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A Study on Impact of Insomnia Among Medical Students of Jalal-Abad, Kyrgystan

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ABSTRACT:

Insomnia is a sleep disorder which the person will have difficulty in falling asleep, staying asleep or maintaining sleep which can relatively influence their daily functioning leads to fatigue, irritability and less concentration

Sleep is a essential thing for a person as it might affect the productivity resulting in loss of performance. If a person is not getting enough sleep he might suffer from irregularities in neural development, learning memory, metabolic and cardiovascular functions.

The People having high workload like students, people working for long period of time in a day are most likely to get affected by Insomnia. Insomnia is a common sleep disorder. With Insomnia, Person may have trouble falling asleep, staying asleep, or getting good quality sleep. This happens even if you have the time and the right environment to sleep well. Insomnia can get in the way of your daily activities and may make you feel sleepy during the day.

Methods: A cross-sectional study was conducted to investigate the prevalance of insomnia among medical students over a period of one month, in the month of January in Jalal-abad State university, Kyrgyzstan. The questionnaire in the study was used an online survey platform. The Athens Insomnia Scale (AIS-8) and socio-demographic information were used to collect the information of the respondents.

Result: In the study, majority of the respondents 48.3% were from 3rd year. Regarding age groups, those aged 21-25 make up the largest portion (55.2%) in our study. In terms of gender, male slightly outnumber females (51.7% vs. 48.3%).

The prevalence of insomnia was 27.6% (32/116) indicated that their sleep patterns were not normal, suggesting symptoms of insomnia. age (p=0.021), sex (p=0.017) was found to have correlation with insomnia.

Conlusion: Approximately one-third of the medical students experience insomnia. There should be more awareness of this association as early recognition and treatment may have a favorable inuence on academic performance. The sleep problem in the respondents reported more often in students who experience daily stress which might affect their academic activities.

Keywords: Insomnia, medical students, quality of sleep, exams, academic activities

Introduction

Insomnia can be caused by many factors mainly stress, anxiety, genetic conditions, routine & sleep habits, eating too much late in the evening, Medications, Hormonal Changes. You may have Insomnia if you regularly have the Symptoms like, Having a hard time falling asleep at night,Waking up during the night,Waking up too early, Feeling tired or sleepy during the day ,feeling cranky, depressed or anxious,having a hard time paying attention, focusing on tasks or remembering,making more errors or having more accidents, having ongoing worries about sleep. The factors that increase the risk of Insomnia have been identified, and include Being 60 or older rates of insomnia increase as people age, as sleep patterns and health status tend to change as you age[1].

Being a Woman For reasons that aren't clear, women are more prone to insomnia than men, Drinking too much caffeine or too close to bedtime, drinking alcohol too close to bedtime. Spending too much time in front of a cell phone, computer, or other bright screen before bed. Using digital devices before bed can also be problematic because the bright light they produce can suppress melatonin, a hormone your body produces that tells it when it's time to go to sleep and wake up. Instead of your body getting the signal that it's time to get sleepy, it gets the signal to feel more alert and awake[2], Stress and

anxiety, hormonal changes, Medications Some over-the-counter and easily available drugs can cause insomnia. According to Stanford Medicine, "Sleep deprivation increases the likelihood teens will suffer myriad negative consequences, including an inability to concentrate, poor grades, drowsy-driving incidents, anxiety, depression, thoughts of suicide and even suicide attempts.[3]

There is no main cause of insomnia. However, research suggests that in many people insomnia likely results from certain types of physiological arousal at unwanted times, disrupting normal patterns of sleep. Examples of such arousal can include a heightened heart rate, a higher body temperature, and increased levels of specific hormones, like cortisol. [4]

Insomnia can cause daytime sleepiness and a lack of energy. It also can make you feel anxious, depressed, or irritable. You may have trouble focusing on tasks, paying attention, learning, and remembering. Insomnia also can cause other serious problems. For example, it could make you may feel drowsy while driving. This could cause you get into a car accident [5] .

Erratic schedules and lifestyle adjustments coupled with the strain of daily occupation are partly to blame for the general dissatisfaction with sleep quality and duration, because work obligations reduce hours of sleep among college students. Adequate sleep contributes to a student's overall health and well-being. Students should get the proper amount of sleep at night to help stay focused, improve concentration, and improve academic performance.[6] Sleep deprivation has a negative impact on physical and mental health, affecting the quality of life. It may result in decreased work effectiveness, poor academic performance, psychiatric disorders, impaired immune function, and stress in students.[7]

Rational

There is no acknowledgement of Insomnia in the society. People doesn't know the seriousness of the Insomnia and take it lightly. As our seniors are also being affected by Insomnia and it is getting in the way of their academic performance. It is a major health concern and should be studied closely. So, we would like to address the concerns in our best way possible.

Methods and methodology:

A cross sectional online survey was used to find out the number of medical students suffering from insomnia. Students who were interested for the study were selected from 1st year to 5th year academic year.

The study was conducted with 3 parts of questionnaire. The first one is the socio-demographic information of the respondents. The second section includes the questions from Athens Insomnia Scale (AIS-8) questionnaire were the respondents have to give the information about their sleep on that basis we can estimate the prevelance of insomnia. The third section presented impact of insomnia among the respondents where they were asked 5 questions about the informations about the classes, their moods, concentration and time taken to fall asleep.

Result:

The target populations for the study were the students of Jalal-Abad state university from 1st to 5th year, a structured questionnaire was used for the research. A total of 116 valid responses were included in the present study.

