

KNOWLEDGE OF SLEEP DEPRIVATION AND ACADEMIC PERFORMANCE AMONG NURSING STUDENTS IN COLLEGE OF MEDICINE, UNIVERSITY OF LAGOS.

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ABSTRACT

Sleep is one of our basic needs that play a very important role in a human being's health. It is important for our physical, intellectual and emotional health. Sleep loss not only makes people feel sleepy in the daytime, it is even a possible risk factor for Alzheimer's disease. This study assessed the knowledge of sleep deprivation and academic performance among nursing students in College of Medicine, University of Lagos. The study adopted descriptive survey design and the target population were undergraduate nurses from 200 – 500 level from the Department of Nursing Science, College of Medicine, University of Lagos. A multi stage sampling technique was used select a total of 157 undergraduate nurses as the sample for the study. The instrument used was a self-structured, administered questionnaire. The data obtained was analyzed and the results presented in tables, charts and percentages. The chi-square test was used to compare differences and association between variables. Differences and association were considered significant at p value < 0.05 . The result of this study showed that the majority of the respondents have good knowledge about the effects of sleep deprivation and this have an effect on their academic performance. Factors influencing sleep deprivation among students were loud music, heat, overcrowding in the room, roommate's disturbance, assignments, chores in the room and using of mobile device (e.g. Phone, tablets). It was therefore recommended that sleep deprivation should be avoided at all cost through proper time management.

Keywords: Knowledge, sleep deprivation, academic performance, nursing students

INTRODUCTION

Sleep is critical for memory consolidation, learning, decision making, and critical thinking. Sleep is thus necessary for the optimal operation of key cognitive functions related to academics, and perhaps social success in higher education. Sleep deprivation is known to lead to irregular sleep patterns, daytime sleepiness, exhaustion, inattentiveness, and increased risks for obesity, diabetes, cardiovascular disease, hypertension, mood disorders, substance abuse, and other health issues. Sleep loss (=7hours per night) can have lasting negative effects on the cardiovascular, endocrine, immune, and nervous systems (Sixto & Sanchez, 2013). To compensate for a lack of sleep, students today appear to be developing a higher level of dependence on energy drinks and other caffeinated beverages that continues into adulthood. Both sleep deprivation and poor sleep quality are particularly prominent in young adult and college student populations (Steven, Gilbert & Cameron, 2010).

The amount of sleep a young adult needs is not clearly known, but is thought to be 8 hours. Most college students are sleep deprived, as 70.6% of students report obtaining less than 8 hours of sleep. The impact of educational major on sleepiness and sleep duration is not well studied, but the effect may be substantial. As reported at an Architecture School in the Midwest, only 4% of students obtained at least 7 hours of sleep at night; the average sleep

duration was 5.7 hours, with 2.7 “all-nighters” per month. Eighty-two percent (82%) of college students believe that inadequate sleep and sleepiness impact their school performance. Students rank sleep problems second only to stress in factors that negatively impact academic performance (American College Health Association, 2012). Sleep deprivation focuses on the importance of sufficient sleep for a proper outcome in all spheres of life. Motivation and home environment have a positive relationship with academic achievement optimally sleep affects students learning process and academic achievement (Borse, Deepak, Bansode, Hitesh, Modak, Rasika & Yadav, 2013).

Students who stay up late tend to have lower academic performance, poor quality of sleep and maladjustment to college life. In College of Medicine, University of Lagos, lack of sleep among nursing students has been identified as one of the academic situational constraints that diminish students' performance. Marwa, Abd El-Kader and Mohammad (2013), observed that higher academic performance during the years at university is highly related to career success. Moreover, academic performance influences the future educational attainment and income, which, in turn, affect the health and quality of life. In addition, sleep debt accumulated during the week often leads to prolonged sleep periods or catch-up sleep on weekends causing severe day-to-day irregularities of sleep patterns in adolescents and young adults, insufficient sleep time, with associated sleepiness, fatigue, inattentiveness, sleep deprivation has been identified as a major cause of poor academic performance among high school and college-aged students. This study tends to assess the knowledge of sleep deprivation in relation to academic performance among nursing students in College of Medicine, University of Lagos.

