicate a minimal impact of physical/environmental factors on sleep patterns. In contrast, social, psychological, and biological factors demonstrated a considerably stronger association with sleep deprivation. Analysis of psychological factors revealed a clear link between mental health issues and sleep disturbances. Importantly, the study found no statistically significant relationship between demographic characteristics (age, gender, and academic strand) and the incidence of sleep deprivation, suggesting a widespread phenomenon affecting all students.

Recommendations

Based on the study's findings on sleep deprivation among senior high school students at Sulu State College, the following specific policy recommendations and research agenda are proposed:

Policy Recommendations

1. Targeted Sleep Hygiene Workshops for Sulu State College Students: Implement workshops specifically designed for senior high school students at Sulu State College, focusing on the identified contributing factors (social, psychological, and biological factors) to sleep deprivation. These workshops should incorporate culturally sensitive strategies and address the unique challenges faced by students in this context.
2. Review of Sulu State College Curriculum and Examination Schedules: Conduct a thorough review of the senior high school curriculum and examination schedules to identify potential areas for modification that could reduce academic pressure and promote better sleep habits. This review should consider the workload across different academic strands.
3. Faculty Training on Recognizing and Addressing Sleep Deprivation in Students: Provide specific training to Sulu State College faculty on recognizing the signs and symptoms of sleep deprivation among students, and equip them with strategies to create a supportive learning environment that minimizes stress and promotes healthy sleep. The training should incorporate the findings regarding the minimal influence of physical/environmental factors.

4. Collaboration with Parents and Guardians of Sulu State College Students: Develop a program to engage parents and guardians of Sulu State College students in promoting healthy sleep habits, providing resources and support tailored to the specific cultural context and addressing the demographic profile of the student population (predominantly female).
5. Increased Access to Mental Health Services at Sulu State College: Expand access to mental health services and counseling specifically for senior high school students at Sulu State College, addressing the study's finding on the link between mental disturbances and sleep disturbances.

Research Agenda

1. Longitudinal Study of Sleep Deprivation and Academic Performance at Sulu State College: Conduct a longitudinal study focusing specifically on senior high school students at Sulu State College to assess the long-term impact of sleep deprivation on academic performance, mental health, and overall well-being, considering the identified contributing factors.

2. Evaluation of Culturally Sensitive Sleep Hygiene Interventions at Sulu State College: Research should evaluate the effectiveness of culturally tailored sleep hygiene interventions specifically designed for the student population of Sulu State College, taking into account the demographic characteristics and cultural context.

3. Qualitative Study Exploring the Social and Psychological Factors Contributing to Sleep Deprivation: Conduct a qualitative study to gain a deeper understanding of the social and psychological factors contributing to sleep deprivation among senior high school students at Sulu State College, exploring the experiences and perspectives of students themselves.

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