

Effect of Sleep Deprivation on the Physical Health, Mental Health and Grades of the Students: A Descriptive Study

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Abstract

Sleep deprivation refers to a condition in which an individual does not get enough sleep, either in terms of duration or quality. It is a widespread issue affecting people of all ages and backgrounds. Sleep problems are frequent occurrence in sufferer with mental health disarray. The confederation of insomnia with insane experiences in the common population has been established. This study is design to investigate the effect of sleep deprivation on mental health and grades of students. Questionnaires survey quantitative research method was employed. In this research work we received 343 responses from different age group persons. Collected data consist of 76% males and 23% females in which 152 were from nuclear family and 177 were from joint family. Our study evaluate that the sleep deprivation is a significant cause to effect the mental health of the students which leaves a great impact on their studies specifically on grades. So, the Physical health, cognitive performances and grades of the students were alarmingly effected due to deprived sleep and they could do better if they were not going through this condition.

Keywords: Sleep deprivation, cognitive performances, deprived sleep, nuclear family, and questionnaire.

Introduction

Most of us will spend approximately one-third of our lives asleep. Despite the large proportion of our existence that it consumes, there remains little scientific consensus regarding the actual function that sleep provides. Scientific debate aside, even most non-experts would agree that without adequate sleep, nearly every aspect of waking life becomes more effortful, labored and emotionally less fulfilling. Nothing seems to bring as much clarity to the function of sleep as spending a night without it. (1,2) when college students find difficulty in maintaining alertness during learning activities, they may fall asleep; about half to three-quarters of college students report sleepiness during the day as a result of insufficient sleep. This problem can end in serious

outcomes, including poor academic performance, reduced coping mechanisms for college and life requirements, and increased risk for road traffic accidents. These problems can be solved by carefully searching for the prevalence of such problems and solving them. (3,4)

Sleep problems are frequent occurrence in sufferer with mental health disarray. Sleep deprivation affects academic performance of students as well. The purpose of the current study was to decide if sleep deprivation or poor sleep quality in a sample of university students was linked with lower academic performance. A significant negative link between Global Sleep Quality score (GSQ) on the Pittsburgh Sleep Quality Index and grade point average supports the hypothesis that poor sleep quality is associated with lower academic performance. (5,6). Sleep quality has significant effects on cognitive performance and is influenced by multiple factors such as stress. Contrary to the ideal, medical students and residents suffer from sleep deprivation and stress at times when they should achieve the greatest amount of learning. (7,8,9). This study investigates the effect of sleep deprivation on mental health, physical health and grades of students.

Materials and Methods

We conducted a survey based descriptive research and collected 343 responses from students. We read different research articles related to the effects of sleep deprivation and its effect on mental health and grades of students. So, after that we made a questionnaire of 20 questions regarding the effects of sleep deprivation on students and then we collected the data from the students of the different universities. The questionnaire is given below:

Questionnaire:

Research made questionnaire on effects of sleep deprivation on the mental health and grades of students.

Name: -----

Department: _____

Age: -----

Gender: -----

Class: -----

Semester: -----

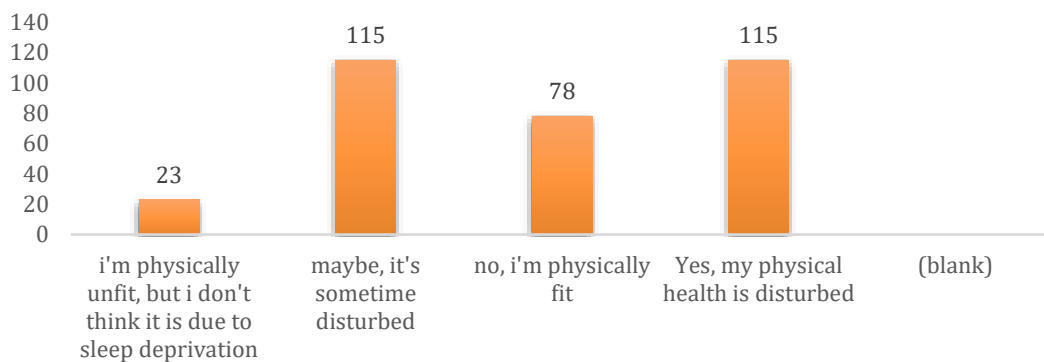
(Instruction: Please Check and Rate Yourself Honestly Based On What You Actually Do Given the Statements Using the Following Scales)

