

A survey-based study of sleep cycle patterns among dental and management students

Ankita Komal Labh¹, R. Gayatri Devi^{2*}, A. Jothi Priya²

ABSTRACT

Introduction: Sleep is an essential daily requirement, absence of which has serious physiological consequences. Getting enough sleep is an underestimated but critical part of learning. Too little sleep can lead to an increase in body weight by changing levels of the hormones that control satiety and hunger, resulting in overeating, overweight, and obesity. The aim of this study is to study and compare the sleeping patterns of BDS and management students. **Materials and Methods:** This is a questionnaire-based study. An online form is circulated among 100 BDS and 100 Management students which will include questions regarding the sleeping habits of an individual and the factors that affect it. Students answer this online questionnaire enquiring their sleeping patterns and the reasons for their irregular sleeping pattern. Results are obtained using proper statistical methods, and the sleep pattern of students is studied. **Result:** In general, it was observed that management students had a more sufficient sleep cycle than BDS students. A larger proportion of management students slept for more than 8 h, and their main cause for late-bed timing was watching movies and listening to music whereas BDS students had a smaller sleep-span and spent more time studying late into the night. **Conclusion:** BDS students followed a more stressful sleep cycle than management students. Thus, the sleeping pattern of management students, though disrupted, is better cycle than that of BDS students.

KEY WORDS: Disturbed sleep, Sleep cycle, Sleep deprivation, Sleeplessness, Sound sleep

INTRODUCTION

Sleep is a universal need of all life forms including humans,^[1] absence of which has serious physiological consequences.^[2] Restricting sleep can be a reason for a range of neurobehavioral maladies such as lapses of attention, slowed working memory,^[3] and reduced cognitive output. It can also be a cause of depressed mood,^[4] anxiety, stress,^[5] and loneliness.^[6] Lack of sleep can stimulate the brain to form more of the Alzheimer's-linked protein, namely "amyloid beta" than its waste-disposal system can afford to handle, according to a study.^[7] Humans spend about one-third of their lives asleep, yet most people know little about sleep.^[2] College students are found to be one of the most sleep-deprived populations. Researchers have stated that sleep deprivation is one of the most influential causes of low academic scores among

college students aside from stress, which contributes to sleep deprivation.^[8] Irregular sleeping patterns can have several short-term consequences such as sleeplessness, poor concentration, inability to think, and process information.^[9] In the long-term it weakens the immune system.^[9] Untreated sleep disorders are associated with various medical illnesses such as high blood pressure,^[10] heart attack, obesity,^[11] and mood instability.^[12] A study done in 2010 found that C-reactive protein, which is found to be a contributing cause of heart attack, was higher in people who got 6 or <6 h of sleep a night.^[13] This study aims to bring forth the prevalence of irregular sleeping cycles amongst students and inspire them to reinitialize their sleeping patterns.

MATERIALS AND METHODS

This was a survey-based study which was conducted on an online portal, surveyplanet.com. An online questionnaire was circulated separately among BDS and management students of Saveetha Dental College

Access this article online

Website: jprsolutions.info

ISSN: 0975-7619

¹Department of Physiology, Saveetha Dental College, Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai Tamil Nadu, India, ²Department of Physiology, Saveetha Dental College, Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai, Tamil Nadu, India

*Corresponding author: R. Gayatri Devi, Department of Physiology, Saveetha Dental College, Saveetha University, 162, Poonamallee High Road, Chennai - 600 077, Tamil Nadu, India. E-mail: gayatri.physio88@gmail.com

Received on: 27-03-2018; Revised on: 28-04-2018; Accepted on: 10-06-2018

and Saveetha School of Management, respectively through social media platforms, namely WhatsApp and Instagram. The sample size was 100 BDS and 100 Management students, i.e., a total of 200 students.

The first 5 questions asked for the duration of sleep of students during holidays, weekends, weekdays, and normal wake-up, and sleeping timings. The next 7 questions mainly revolved around various reasons that would lead to abnormal sleeping. These included daytime naps, falling asleep in class, sleeping in late, having sleepless nights, or extremely peaceful nights. Further few questions asked how anxiety, depression, hyperactivity, jet lag, and late-night chatting affected their sleeping pattern. One question enquired whether the survey taker uses sleep-inducing drugs and the last question asked for their opinion on having a proper 8 h sleep.