Objectives of the study

The specific objectives of this study are to:

1. Assess the knowledge of sleep deprivation among nursing students in College of Medicine, University of Lagos.
2. Determine the effect sleep deprivation in relation to academic performance among nursing students in College of Medicine, University of Lagos.
3. Identify factors influencing sleep deprivation in relation to academic performance among nursing students in College of Medicine, University of Lagos.

METHODOLOGY

The study was a descriptive survey. The target population was undergraduate nurses from 200 – 500 level of the Department of Nursing Science, College of Medicine, University of Lagos. A multi stage sampling technique was used select a total of 157 undergraduate nurses as the sample for the study. The instrument used was a self-structured developed questionnaire. It was made up of four (4) sections: - Section A: it reflects the demographic characteristics of the respondents; section B: shows knowledge of sleep deprivation, section C: shows the effect of sleep deprivation in relation to academic performance while section D: shows factors influencing sleep deprivation in relation to academic performance. Likert scale was used and decision key is strongly agreed=4 Agreed=3 Undecided = 2, Disagreed =1 Strongly disagreed =0 The developed questionnaire was given to a panel of experts for critiquing to ensure face, content and construct validity, and modification made where necessary. The reliability was established through, test retest method and yielded a coefficient of 0.75. Only 151 students that were eligible took part in the study. The questionnaire was administered by the researchers and data was analyzed and presented in tables, and percentages. The chi - square test was used to test Hypothesis.

In this study, 151 students were involved and all the respondents took part and were eligible for final analysis with a response rate of 100%. The majority of the respondents were females (90.7%) most of whom are single. The majority

of the respondents 124 (82.1%) reside in the hostel and 78 (51.7%) of the respondents' last CGPA were between 2.5-3.49 and 86 (57.0%) were within the age range 23-26years

Table 2: Knowledge on sleep deprivation.

Sleep deprivation is	SA (%)	A (%)	U (%)	D (%)	SD (%)
Not sleeping well.	81(53.6)	58(38.4)	9(6.0)	2(1.3)	1(0.7)
Doesn't affect my academic performance.	24(15.9)	54(35.8)	30(19.9)	28(18.5)	15(9.9)
Has no known effect on students?	16(10.6)	37(24.5)	13(8.6)	67(44.4)	18(11.9)
Propagated by academic work load.	62(41.1)	46(30.5)	19(12.)	24(15.9)	0
Detrimental to physiologic balance.	90(59.6)	59(39.1)	2(1.3)	0	0
Means not getting at least 6 hours of sleep.	29(19.2)	72(47.7)	24(15.9)	21(13.9)	5(3.3)
A normal phenomenon with every student.	12(7.9)	36(23.8)	23(15.2)	62(41.1)	18(11.9)
Important to remain alert and functional in class.	81(53.6)	43(28.5)	17(11.3)	9(6.0)	1(0.7)
Necessary for optimal academic success.	5(3.3)	22(14.6)	14(9.3)	71(47.0)	39(25.8)
Allows one to cover more ground in reading.	9(6.0)	55(36.4)	34(22.5)	50(33.1)	3(2.0)
Caffeine addiction leads to sleep deprivation.	55(36.4)	76(50.3)	13(8.6)	6(4.0)	1(0.7)
Alcohol contributes to sleep deprivation.	22(14.6)	37(24.5)	27(17.9)	39(25.8)	26(17.2)
Occur through perpetual use of tea.	17(11.3)	37(24.5)	23(15.2)	49(32.5)	25(16.6)

Table 2 shows that majority of the respondents 101(66.9%) have good knowledge about the effects of sleep deprivation. This is because the 73% of the respondents know that sleep deprivation is not sleeping well, 56% knows that it can be propagated by academic work, 79% knows that sleep deprivation is

detrimental to physiologic balance, 54% knows that it is important to remain alert and functional in class and 63% of respondents knows that caffeine addiction leads to sleep deprivation. In summary, the respondents' knowledge score about the effects of sleep deprivation is 66%

