

Influence of Sleep Disturbance, Fatigue, Vitality on Oral Health and Academic Performance among Students of Mamata College

J. Pooja¹, K. V. N. R. Pratap², T. Madhavi Padma³, V. Shiva Kalyan⁴, P. Srikanth⁵

¹Student (BDS), Department of Public Health Dentistry, Mamata Dental College, Khammam, India

²Professor & HoD, Department of Public Health Dentistry, Mamata Dental College, Khammam, India

³Professor, Department of Public Health Dentistry, Mamata Dental College, Khammam, India

⁴Reader, Department of Public Health Dentistry, Mamata Dental College, Khammam, India

⁵Lecturer, Department of Public Health Dentistry, Mamata Dental College, Khammam, India

Abstract: Background: Oral health and academic performance are factors contributing for student's professional life. Sleep disturbances, vitality and fatigue are the factors which have a strong impact.

Objective: The objective of the study was to assess the association of sleep disturbances, fatigue and vitality with self-reported oral health status, oral hygiene habits and academic performance of Mamata College students.

Methods: A descriptive cross sectional study was conducted among medical and dental interns of Mamata college. Self-administered structured questionnaire was used to assess the psychological factors, vitality, sleep quality, fatigue, self-reported oral health status, habits and academic performance.

Results: Of the 210 participants, 172 persons were female and 38 were male. Respondents who had poor oral hygiene practices had more disturbed sleep. Subjects who had good sleep practices flossed every day and were found to have more energy.

Conclusion: The present study confirms that disturbed sleep, aliveness and fatigue, all are interlinked with each other and are imperative factors having the potential to alter the oral health status, habits and academics of dental students.

Keywords: oral health, academic performance

1. Introduction

Stress is defined as a physiological response to situations or issues that may not affect a person's attitude or body personality. In today's fast paced lifestyle, stress is inevitable part. Sleep disturbance, fatigue, depression are commonly associated with stress. These factors are interlinked with each other and are imperative factors having potential to alter oral health status, habits, academic performance.

Poor sleep pattern, day time sleepiness and depressive symptoms are common in college students and may turn them prone to mood disorders, substance abuse and impaired academic performance [8]. An adult is recommended to sleep for at least 8 hours per night for good health. Students are deprived of sleep due to high work and study loads.

Tiredness is also due to lack of sleep. These disturbances

generally show a negative impact on academic performance and also interest for the basic self-caring tasks performed in life is lost, that is it may have a negative impact on maintaining proper oral hygiene which can lead to dental caries and periodontal problems [7].

So this study was conducted with an objective to assess the association of sleep disturbance, fatigue, vitality with self-reported oral health status, oral hygiene habits and academic performance of dental and medical students.

2. Methodology

A cross sectional survey was conducted among 210 students of Mamata medical and dental college and hospital, Khammam, Telangana from 8/5/2019 to 10/5/2019. A structured, self-administered questionnaire in English was distributed to the interns of Mamata college.

The questionnaire was pretested and necessary modification was done and finalized before collection of data. Consent is taken prior to study from study objects. The permission was taken from the Head of department of Public Health Dentistry.

All the interns present during the study on the day of survey were included. Students who were absent during the day of survey and not willing to participate were excluded. Total number of students present during the survey conducted were 210 students which includes males and females of ages between 21 to 25 years. The background questionnaire included questions on a range of demographic variables such as age and course of study.

It was a 14 item questionnaire measuring attitudes of students towards influence of sleep disturbance, fatigue, vitality on oral health and academic performance in dental and medical.

Statistical analysis:

Statistical analysis was done by using SPSS 25. Descriptive statistics were performed. Chi square test was used to find the association among categorical variables.

3. Results

A total of 210 study subjects participated in the study. 172 persons were women and 38 persons were men. Statistically significant difference was observed $P < 0.05$ in some questions.

