CAUSES OF INSOMNIA AND ITS EFFECTS ON DAY TO DAY ACTIVITIES OF REHMAN MEDICAL COLLEGE STUDENTS

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ABSTRACT

Introduction: The aim of this research is to identify the magnitude of self-reported insomnia in medical student in Rehman Medical College, Peshawar; to characterize sleeping habits of medical students; to identify the basic causes of insomnia and to determine how subjective sleep quality affects their day to day activities.

Material & Methods: It was a cross sectional survey conducted at Rehman Medical College Peshawar. A total number of 200 students from both 1st year and 2nd year MBBS were enrolled. Participants completed a self-reported questionnaire. The variables of questionnaire were derived from National Sleep Foundation (USA). Data were entered in MS Excel and Data analysis was done on SPSS version 15 for descriptive statistics.

Results: Response rate was 81.5%, amongst them 65.0% were day scholars while 35.0% were boarders; 22 students were found insomniac according to the National Sleep Foundation (USA) criteria for adult sleep, of these 13 insomniacs were Day scholars and 9 were boarders. Major causes for decreased sleep among the insomniac students were, Stress 14 (73.68%), Studies 14 (73.68%), Exams 13 (68.42%), load shedding 11 (57.89%), and disturbing events around them 6 (31.57%). A sizable number of students, 17 (80.95%) believed that their performance was affected because of the sleep disturbance; also 17 (80.95%) students got irritated due to lack of sleep, 15 (71.42%) students thought that their concentration and retention of lessons in classrooms was greatly affected, 14 (66.67%) students thought that their studies and diet got affected due to less sleep, 13 (61.90%) felt that their personal appearance got affected, 12 (57.14%) students observed that their punctuality was affected by decreased sleep, whereas 7 (33.33%) mentioned that their relationship with friends and family got affected due to decreased sleep.

Conclusion: Insomnia is fairly common among medical students in Rehman Medical College and is associated with stress, exam tension, load shedding, and medical studies. The preliminary data on insomnia categorizes student sleep disturbance as day scholars and borderline. The study provides data on causes and effect of insomnia, which may be used to guide sleep hygiene promotion and intervention among college students.

Key Words: Insomnia; medical students; sleep quality; stress.

INTRODUCTION

Insomnia (or sleeplessness) is defined as an individual's report of sleeping difficulties. While the term is sometimes used in sleep literature to describe a disorder demonstrated by polysomnographic evidence of disturbed sleep(1). The amount of sleep a person gets means nothing, what really counts is the quality of sleep one receives. The quality of this sleep is not governed by genetics, but by sleep habits, sleep environment and the regular timing of sleep pattern. Insomnia on the other hand will decrease the white blood cells; insomnia is directly proportional to the decrease in the release of growth hormone(1).

Some other liberal definitions(2,3) focus solely on the presence of nocturnal sleep disturbances (e.g. sleep initiation or maintenance difficulties, non-resistance sleep) whereas other definitions require additional features such as associated day time impairment(3,4). A messed up sleep pattern may lead to insomnia. Sleep deprivation may have adverse effects on the body. It can affect the mindset, performance, health and also relationships(5).

Sleep pattern changes with age. A new born will need as much as 12-18 hours of sleep; school-aged children almost about 10 hours and adults (18+) as much as 7.5 to 9 hours of sleep. In the later stages of teenage life ("university life") there is a tendency for one to become more alert towards the end of the day(4). This is all related with puberty, might as well lead to "delayed sleep phase syndrome" where one's sleep pattern keeps getting pushed forward until one can no longer sleep till the early hours of morning; this being one of the major causes of sleep deprivation leading to insomnia(4).

The latest Diagnostic and Statistical Manual of Mental Disorders *(*DSM) and the most recent version of International Classification of Sleep Disorders (ICSD)(6,7) systems agree that the complaints of difficulty initiating sleep, difficulty maintaining sleep and/or non-restorative or poor quality sleep constitute the sleep related symptoms of insomnia. Furthermore both systems require insomnia associated daytime impairment, appear to represent universal definitional criteria that fit within exact insomnia nosologies and apply equally well to the various subtypes highlighted below.

Insomnia can be categorized into three types(6-8):

- Transient insomnia
- Acute insomnia
- Chronic insomnia

Transient insomnia is the one that lasts for a few days to a week. It can be caused by stress, worry, excitement, illness or a relationship problem. Once one overcomes these problems a person may return to his normal sleep pattern(8).

