



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

The Impact of Sleep Deprivation on Cognitive Function in Senior High School Student.

Submitted in Partial Fulfillment in the Requirements of
The Practical Research 2

Submitted by:

Gulada, Necasio
Munda, Marky Ian
Mollasgo, Frances Ann
Padriquez, Yzhabella
Par, Gabrielle Chelsea

Group 5 GAS- LUNA

Submitted to:

Rodel Victor D. Dimasin
Special Science Teacher I
Practical Research 2 Teacher

November



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

TABLE OF CONTENTS

Title Page	i
Acknowledgements	ii
Abstract	iii
 Introduction	
Rationale	
Statement of the Problem	
Research Hypothesis (if needed)	
Significance of the Study	
Scope and Delimitation	
Definition of Terms	
 Methodology	
Research Design	
Population and Sample	
Data Collection	
Data Analysis	
 Results (Place results as per arrangement of research questions)	
 Discussion	
Conclusion	
Recommendations	
 References	
Appendices	
Curriculum Vitae	



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

ACKNOWLEDGEMENTS

The researchers would like to thank those who contributed for the completion of this research.

First and foremost, the researcher would like to praise and thank our God, the almighty, for giving them a strength, knowledge, ability, and for the showers of blessing he gave to the researcher to undertake this research study.

The researchers would also like to express their deep and sincere gratitude to Meycauayan National High School for giving the learning opportunity that helped them to develop a valuable lesson of teamwork, patience, cooperation, and the endless pursuit of knowledge.

The researchers' gratitude also extended to the following person who have supported them to complete this research;

To all Grade-12 students respondents who have been part of this study. The researcher would like to give appreciation to them for giving their time and cooperation to make this study. Without their help the researcher's study would not be possible.

To all the parents, guardian, and friends of the researcher for giving them an emotional and financial support. Also for giving them the unselfish love at all times.

Last but not the least, to Mr. Rodel Victor D. Dimasin their subject teacher in Practical Research 2. The researchers would like to thank this person for sharing his knowledge to the researcher. Also for giving them the idea that will help the researcher to complete this study and for his endless patience. It was a great opportunity and honor to work, study, and learn under his guidance.

This research study would not have been run smoothly without their help and support.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

ABSTRACT

The aim of this study is to know and understand the effect of sleep deprivation to cognitive function of senior high school student. This also use the descriptive research design just to know and to describe the impact of this variable. The researcher used the convenience sampling to collect the data, this method helped the researcher to easily gather data from respondent. The result of this study showed that having a sleep deprivation have a negative impact to Senior High School Students of Meycauayan National High School. The student can't concentrate and think properly or do a creative thing when they don't have a enough sleep.

Introduction

Rationale

These studies highlight how sleep impacts cognitive performance and overall wellness of senior high school student in Meycauayan National High School. This study describe the effects of sleep deprivation. This also aim to understand the effect of sleep deprivation to creatively performance of the study.

Sleep is the natural state that every person takes in order to rest and replenish their body for a healthy functioning of mental capabilities. Therefore, it is responsible for the support of cognitive functions including memory, attention, and decision-making as well as physical health. While at



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

night our brain processes new information and links it to what we already know, helping us learn better sleeping while also keeping us alert in the activities of daily living with adequate time responses. It all gets hit when the sleep is bad, and eventually disrupts normal functioning leading to a lower efficiency and reduction in the quality of life.

Sleep deprivation occurs when does not get proper amount of sleep. Whether don't get enough sleep, poor quality sleep, or interruptions during sleep. It may be the result of many factors, including stress Choosing a way of life. Medical conditions or sleep disorders It has a significant impact on cognitive function. This includes mental processes such as attention, memory, and decision-making. Lack of sleep makes it harder to concentrate. Reduce response time and increase the chance of making mistakes It also impairs memory consolidation. It makes it harder to remember things and impairs decision-making. Leads to bad decisions.