The data collected for BDS and management students were studied, and the sleeping patterns of the two groups of students were compared to find out the major areas of similarities and differences. This quantitative data were used to figure out the comparative quality of sleep of these students.

RESULTS

According to this present survey, BDS students were waking up early and sleeping time also less when compared to management students. The detailed statistics were discussed.

DISCUSSION

Mostly management students woke up after 7 am (46.6%) that BDS students (20.5%). Almost 80% of BDS students woke up before 7 am whereas the percentage goes down to 53.3% in management students [Figure 1]. Equal proportion of students slept for a duration of 5–7 h during exams under both the categories, the percentage being 36.7%. However, about 26.6% of management students slept for 8 or more than 8 h, the proportion decreasing to only 6% in BDS students. Furthermore, more BDS students slept for <4 h (57.3%) than management students (36.6%) during exams [Figure 2]. BDS students have a higher tendency of pulling an all-nighter than management students. 76.1% of BDS students said they pull all-nighters whereas among management students the proportion went down to 63.3%. Only 3.3% of



Figure 1: Generally wake-up time

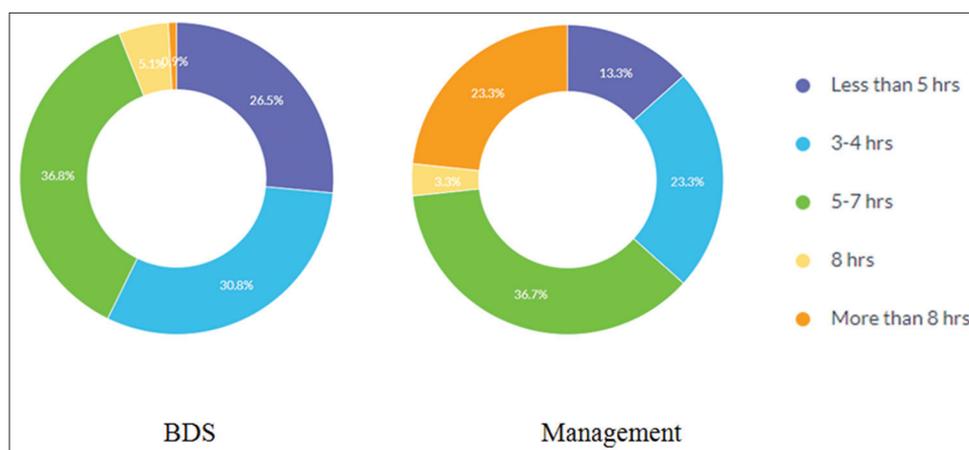


Figure 2: Average sleep duration during exams

management students pull all-nighters on a regular basis before exams, the percentage drastically increasing to 23.1% in BDS students [Figure 3]. About 67% of management students stated that watching movies and listening to music was the main reason for this. Only 51% of BDS students had the same answer. On the other hand, 35% of BDS students went late to bed due to college work/studies, the percentage reducing to 20% in management students. However,

an equal proportion of students went late to bed because they were out with their friends and/or family [Figure 4]. Although a large portion of students do not use sleeping pills, the proportion of non-usage turned out to be more in management students (96.7%) than in BDS students (86.3%). About 14% of BDS students used sleeping pills - some occasionally, some always - and only 3.3% of management students used them always [Figure 5].