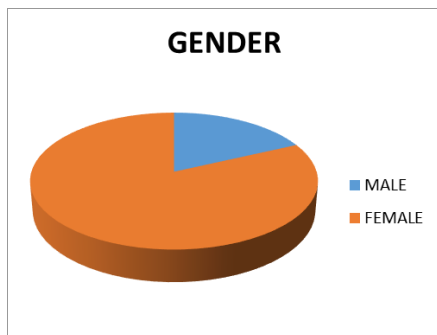


Fig. 1. Gender

Half of the students that is 44.8 % strongly agreed that sleep disturbances, fatigue, vitality influence them from not practicing oral hygiene practice and some people that is 9.5 % of them strongly disagreed. The statistically significant difference was observed that is $p = 0.000$.

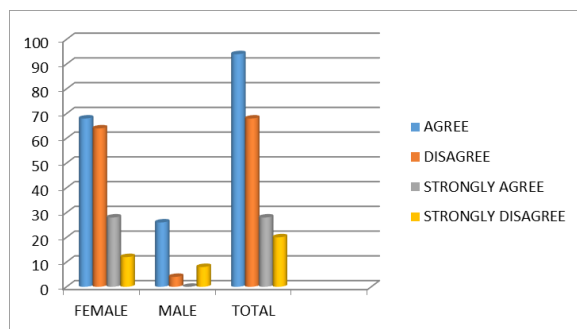


Fig. 2. Sleep disturbance on oral hygiene practice

Students were asked if they neglected taking care of their oral hygiene because of sleep disturbances or fatigue and more than half of the students that is 54.8 % replied as sometimes but a few that is 11.4% of them responded as many times. The statistically significant difference was observed $p = 0.002$.

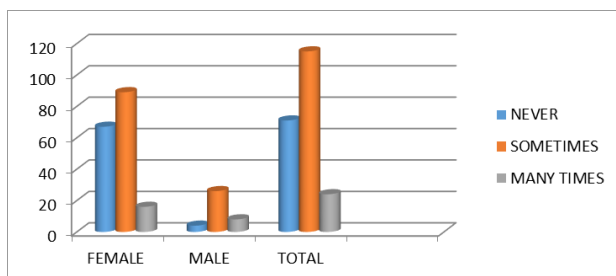


Fig. 3. Neglecting oral health care due to fatigue

66.2 % of the students reacted as 'yes' and 33.8 % of the students reacted as 'no' for the question if they properly follow all the oral hygiene practices when they are energetic. The

statistically significant difference was observed $P = 0.007$.

Students were asked to answer how long would they spend time for brushing teeth during exams. About 52.9 % of the students answered 2mins and a few that is 9.5 % answered less than 1min. The statistically significant difference was observed that is 0.028 %.

Students were asked if they had mood swings at those times when they did not have adequate sleep or when they are tired. Majority of them that is 77.1 % answered 'yes' and a few of them that is 22.9% answered 'no'. The statistically significant difference was observed $P = 0.002$.

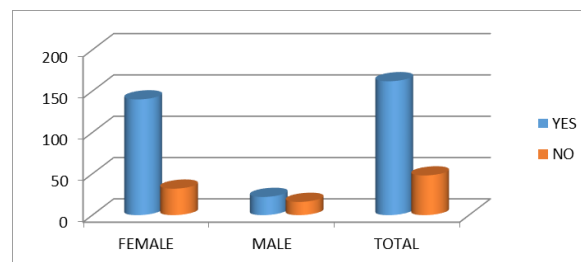


Fig. 4. Mood swings

44.9 % of the students answered 'never' and 27.6 % of the students answered 'many times' for the question if were they caught any time in the class sleeping due to sleep disturbances at night time. The statistically significant difference was observed $P = 0.000$.

For the question 'which practice do you think needed to be modified for healthier life', most of the students that is 82.9 % responded life style, adverse habits, food routines should be changed. The statistically significant difference was observed $P = 0.00$.

Most of the students that is 78.1% answered practicing meditation, indulging in hobbies, spending time with family can combat academic stress and hard work but only 7.6 % of them answered by practicing meditation. The statistically significant difference was observed $P = 0.000$

The need of the study is to create awareness about affect of sleep disturbance, fatigue, vitality on oral health and academic performance of students.