1-Yes 2-No 3-Maybe 4-Never 5- Sometimes

QUESTIONS	1	2	3	4	5
Are you a seriously affected by sleep deprivation?					
Do you sleep 6 hours or more?					
Is your sleeping discipline maintained?					
Does sleep deprivation affect your academic performance?					
Does sleep deprivation affect your mental health?					
Does sleep deprivation affect your daily routine activities?					
Does sleep deprivation alter your physical health?					
Does sleep deprivation causes you a headache all day?					
Does sleep deprivation make you feel drowsy all day?					
Does deprivation of sleep causes you any sort of stress?					
Does sleep deprivation disturb your appetite?					
Does deprivation of sleep make you feel mentally uncomfortable?					
Does deprivation of sleep make you feel physically uncomfortable?					
Does sleep deprivation makes you feel tired all day?					
Does deprivation of sleep causes you depression?					
Does sleep deprivation affect your mood?					
Do you feel any sort of difficulty falling asleep?					
Are you satisfied with your sleeping pattern?					
Are you a morning person?					
Do you feel active when you are not sleep deprived?					

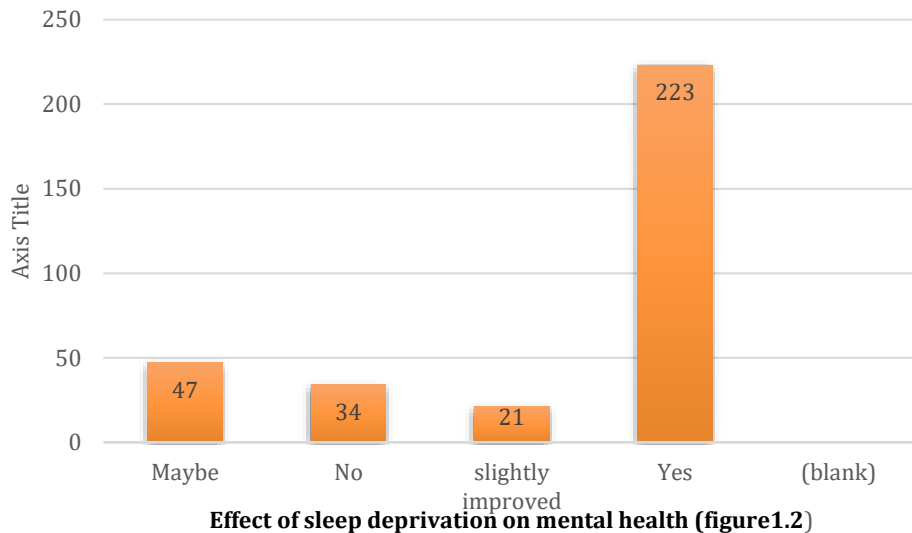
Results

A total number of 343 individuals participated in this descriptive quantitative study, out of which 65.4% were males and 34.6% were females with different family backgrounds. 123 (46.2%) individuals had a nuclear family system while 234 (53.8%) individuals lived in a joint family system. As per obtained data on the effect of sleep deprivation on physical health, 115 individuals reported that their physical health was completely disturbed and 115 reported that maybe it's due to sleep deprivation or maybe not, as shown in figure 1.1:

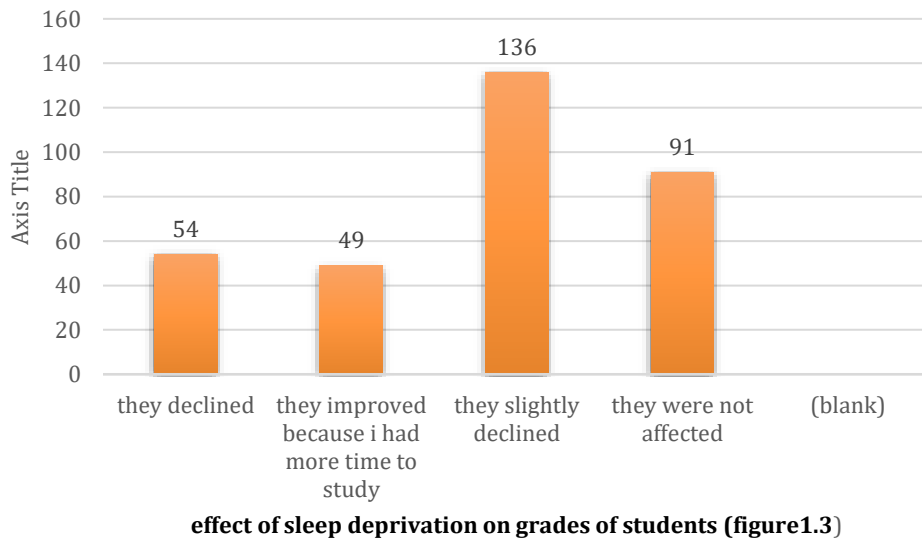


Effect of sleep deprivation of physical health (figure 1.1)

Same number of samples (n=343) were also tested for the effects of sleep deprivation on the mental health of students and the results obtained were; 223 individuals stated that their mental health was disturbed due to the lack of sleep and 47 individuals stated that maybe their sleep was disturbed and maybe not, as shown in figure 1.2:



Out of 343 responses 136 students reported that their grades were slightly declined due to sleep deprivation but 91 students had no effects on their grades while 54 students said that their grades declined and 49 students stated that their grades improved due to increase in the study time, as shown in figure 1.3:



Discussion

We received 343 responses from different age group persons. Collected data consist of 217 males and 115 females, 152 were from nuclear family and 177 were from joint family as Patrick and his colleagues conducted a research in 2017 on the effect of sleep deprivation on cognitive and physical performance in university students. They evaluated that out of 64 participants 58 % were males and 42% were females. They conducted this research by providing student two conditions; one with complete sleep and other one was with one-night sleep deprivation. According to them sleep deprivation has no any significant effect of sleep deprivation on mental and physical health.(10) While we conducted a research in 2023 in which we noticed the effect of sleep deprivation on mental health, physical health and on grades of the students.

Our participants were 343 from different age groups, in which 64.6% males and 36.4% were females. We applied paired two T test in which we compared our variables and found significant results that shows the effect of sleep deprivation was more on mental and physical health but less on grades of the students. Amin and his colleagues conducted a research in 2012 in which they conducted a research on effect of sleep deprivation on mental health and grades of students. Their sample size was 341 with a response of 88.8% in which 53.1% were males and 49% were females. They noticed that the students who were sleep deprived have more effect on their grades as compared to the students who were not sleep deprived. 65.4% were affected and 83% were not affected. (11,12)

According to our research work 27.7% students have strong effect on mental health while 34.8% have slight effect on mental health due to sleep deprivation as well as 27.7% participants have no effect due to variation in sleep cycle. Zhang and his colleagues in 2016 conducted a research study on sleep patterns and mental health correlates in US adolescents. They stated that the average weeknight bedtime was at 22:37am and sleep duration was 7.72 hours. Average weekend bedtime delay was 1.81 hours and average weekend oversleep was 1.17 hours.(13,14)

Out of 343 respondents 34.7 % students stated that their physical health was disturbed because of sleep deprivation but same percentage of students stated that their physical health was slightly disturbed. 68.6% stated that their mental health was disturbed and their grades weren't disturbed.

While we conducted a research in 2023 on effect of sleep deprivation on mental health, physical health and grades of students .we conducted this research randomly in students of different

universities. According to their responses their mental health was disturbed but there wasn't any effect on their grades and their physical health was slightly disturbed. Siraj and her colleagues conducted a research in 2014 on the topic "Sleep pattern and academic performance of undergraduate medical students at university Kebangsaan Malaysia". Their studies stated that Out of 234 medical students, 186 were responded, giving the response rate of 79.5%. Male participants were 27% whereas female were 73% which was in keeping with the student distribution of the institution. Among the participants, 69% resided in college hostel or in-campus and 31 % resided out campus.(15)

Conclusion

In conclusion, our research aimed to investigate the impact of sleep deprivation on the mental health and academic performance of students. Our findings revealed a significant association between sleep deprivation and adverse effects on physical health, cognitive performance, and grades. The majority of participants reported disruptions in their physical well-being, including disturbances in sleep patterns. Our research aligns with studies indicating that sleep deprivation tends to compromise cognitive functions and overall health. However, it's essential to note that the degree of impact on academic performance may vary, with our results suggesting a somewhat mitigated effect on grades. Implementing strategies to address sleep-related issues could potentially enhance both mental well-being and academic success.

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