Sleep is one of the most important and need of the people, because having enough sleep the person can function their mind in a proper way. This also help a someone to be alertness and being emotionally stable. According to Shelley Hershner (2020) sleep deprivation has a big impact on student cognitive function. Having not enough amount of sleep lead their mind to be not productive, this also affect their ability to concentrate properly. In short sleep deprivation inflicts a heavy blow on cognitive functioning. As Christopher (2015) sleep deprivation does increase the possibility of the occurrence of errors along with an increase in delay in more simple tasks, though there is no definite effect on more complex tasks.

Cognitive functioning involves the ability to perceive and react, process and understand, make decisions and produce appropriate responses to the environment (Morley et al., 2015).

Both study of Xiaoyang Ren (2024) and D Wickens (2015) said that when people don't get enough sleep, they are more likely to hallucinate and make mistakes or take longer to finish tasks like the Psychomotor Vigilance Task. Taking a nap or having a small amount of sleep can't help you to concentrate or focus on something.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

Statement of the problem

This study aims to explore the impact of sleep deprivation on creative problem-solving in senior high school students in Meycauayan National High School

It seeks to answer the following questions:

- 1.) How does sleep deprivation impact the cognitive function of senior high school students?
- 2.) Are more complex creative tasks significantly more affected by sleep deprivation than simpler one?
- 3.) What role does adequate sleep play in enhancing students creativity and ability to solve problem effectively?



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

Significant of the Study

This research will be most beneficial to:

Students:

This study will provide the students information about the possible effect of this objective. The student can use this study as a guide to understand the disadvantage of the sleep deprivation. It also help them to find out how important of having a enough sleep.

Teachers:

This can be used as a guide to all the teacher to promote a better sleep habits, also to give less time consuming project and school works on students. In addition, this study can help the teacher to understand the student who's experiencing sleep deprivation.

Future Researcher:

This research study can help the future researcher to gain significant reference data in conducting a research or any related study. They can also use this research as a guide to create a new study. This study also served as a guidance to a background and an overview information related to this study.

SCOPE AND DELIMITAION

This study will cover the exploration of the impact of the sleep deprivation on creative thinking, critical thinking, or skills of the senior high school students in meycauayan national high school. The researcher will get a respondent from Grade 12 students enrolled in Academic year 2024-2025 in meycauayan national high school. The purpose of this study is to know the impact of sleep deprivation to critical thinking of grade 12 senior high school students in meycauayan national high school. Also this study will not cover the students who are in other schools, and the students who are not in level 12 of this academic year.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

DEFINATION OF TERMS

Sleep Deprivation: is a condition that results from not getting enough of sleep.

Creative Thinking: the ability to come up with a unique, original solution, makes you a better problem solver.

Sleep: a condition of body and mind that typically recures for several hours every night, in which the eyes are closed, the postural muscles relax, the activity of the brain altered, and consciousness of the surroundings practically suspended.

METHODOLOGY

RESEARCH DESIGN

In this research, the researcher used a descriptive research. According to Williams (2007), descriptive research is research design used to examine the situation involving identification of attributes of a particular pphenomeno based on an observational basis. So, this type of research is used to describe and interpret the data being studied based on fact that is supported by accurate theories. It means that descriptive research is related to the condition occurs at that time, uses one variable or more and then investigates in fact Therefore, this study analyzed the students' difficulties in reading report text and the factors that were caused in report text. The researcher used this method because it can help to speed up the gathering data and information from respondent. They also use stratified random sampling; Also the researcher decide to choose the all strand of grade 12 to be a respondent for this research.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

POPULATION AND SAMPLE

The researcher collected the number of whole population of grade 12 senior high school students in Meycauayan National High school, which is 670. After that the researcher do the

proportional allocation to find how many students they need to this research, also to know how many respondents they need to each strand. They found out that this study involves 250 respondentst from all strand of grade 12 level on Meycauayan National High school. The researcher get a 34 respondent from Grade 12 level General Academic Strand (GAS), 42

respondent from Humanities and Social Science (HUMSS), total respondent of 37 from Accountancy Business and Management. The researcher also get a 36 respondent from Home Economics (HE), 48 respondent from Science, Technology, Engineering, and Mathematics (STEM), lastly they get 53 respondent from Information and Communication Technology (ICT). This respondent selected by random sampling.