Table 3: Effect of sleep deprivation on academic performance

Sleep deprivation can:	SA (%)	A (%)	U (%)	D (%)	SD (%)
Affect my cognition.	19(12.6)	46(30.5)	21(13.9)	43(28.5)	22(14.6)
Affect my academic performance.	24(15.9)	39(25.8)	22(14.6)	42(27.8)	24(15.9)
Lead to serious sleep disorders.	47(31.1)	80(53.0)	4(2.6)	5(3.3)	15(9.9)
Bring about physical illness.	46(30.5)	71(47.0)	12(7.9)	15(9.9)	7(4.6)
Makes me doze off in class.	41(27.2)	83(55.0)	11(7.3)	11(7.3)	5(3.3)
Lead to mental illness.	12(7.9)	26(17.2)	30(19.9)	50(33.1)	33(21.9)
Makes me late to class.	51(33.8)	61(40.4)	18(11.9)	16(10.6)	5(3.3)
Causes me to over sleep on weekends.	45(29.8)	42(27.8)	24(15.9)	26(17.2)	14(9.3)
Makes me irritable towards others.	11(7.3)	28(18.5)	48(31.8)	50(33.1)	14(9.3)
Affects my assimilation rate.	50(33.1)	34(22.5)	28(18.5)	19(12.6)	20(13.2)
Affects retention	39(25.8)	55(36.4)	35(23.2)	17(11.3)	5(3.3)
Causes frustration.	59(39.1)	50(33.1)	34(22.5)	8(5.3)	0
Lead to drug abuse.	21(13.9)	35(23.2)	42(27.8)	46(30.5)	7(4.6)
Lead to suicidal ideations.	2(1.3)	4(2.6)	32(21.2)	79(52.3)	34(22.5)
Causes failure in academic performance.	55(36.4)	76(50.3)	13(8.6)	6(4.0)	1(0.7)
Can lead to the use of sleep stimulants.	22(14.6)	37(24.5)	27(17.9)	39(25.8)	26(17.2)
Causes truancy	17(11.3)	37(24.5)	23(15.2)	49(32.5)	25(16.6)

Table 3 shows that Sleep deprivation have an effect on the respondents' academic performance such as Leading to serious sleep

disorders (57%), Bring about physical illness (54%), Makes me late to class (54%), causes failure in academic performance (62%)

Table 4: Factors affecting quality of sleep

Questions	SA (%)	A (%)	U (%)	D (%)	SD (%)
Loud music	63(41.7)	59(39.1)	18(11.9)	5(3.3)	6(4.0)
Having the lights on	2(1.3)	105(69.5)	7(4.6)	37(24.5)	0
Academic workload	19(12.6)	46(30.5)	21(13.9)	43(28.5)	22(14.6)
Use of caffeine products	24(15.9)	39(25.8)	22(14.6)	42(27.8)	24(15.9)
Drinking products containing cola	47(31.1)	80(53.0)	4(2.6)	5(3.3)	15(9.9)
Heat	69(45.7)	56(37.1)	11(7.3)	13(8.6)	2(1.3)
Overcrowding in the room.	84(55.6)	43(28.5)	21(13.9)	3(2.0)	0
Having the lights off	16(10.6)	33(21.9)	37(24.5)	46(30.5)	19(12.6)
My roommates disturb my sleep.	84(55.6)	52(34.4)	12(7.9)	3(2.0)	0
Noise from my neighbors next door interferes with my sleep.	18(11.9)	37(24.5)	33(21.9)	39(25.8)	24(15.9)
Pending exams and tests	28(18.5)	80(53.0)	20(13.2)	16(10.6)	7(4.6)
Anxiety keeps me awake.	47(31.1)	65(43.0)	20(13.2)	15(9.9)	4(2.6)
Assignments keep me awake mostly.	70(46.4)	27(17.9)	24(15.9)	23(15.2)	7(4.6)
Emotional stress from home affects my sleep.	2(1.3)	4(2.6)	32(21.2)	79(52.3)	34(22.5)
Chores in the room.	55(36.4)	76(50.3)	13(8.6)	6(4.0)	1(0.7)
Menial job affects my level of sleep.	22(14.6)	37(24.5)	27(17.9)	39(25.8)	26(17.2)
Going for all night reading interferes	17(11.3)	37(24.5)	23(15.2)	49(32.5)	25(16.6)
Watching television late into the night.	5(3.3)	6(4.0)	18(11.9)	63(41.7)	59(39.1)
Use of mobile device (e.g phone, tablets) late into the night	105(69.5)	37(24.5)	7(4.6)	2(1.3)	0

Table 4 showed that factors influencing sleep deprivation among students as revealed by this study include:- loud music (80.8%), heat (82.5%), overcrowding in the room(84;1) roommates disturbance(91.0%), assignments

(63.3%), chores in the room (96.7%) and using of mobile device (e.g phone, tablets), roommates disturbance, assignments, chores in the room and using of mobile device (e.g phone, tablets, i-pads) (99%).