Acute insomnia more or less is like transient insomnia just that it can last for several weeks. Major causes are long illness or maybe the demise of close ones(9,10). They might be short term and may disappear. To avoid this kind of short term insomnia the best thing one can do is stick to a sleeping pattern that is most likely to facilitate sleep(9,10).

Chronic insomnia is the big one and the one that may plague for a lifetime. It lasts for months or years. Not surprisingly, it is common and main causes can be bad sleeping environment, long term health problems and long term stress and anxiety(11).

A major cause of insomnia is that of taking stimulants. People might not realize how much affect caffeine can have on the body even if it is ingested early in the day. Diseases like hyperthyroidism and rheumatoid arthritis can lead to insomnia as well(12). Other causes include hypoglycemia, bladder ailments or prostate problems, sleep apnea, disruptive snoring problem, serotonin deficiency and decreased levels of melatonin in the brain. Magnesium or iron deficiency, hormonal imbalance and jet lag are among some other causes of insomnia(12).

Aside from sheer aggravation and lethargy that insomnia causes, researchers have found that insomnia can be quite detrimental to overall health(13). Less severe effects of insomnia might be irritability, excitement and disorientation. Additionally insomniacs have difficulty concentrating on tasks and may also suffer from impaired memory or judgment(14). Effects like increased response time and premature aging may be a vivid outcome of sleeplessness(15). Chronic insomnia may lead to diseases like diabetes and heart diseases as well as cancer. Insomnia can cause complications like obesity, high blood pressure and immune deficiency in addition to psychological disorders like risk of anxiety, slow reaction time, lower performance and depression(16).

The majority of data available on insomnia/lack of sleep is that of the developed nations. Also it shows no or very less research done on the effects of insomnia on medical students, though some work has been done on

the lives of college students suffering from insomnia. Because insomnia has a widespread meaning, less standardization has been done(17). Due to this, synthesizing results of multiple insomnia studies is a difficult if not impossible task. The Research Diagnostic Criteria (RDC)(18) are a set of operational inclusion and exclusion criteria that standardized the definitions for a majority of recognized psychiatric conditions.

The American Academy of Sleep Medicine (AASM)(19,20) commissioned a project designed to develop standard definitions for currently recognized insomnia disorders(20). In this they tried determining which of the current insomnia diagnosis appear most reliable and valid regardless of the nosological system in which they were defined(20). Another aspect is to show how sleeping aids overcome insomnia. Yet remarkably little has been done to understand the root causes of insomnia.

The present study addresses these reasons to some extent. Likewise it attempts to differentiate the insomniacs and non-insomniacs based on questionnaire responses. Through this research it will be revealed what are the possible effects of sleeplessness on the life of a medical student keeping in view the several aspects that can be its cause.

Objectives

The objectives of the study were to:

- Identify the extent and types of insomnia among medical students of Rehman medical college.
- Determine the possible causes of insomnia among these medical students.
- Document the possible effects of insomnia on these medical students.

MATERIAL & METHODS

It was a cross sectional survey conducted at Rehman Medical College Peshawar. A total of 200 students from both 1st year and 2nd year MBBS were enrolled. All students were given a self-administered questionnaire carrying questions regarding insomnia, causes of insomnia, and its effects on medical students. Our study used the National Sleep Foundation (USA), definition of insomnia(21,22). These new definitions were thought to provide a more accurate determination of causes and effects of insomnia on medical students. Data were entered in MS excel and data analysis was done on SPSS version 15.0 for descriptive statistics.

RESULTS

A total of which 163 students participated by responding to the questionnaires (Response rate 81.5%) of which 59.5% were males (n=97) and 40.5% were female (n=66) students. Amongst them 65.0% were day scholars while 35.0% were boarders. The mean age of the students was 19.8 ± 0.85 years. The mean weight of the students was 62.06 ± 11.01 kg.

22 students were found insomniac according to the National Sleep Foundation (USA) criteria for adult sleep (Table 1). Out of these 22, 13(59.1%) were day scholars while 09(40.9%) were boarders (Table 2).