This research also involves a convenience sampling and the data will be collected by this method. This method choose by the researcher because this can easily gathered a respondent who are easiest to reach and to access. All the respondent choose based on their availability and willingness to participate this study.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

DATA COLLECTION

The researcher was used 2 method which is test questionnaire and google form to collect data. The questionnaire includes several questions that answer the major problem of the

study, which is the impact of sleep deprivation on cognitive function in senior high school students. First, the researchers asked permission from their research adviser to conduct and gather data. Second, the researchers asked for the respondents' permission before responding to the survey questionnaire. After that, it was distributed via Google Forms to 125 senior high school students in grades 12 at Meycauayan National High School, while the other 125 respondent received a test questionnaire. The respondent schedules were also requested by

the researchers to determine their availability. The Participants received the questions in advance so they can get ready to answer the questions. The data that have been gathered were interpreted and analyzed thoroughly to have reliable and valid results.

DATA ANALYSIS

In this research, the researchers used a type of hermeneutic phenomenology, which emphasizes the interpretation of meaning and understanding of experiences from the perspective of the participant. The researchers will be able to analyze each perspective shared by the respondents, gaining insights into the various effects of sleep deprivation on the cognitive abilities of senior high school students. This approach will help the researcher to understand those experiences and providing a clearer picture of how insufficient sleep influences aspects like memory, attention, and creative skills.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

ETHICAL CONSIDERATION

The researches will firstly ask for the consent of the participants before conducting the research. Titled “The impact of sleep deprivation on cognitive function in senior high school students.” The purpose of this study will contribute to a better understanding of the relationship between sleep deprivation on cognitive function among high school students by focusing on how sleep affects the creativity and innovation of a student. This study will provide valuable insight for students on how sleep impact the academic performance and cognitive development. The researcher will use the test questionnaire and google form as a procedures to conduct the research. Sleep is important in daily life insufficient sleep can

affect the cognitive functions memory, attention and creativity to think and also a decision-making.

In compliance with the Data Privacy Act of 2012, all information collected will be treated confidentially. The participants data will only be used for this research, anonymized, and stored securely.

Participants were explicitly informed that they had the right to withdraw from the study at any time, even after they had started the survey or provided their responses. If a participant



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

decided to withdraw, any data they had submitted would be excluded from the final analysis, should they request this. No questions would be asked, and no attempts would be made to persuade them to continue. This assurance was intended to empower participants to make

decisions without fear of any repercussions, promoting a sense of autonomy and respect throughout the research process.

RESULTS

Table 1. Impact of Sleep Deprivation

RQ1	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	MEAN	VERBAL INTERPRETATION
1.I find that sleep deprivation affects my creativity in one or more ways.	19	25	52	84	70	250	3.644	AGREE
2. Sleep deprivation has a strong impact on my academic performance.	20	16	48	74	92	250	3.808	AGREE



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

3. It is difficult to think properly without enough sleep.	18	12	49	83	88	250	3.844	AGREE

4. When i am sleep deprived, i find it's hard to stay motivated	11	16	83	68	72	250	3.696	AGREE
---	----	----	----	----	----	-----	-------	-------



Republic of the Philippines
Department of Education
 REGION III - CENTRAL LUZON
 SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
 MEYCAUAYAN NATIONAL HIGH SCHOOL

and think clearly.								
5. Getting enough sleep improves my brain function, focus, memory retention, and ability to solve problems creatively	25	13	36	95	81	250	3.776	AGREE
Weighted Mean							3.7536	AGREE