4. Discussion

The present research is conducted to assess the association of sleep disturbance, fatigue, vitality with oral health and academic performance of dental and medical students. Poor sleep pattern have become very common these days among students and may lead to mood disorders, impaired academic performance and interest for basic self-caring tasks is lost [8]. This may be due to academic and clinical work load causing stress [8].

The study results have revealed that a significant proportion of the student's present poor sleep pattern. Poor sleep pattern, excessive day time sleepiness is responsible for poor academic performance. In the present study it was observed that students

with poor sleep pattern had a negative impact on academic performance. Similarly, several other studies conducted by Lund et al in 2010 (3), Rosen et al in 2016 (4), proved that disturbed sleep has lead to poor academic performance. Pagal et al in 2010(5) reported 69.7 % of the students suffered from sleep disorders and 27.7 % of the students with sleep disorders suffered from concentration problems.

Poor sleep quality is associated with daytime sleepiness. In this present study it was observed that more than half of the population had day time sleepiness. A study in Saudi Arabia showed prevalence of 36 %, similarly in Argentina and Peru. But contrast, higher levels reported in Brazil [8].

Tiredness, less activeness are more in students with higher levels of stress. This present study showed subjects with more stress tend to be less vital, Dumitrescu et. al. in 2010[1] proved the same in his study, similarly Morin et. al. [6].

It is observed that subjects with disturbed sleep usually have least interest towards oral health maintenance. It was evident from prior studies conducted by Yuen et al in 2014 [2]. Similarly, our findings also are similar with the findings from research.

We recommend atleast 8 hours of sleep for a healthy life style. Life style, food routine, adverse habits, sleep pattern need to be modified for healthier life. Measures should be taken to compact academic work load and stress [7]. One can recreate themselves by practicing meditation, indulging in hobbies, having fun time with their loved ones, listening to music of their choice etc.

5. Conclusion

The present study has shown significant association between vitality, sleep and fatigue with academic performance and oral

health status among medical and dental students. Disturbed sleep and fatigue were reported to be reasons for being stressed. Students with good sleep habits were good in academics [7]. Disturbed sleep, fatigue also makes a person sometimes lazy to maintain their oral hygiene. Good oral health habits are associated with good sleep habits [7]. Therefore, proper measures should be taken by the students to maintain a healthy life style, which will have a positive impact on their academic performance and personal oral health maintenance practice.

References

- [1] Dumitrescu AL, Toma C, Lascu V. Associations among sleep disturbances, vitality, fatigue and oral health. *Oral Health Prev Dent.* 2010; 8(4):323-330.
- [2] Yuen HK, Hant FN, Hatfield C, Summerlin LM, Smith EA, Silver RM. Factors associated with oral hygiene practices among adults with systemic sclerosis. *Int J Dent Hyg.* 2014; 12(3):180-186.
- [3] 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(2):124-132.
- [4] Rosen IM, Gimotty PA, Shea JA, Bellini LM. Evaluation of sleep quantity, sleep deprivation, mood disturbance, empathy, and burnout among interns. *Acad Med.* 2006; 81:82-85.
- [5] Pagal JF, Kwaitkowski CF. Sleep complaints affecting school performance at different educational levels. *Front Neurol.* 2010 Nov 16; 1:125.
- [6] Morin CM, LeBlanc M, Daley M, Gregoire JP, Mérette C. Epidemiology of insomnia: prevalence, self-help treatments, consultations, and determinants of help-seeking behaviors. *Sleep Med.* 2006; 7:123-130.
- [7] Kailash Asawa, Nandini Sen, Nagesh Bhat, Mridula Tak, Pratibha Sultane, and Aritra Mandal, "Influence of sleep disturbance, fatigue, vitality on oral health and academic performance in Indian dental students," *Clujul Med.* 2017; 90(3):333-343.
- [8] Barahona-Correa, Julián Esteban, Juan Diego Aristizabal-Mayor, Pieralessandro Lasalvia, Alvaro J Ruiz and Patricia Hidalgo-Martínez. "Sleep disturbances, academic performance, depressive symptoms and substance use among medical students in Bogota, Colombia." *Sleep science*, 2018.