Table 1: Hours of sleep as described by students (n=163)

Hours of sleep	Frequency	Valid percent
6-8 hours of sleep	140	86.4
4-6 hours of sleep	22	13.6

Table 2: Residence status of students (n=163)

Residence status	Frequency	Insomniac	Insomniac percentage
Day scholars	106	13	12.26%
Boarders	57	9	15.78%

Of these 13 insomniac Day scholars, 5 (38.46%) were male students and 8(61.53%) were female students. Whereas amongst the boarder insomniac students 7(77.77%) were male and 2 (22.2%) were female students.

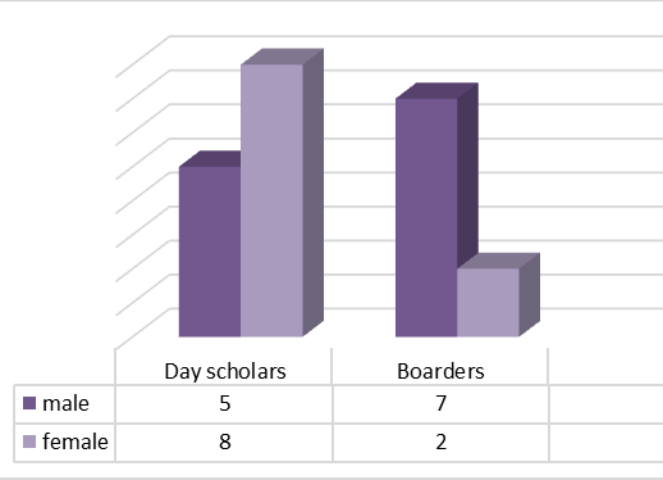

Figure 1: The distribution of male and female insomniac students

Of these, 9 (40.09%) had exam stress, whereas students with reasons like stress, busy life, habitual, load shedding & noise, were having percentage of 9.09% each (Table 3).

Table 3: Reasons of why less than 6 hours of sleep

Reasons for less sleep	Frequency (n=22)	Percent
Anxiety	1	4.54
Stress	2	9.09
Busy life	2	9.09
Change of environment	1	4.54
Exam stress	9	40.90
Habitual	2	9.09
Load shedding, noise	2	9.09
Reading, internet	1	4.54
Games	1	4.54

The results show that students having less than 6 hours of sleep can be divided into 3 categories of Insomnia. 7(43.7%) students are having this lack of sleep problem for a year or more, so they are in the chronic stage of Insomnia. 7(43.7%) students are having this problem for a few months, so they are acute insomniacs, whereas 2(12.5%) students didn't mention the exact time and are having this problem off and on, so they are transient insomniacs (Figure 2).

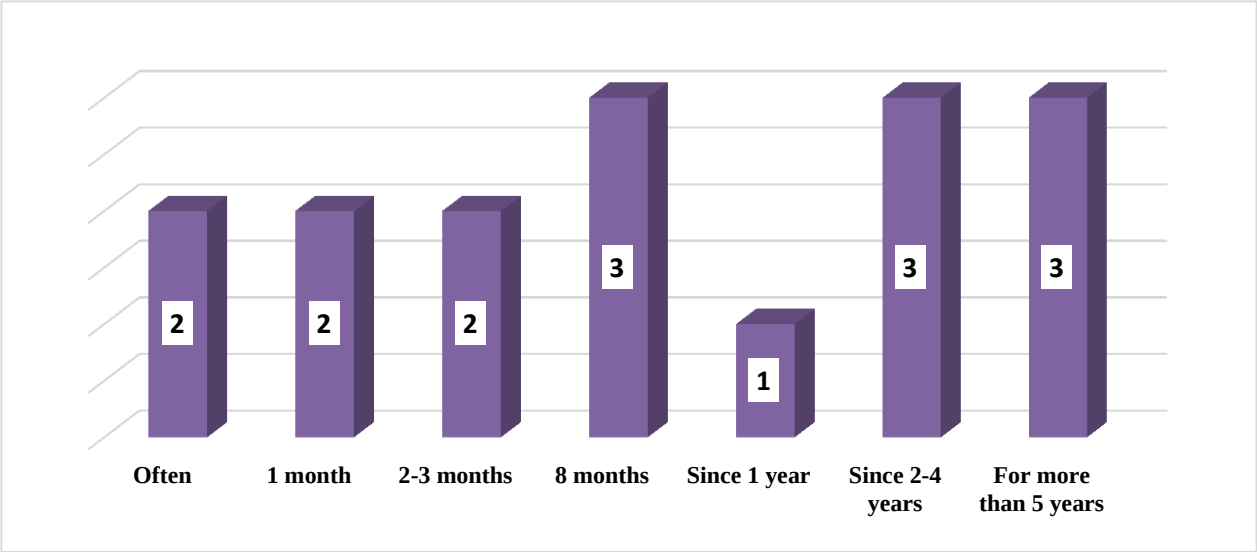

Figure 2: shows since how long students have less than 6 hours of sleep

Figure 3 shows that major causes for decreased sleep among the insomniac students were Stress 14(73.68%), Studies 14(73.68%), Exams 13(68.42%), load shedding 11(57.89%), and events around 6(31.57%).