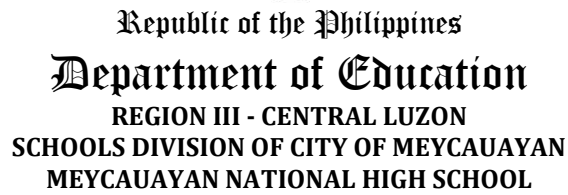
Table 2. Affected Complex by Sleep Deprivation

RQ1	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	MEAN	VERBAL INTERPRETATION
-----	----------------------	----------	---------	-------	-------------------	-------	------	--------------------------



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

1. When I get enough sleep, I'll be more productive and attentive to my class, and will perform better academically	6	22	134	52	36	250	3.36	NEUTRAL
2. I find that sleep can improve my mood, leading to be more positive and creative mindset.	23	10	62	81	74	250	3.78	AGREE
3. I find that getting enough of sleep my make my mind calm and less stressed. It is also making easier for me to solve the problem and come up with creative ideas.	5	24	46	94	91	250	3.888	AGREE



4. I feel my mood and mindset is much better if I get enough of sleep. It also leads my mind to think more creative activity.	12	21	40	60	117	250	3.996	AGREE
5. When I have enough rest, I find that I less likely to feel foggy and I actively engaging in my class and my classmate	17	12	76	89	81	250	4.12	AGREE
Weighted Mean							3.8280	AGREE



Republic of the Philippines
Department of Education
 REGION III - CENTRAL LUZON
 SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
 MEYCAUAYAN NATIONAL HIGH SCHOOL

Table 3. Enhancing Students Creativity and Ability.

RQ1	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	MEAN	VERVAL INTERPRETATION
1.I find that sleep deprivation has a worse impact on my complex tasks or the way that I'm thinking.	16	21	72	88	52	250	3.556	AGREE
2. Sleep deprivation makes my mind to think harder.	12	16	77	83	63	250	3.688	AGREE
3. Sleep deprivation affects all tasks that require deep thinking.	13	20	68	92	57	250	3.64	AGREE
4 I find that sleep deprivation affects all tasks equally, not just complex ones.	7	9	83	90	61	250	3.755	AGREE



Republic of the Philippines
Department of Education
 REGION III - CENTRAL LUZON
 SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
 MEYCAUAYAN NATIONAL HIGH SCHOOL

5. When I don't have enough sleep it affects my concentration and the way I'm thinking.	8	18	45	50	129	250	4.096	AGREE
Weighted Mean							3.747	AGREE

DISCUSSION

In table 1, the analysis present data on students who suffered from insufficient sleep, which has a significant impact on their academic performance. The responses were measured on a scale from Strongly Agree to Strongly Disagree. The majority of students indicated that they strongly agreed with the statement about the challenges they faced due to lack of sleep.

Table 2 provides an analysis of students who consistently got enough sleep. The findings indicate that these students experienced substantial benefits from adequate rest. With sufficient sleep, their minds were refreshed, reducing mental fog and enhancing their ability to energetically engage with others. This boost in cognitive function and social interaction underscores the positive effects of maintaining a healthy sleep schedule.

In table 3, the analysis highlights the severe impact of sleep deprivation on students, making it extraordinarily difficult for them to perform academically. Those who experienced extreme sleep deprivation have significant struggles with basic cognitive tasks. Such as evaluating information and making decisions.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

CONCLUSION

Based on the result of this study conducted, the researcher has gathered data from the students of Meycauayan National High School-Senior High School (SHS) about the impact of sleep deprivation on cognitive function. The data indicates that students who suffer from insufficient sleep encounter numerous challenges in their daily academic activities in concentrating, processing information, and retaining knowledge. After the researcher do the data collection, they find out that student say they experiencing the lost of their concentration when they don't have enough sleep. Most of the student agree that the sleep deprivation has a big impact on them This show that the findings of this research is having not enough amount of sleep can affect concentration of a student that leads them to a slow and not creative mind. They won't be able to think some creative activity.and they can't be productive to school because of that.