Figure 3: Pull an "all-nighter" before an exam

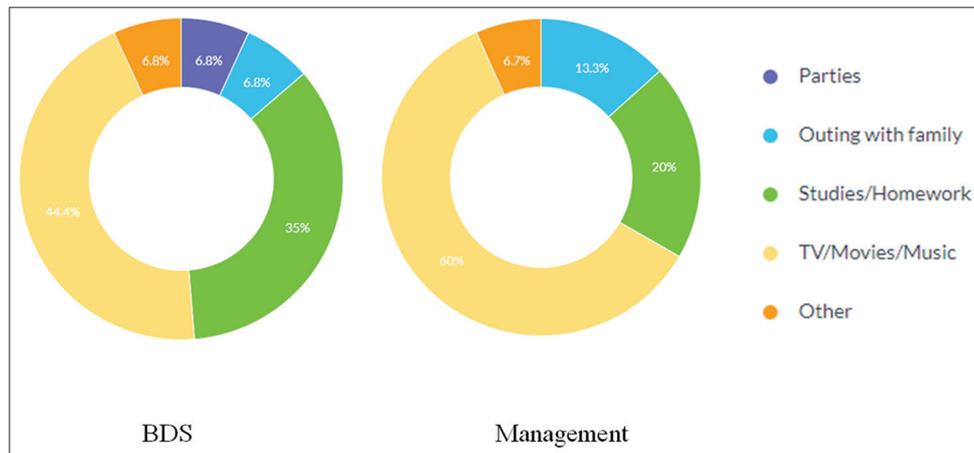


Figure 4: Applicable excuse behind late bed-timings at night

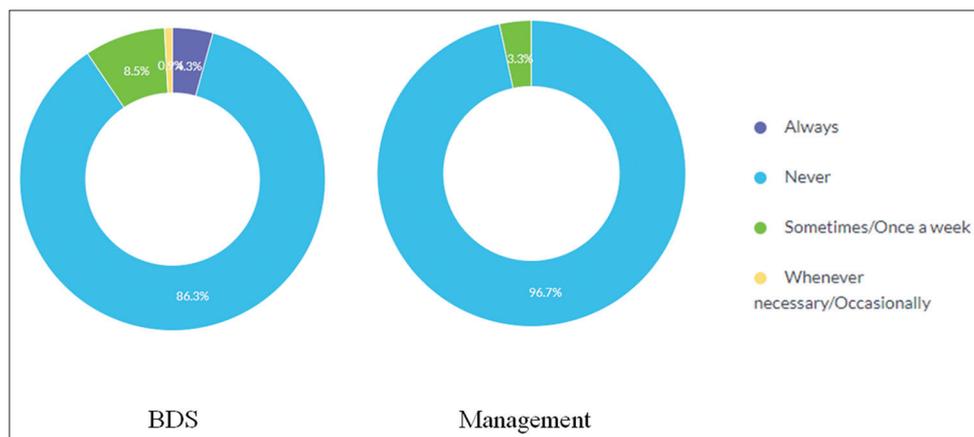


Figure 5: Sleep-inducing drugs to fall asleep

In the present study, it was seen that 65.8% of BDS students slept after 11 pm whereas only 20% of management students were in this category. 24.8% of BDS students slept for 8 h or more, the percentage increasing to 33.3% for management students. Lesser management students had sleep duration <7 h (53.3%) than BDS students (65%). In the past few decades, many studies conducted on students taking a variety of courses have concluded that short sleep duration, poor sleep quality, late bed and rise times, and irregular sleeping schedules are negatively related to academic performance^[1,14] of students in different populations, societies, universities, and academic strata.^[15,16]

During exam time, majority of BDS students (94%) slept for <7 h, the percentage decreasing to 73.3% in management students. 76% BDS students and 66.7% management students pulled all-nighters more often. According to a study, a normal person needs approximately 8 h of sleep every night to perform daily activities efficiently,^[17] the need of which increases if that person happens to be a student due to academic pressure.^[18] Some studies showed that students' academic performance was adversely affected by the time students went to bed and the time they woke up rather than the total time spent in bed.^[19] More BDS students lost sleep due to low mood, anxiety or depression - the percentage being 20.5% than management students where the percentage was 3.3% only. Most of these studies concluded that students with low sleep quality or disturbed/interrupted sleep are more subjected to psychological disorders, mental health problems, and academic tardiness or even failure to perform well.^[19] Among BDS students, 47% of them were insisted to have 8h sleep is very important and should be strictly followed. The pattern was almost similar in management students with the percentage was 44%. Systemic education on the importance of sleep and time management is needed for college-going students.^[20]

CONCLUSION

This study significantly points out the differences and similarities in the sleeping pattern of BDS and management students and hence, brings to light the consequences of irregular and insufficient sleeping.