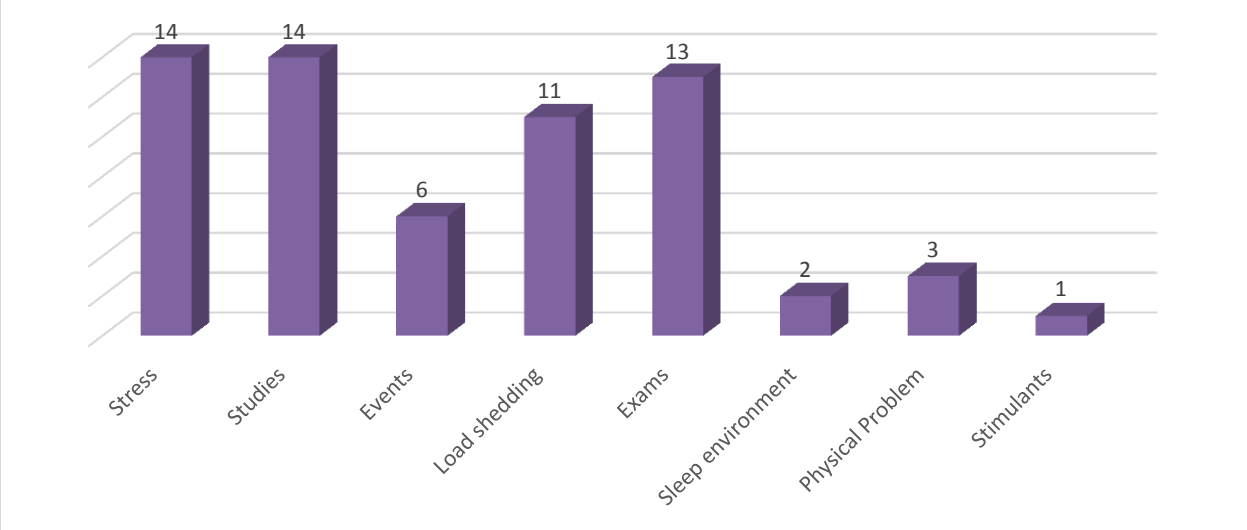

Figure 3: Causes of decreased sleep

Figure 4 shows that the performance and mood of 17 (80.95%) students is affected by insomnia, Also 17 (80.95%) students get irritated on small thing due to lack of sleep. 15 (71.42%) students think that their concentration and retention of lessons in classrooms is greatly affected, 14 (66.67%) students thinks that their studies and diet gets effected due to less sleep, 13 (61.90%) feels that their personal appearance gets effected, 12 (57.14%) students have observed that their punctuality is effected by decreased sleep, whereas 7 (33.33%) have mentioned that their relationship with friends and family gets effected due to decreased sleep.