Table 5: Relationship between sleep deprivation and the level of study

Class level	Sleep deprivation?		Total	X ²	df	p-value
	Yes	No				
200L	25	11	36	2.586	3	0.460
300L	24	11	35			
400L	30	6	36			
500L	33	11	44			
Total	112	39	151			

*significance level at 0.05

Table 5 shows that there is no significant relationship between sleep deprivation and the level of study of nursing students with a p-value >0.05

Table 6: Relationship between sleep deprivation and academic performance of the students

CGPA	sleep deprivation		Total	X ²	df	p-value
	Yes	No				
4.5-5.0	5	0	5	3.915	2	0.141
3.5-4.49	46	22	68			
2.5-3.49	61	17	78			
Total	112	39	151			

*significance level at 0.05

Table 7 shows that there is no significant relationship between sleep deprivation and academic performance of the students with a p-value > 0.05

DISCUSSION OF FINDINGS

This study assessed the knowledge of sleep deprivation and academic performance among nursing students in College of Medicine, University of Lagos. The demographic characteristics showed that majority of the respondents were females (90.7%) most of whom are single. Majority of the respondents

124 (82.1%) reside in the hostel and 78(51.7%) of the respondents' last CGPA were between 2.5-3.49 and 86(57.0%) were within the age range 23-26years.

The result of this study showed that majority of the respondents have good knowledge about the effects of sleep deprivation. This agrees with a study by Luo, Feng & Li (2013) showed that

Chinese medical students generally understood sleep disorders to be an important problem and that sleep problems were considered as significant clinical issue by 93% of the students, and they believed that people with sleep disorders should seek treatment. But the result contradicts the study of Sivagnanam (2013), on the knowledge, belief, and practice of sleep hygiene among final year medical students of six medical colleges of Tamil Nadu, India, the findings revealed inadequate knowledge and many misconceptions regarding sleep.

This study showed that Sleep deprivation have an affect their academic performance with resultants effects such as missing out on notes in class. This result is consistent with a study carried out by Thomas, McIntosh, Lamar and Allen (2017) on Sleep deprivation in nursing students: The negative impact for quality and safety which also revealed that majority of participants 60.8% only slept 5-6 hours before class or clinical experience and often felt sleep deprived.

Factors influencing sleep deprivation among students as revealed by this study include: loud music, heat, overcrowding in the room, roommate's disturbance, assignments, chores in the room and using of mobile device (e.g phone, tablets, i-pads). This agrees with result of ramanik, Sherpa & Shrestha, (2012) on Nepal where 31.5% of medical students suffered from sleep deprivation due to late night internet surfing and use of mobile device to browse (e.g phone, tablets, i-pads) late into the night. This result disagrees with the result of a study conducted by Hampton (2012) on the Impact of the lack of sleep on academic performance in college students, the researcher found that there is a high significance ($p < .001$) for the effect that sleep has on a student's academic performance or grade point average. Hampton (2012) found that the less sleep a student receives the lower their self-reported

GPA was. This finding was also corroborated by Munson, (2011) who observed that students that are sleep-deprived can therefore lose up to 30% of what they studied up to two days earlier.

Due to the fact that too little sleep leaves them drowsy and unable to concentrate the following day, impairs memory and physical performance and invariably can causes mood swings and hallucinations.

Conclusion and Recommendations

From the result we thereby conclude that majority of the respondents have good knowledge about the effects of sleep deprivation and this have an affect on their academic performance. Factors influencing sleep deprivation among students are loud music, heat, overcrowding in the room, roommates' disturbance, assignments, chores in the room and using of mobile device (e.g phone, tablets,). It is therefore recommended that sleep deprivation should be avoided at all cost by effective time management.

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