This study show the relationship of having a sleep deprivation to cognitive function and if it can affect the students ability to perform well in their studies. The researcher find that this matter only negative impact to the student and it had a bad impact on their academic performance. But this study also highlighted the positive impact of adequate sleep on students cognitive functions. Those who managed to get enough rest showed better focus, improved memory, a better overall academic performance. The students were more engaged in classroom activities and demonstrated a greater capacity for learning

RECOMENDATIONS

Set a Regular Sleep Routine:

Sticking to a fixed bedtime and wake-up time every day helps regulate the body clock and ensures better sleep quality, even on weekends.



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

Time Management and Prioritization:

Help students organize their schedules effectively, balancing schoolwork, extracurricular activities, and relaxation to avoid late-night cramming sessions.

Educate on the Importance of Sleep for Academic Performance:

Educate students and parents on how sufficient sleep improves memory, focus, and overall academic performance, stressing the importance of rest over last-minute studying

REFERENCES

“Effects of exercise on cognitive functioning in adults with serious mental illness: A meta analytic review”

<https://www.sciencedirect.com/science/article/abs/pii/S0165178123000343>

“Sleep and academic performance: measuring the impact of sleep”

<https://www.sciencedirect.com/science/article/abs/pii/S2352154619301275>

“Sleep Deprivation and Memory: Meta-Analytic Reviews of Studies on Sleep Deprivation Before and After Learning”

<https://psycnet.apa.org/fulltext/2022-40433-004.html>

“The Effect of Sleep Deprivation on Creative Cognition: A Systematic Review of Experiment-Based Research”

[Full article: The Effect of Sleep Deprivation on Creative Cognition: A Systematic Review of Experiment-Based Research](#)

“The Impact of Sleep Disruption on Complex Cognitive Tasks: A Meta-Analysis”



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

<https://journals.sagepub.com/doi/abs/10.1177/0018720815571935>

“Effects of exercise on cognitive functioning in adults with serious mental illness: A meta analytic review”

<https://www.sciencedirect.com/science/article/abs/pii/S0165178123000343>

PERSONAL INFORMATION

GULADA	NECASIO	
SURNAME	GIVEN NAME	MIDDLE NAME

BIRTHDAY	
AGE	
GENDER	
ADDRESS	
MOBILE NO.	



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

MUNDA	MARKY IAN	
SURNAME	GIVEN NAME	MIDDLE NAME

BIRTHDAY	
AGE	
GENDER	
ADDRESS	
MOBILE NO.	

MOLLASGO	FRANCES ANN	
SURNAME	GIVEN NAME	MIDDLE NAME

BIRTHDAY	
AGE	17
GENDER	FEMALE
ADDRESS	207 PILA ST. BRNGY CAMALIG
MOBILE NO.	09707696754



Republic of the Philippines
Department of Education
REGION III - CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MEYCAUAYAN
MEYCAUAYAN NATIONAL HIGH SCHOOL

PADRIQUEZ	YZHABELLA	TALENS
SURNAME	GIVEN NAME	MIDDLE NAME

BIRTHDAY	SEPTEMBER 29, 2006
AGE	18
GENDER	FEMALE
ADDRESS	BLK 27 LOT 4 GARRY'S VILLE BAGUMBONG
MOBILE NO.	09564979361



PAR	GABRIELLE CHELSEA	CASTILLO
SURNAME	GIVEN NAME	MIDDLE NAME

BIRTHDAY	JULY 18, 2007
AGE	17
GENDER	FEMALE
ADDRESS	BLK 29 LOT 4 GARRY'S VILLE BAGUMBONG
MOBILE NO.	09659743831