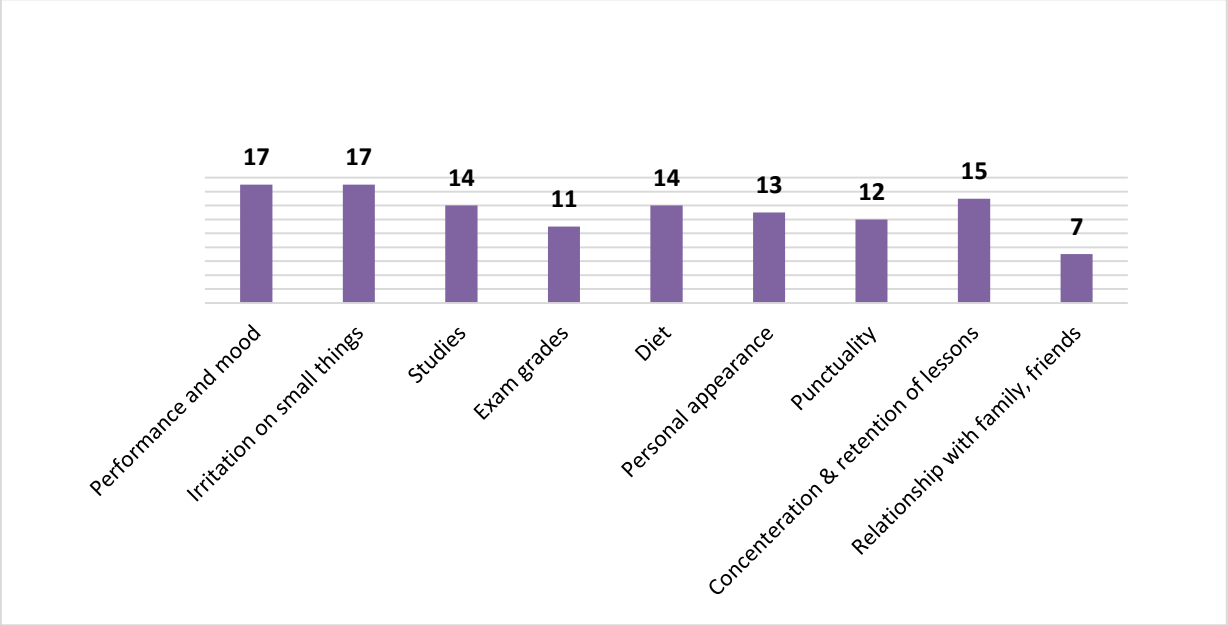

Figure 4: Effects of insomnia on day to day activities of students of RMC

DISCUSSION

The results of the current study showed that sleep pattern of majority of the students was in the normal range, 140 (86.4%) students were having enough sleep according to the criteria for adult sleep by the National Sleep Foundation. The overall prevalence of insomnia was calculated to be 13.6% of which 59.1% were day scholars and 40.9% were boarders.

The occurrence of insomnia in students of Rehman Medical College is higher in day scholars as compared to boarders. In addition the day scholars were found to be more insomniac than the boarders regardless of the age groups and weights. Moreover the study revealed that all the effects are towards the bad side i.e. all events are negatively affecting the student's life.

Mood of 17(80.95%) is affected by insomnia, means they have mood swings at times including getting irritated on small things. This further worsens the situation, especially for day scholars, when their home members are not understanding. In boarders this problem (lack of understanding) is not a major issue, as all of them are in the same shoes.

The study also revealed that 15(71.42%) students think that their concentration and retention of lessons in classrooms is greatly affected. Being sleepy and tired greatly reduces lesson retention, which automatically affects their exam grades, which they later regret.

Present study revealed that 14(66.67%) students think that their studies and diet gets affected due to less sleep. Studies are affected because of decreased retention of lessons. Diet is affected in different ways in people. In some, appetite is elevated while in others the opposite phenomena occur.

This study showed that 13(61.90%) students feel that their personal appearance gets affected. Students specially think that even 5 minutes of extra sleep in the morning makes a difference. In that case, they give less time to themselves, due to lack of time and thus their physical appearance is affected. This also makes them lazy and lethargic. Punctuality on the other hand is also affected. Again students aim to get a few minutes of extra sleep. They prefer utilizing this time in sleep instead of waking up on time and get ready to reach college on time.

Seven (33.33%) students have mentioned that their relationships with friends and family are affected. Again, their non-cooperative behavior further deteriorates the situation and friends themselves are affected. Situation fights can occur on petty issues, making a person bitter and may gain notorious popularity.

Conclusion

Given the magnitude of insomnia amongst the students, it is important that work should be done in order to tackle this health issue, which can have significant consequences in the long term. As lack of sleep will affect students' life, and if it is handled in this age, students can prevent their lives from going towards the life threatening disorders. It is also concluded that prevalence of insomnia was higher in day scholar students as compared to boarder students. Since medical students are over occupied with their studies, efforts should be made to promote better sleep environments that can be conveniently integrated into their daily lives without affecting their medical studies.

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Submitted for Publication: November 22, 2014.

The authors have no conflict of interest. All authors contributed substantially to the planning of research, questionnaire design, data collection, data analysis and write-up of the article as part of a student research team at RMC. The research work was supervised by Mr. Sher Bahadur, Research Officer, Department of Medical Research at RMC.