REFERENCES

1. Rupashri SV. Survey on sleep habits and academic performance of dental college students. *Int J Life Sci Rev* 2015;1:268-78.

2. Institute of Medicine (US) Committee on Sleep Medicine and Research, Colten HR, Altevogt BM. Sleep disorders and sleep deprivation: An unmet public health problem 2006;10:5.
3. Aubusson K. Brain Reboot: Just One Sleepless Night may Affect Memory and Learning, Study Finds. *The Sydney Morning Herald*; 2016. Available from <http://www.smh.com.au/national/health/brain-reboot-just-one-sleepless-night-may-affect-memory-and-learning-study-finds-20160824-gqzo5w.html>. [Last accessed on 2016 Aug 24].
4. Gordon AM. Up All Night: The Effects of Sleep Loss on Mood. Available from <https://www.psychologytoday.com/blog/between-you-and-me/201308/all-night-the-effects-sleep-loss-mood>. [Last accessed on 2013 Aug 15].
5. Lund HG, Reider BD, Whiting AB, Prichard JR. Sleep patterns and predictors of disturbed sleep in a large population of college students. *J Adolesc Health* 2010;46:124-32.
6. Banks S, Dinges DF. Behavioral and physiological consequences of sleep restriction. *J Clin Sleep Med* 2007;3:519-28.
7. Bhandari T. Sleepless Nights let Alzheimer's Protein Build Up in Brain. Washington: University in St. Louis; 2017.
8. Regents of the University of Michigan Sleep; 2016. Available from http://www.campusmindworks.org/students/self_care/sleep.asp. [Last accessed on 2016 Nov 12].
9. Shah K. How Important Is Getting a Good Night's Sleep? 2016. Available from <https://www.practo.com/healthfeed/how-important-is-getting-a-good-night-s-sleep-12262/post>. [Last accessed on 2016 May 19].
10. Lusardi P, Zoppi A, Preti P, Pesce RM, Piazza E, Fogari R, *et al.* Effects of insufficient sleep on blood pressure in hypertensive patients: A 24-h study. *Am J Hypertens* 1999;12:63-8.
11. Knutson KL, Van Cauter E. Associations between sleep loss and increased risk of obesity and diabetes. *Ann N Y Acad Sci* 2008;1129:287-304.
12. Dinges DF, Pack F, Williams K, Gillen KA, Powell JW, Ott GE, *et al.* Cumulative sleepiness, mood disturbance, and psychomotor vigilance performance decrements during a week of sleep restricted to 4-5 hours per night. *Sleep* 1997;20:267-77.
13. Sparacino A. 11 Surprising Health Benefits of Sleep. 2013. Available from: otbtbh.blogspot.com/2013/06/11-surprising-health-benefits-of-sleep.html [Last accessed on 2013 Mar 04].
14. Rafidah K, Azizah MA, Mohd M, Chong C. Stress and academic performance: Empirical evidence from university students. *Acad Educ Leadersh J* 2009;13:1.
15. Schmidt RE, Van der Linden M. The relations between sleep, personality, behavioral problems, and school performance in adolescents. *Sleep Med Clin* 2015;10:117-23.
16. Sunitha C, Aravindkumar S. Obstructive sleep apnea: Clinical and diagnostic features. *Indian J Dent Res* 2009;20:487-91.
17. Forquer LM, Camden AE, Gabriau KM, Johnson CM. Sleep patterns of college students at a public university. *J Am Coll Health* 2008;56:563-5.
18. Roehrs T, Shore E, Papineau K, Rosenthal L, Roth T. A two-week sleep extension in sleepy normals. *Sleep* 1996;19:576-82.
19. Valic M, Pecotic R, Lusic L, Peros K, Pribudic Z, Dogas Z, *et al.* The relationship between sleep habits and academic performance in dental students in Croatia. *Eur J Dent Educ* 2014;18:187-94.
20. Tsui YY, Wing YK. A study on the sleep patterns and problems of university business students in Hong Kong. *J Am Coll Health* 2009;58:167-76.

Source of support: Nil; Conflict of interest: None Declared