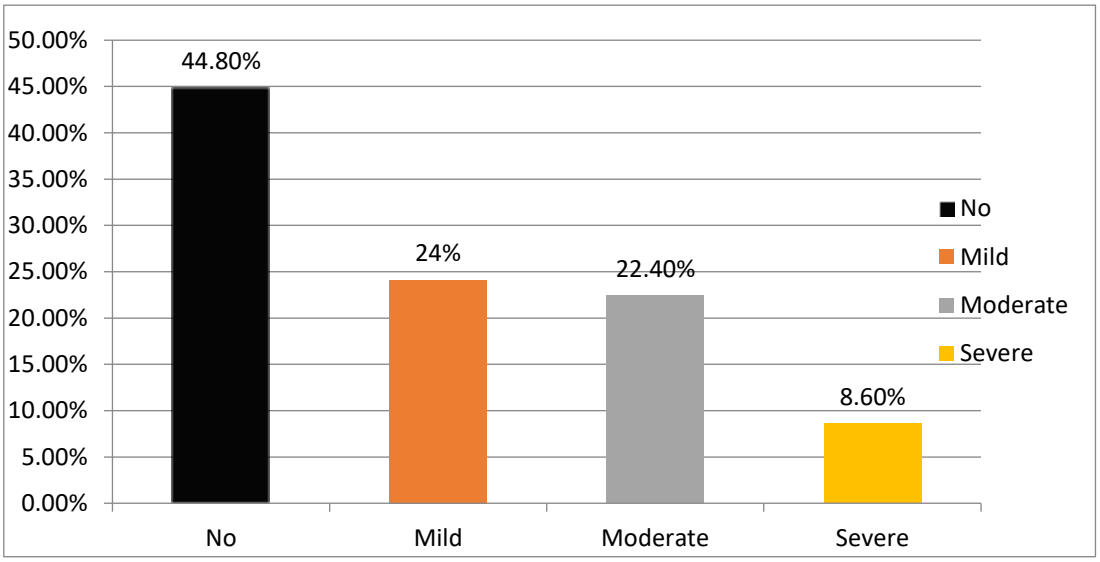
Table: 1 Socio-demographic profile of the respondent

Variables	**Frequency(f) (N=116)**	**Percentage (%)**
Academic Year		
1st Year	8	6.9
2nd Year	40	34.5
3rd Year	56	48.3
4th Year	10	8.6
5th Year	2	1.7
Age Group		
18-20	52	44.8
21-25	64	55.2
Sex		
Male	60	51.7
Female	56	48.3

Nationality		
India	56	48.3
Pakistan	30	25.9
Kyrgyzstan	18	15.5
Bangladesh	10	8.6
Uzbekistan	2	1.7
Marital Status		
Unmarried	96	82.8
Married	20	17.2
Type of Family		
Nuclear	64	55.2
Joint	52	44.8
Parent Education		
Educated	96	82.8
Not well Educated	20	17.2
Family genetic condition		
With genetic condition	16	13.8
Without any	100	86.2

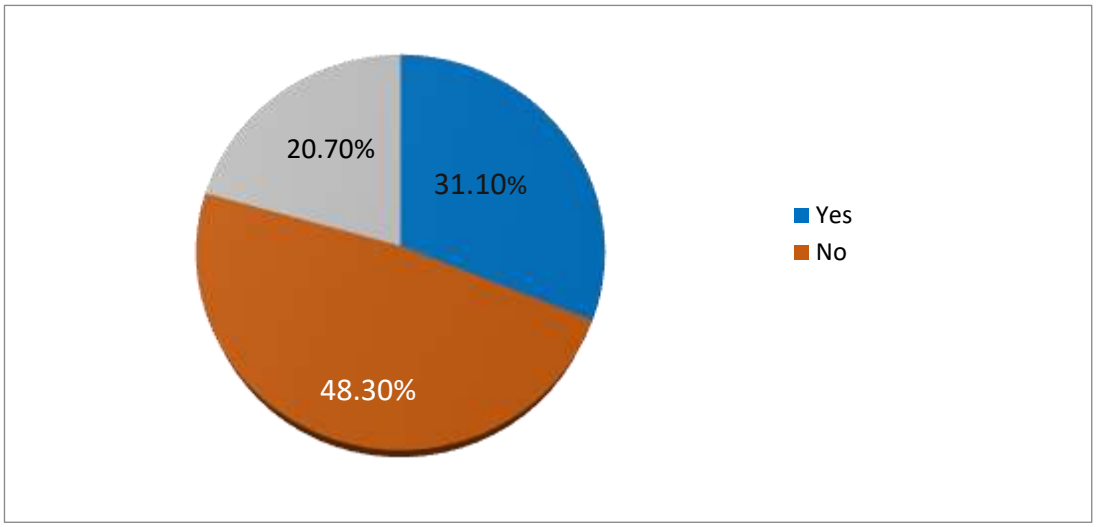
Above table shows the data presents a distribution of variables among 116 respondents. In terms of academic year, the majority are in their 3rd year (48.3%), followed by the 2nd year (34.5%). Regarding age groups, those aged 21-25 make up the largest portion (55.2%). In terms of gender, male slightly outnumber females (51.7% vs. 48.3%), while in nationality, Indian respondents dominate (48.3%). Most of the respondents are unmarried (82.8%) and come from nuclear families (55.2%). Additionally, the majority of the parents are educated (82.8%) and most of the families do not have a genetic condition (86.2%).

Figure.1 Distribution of respondents according to their difficulty in Falling Asleep



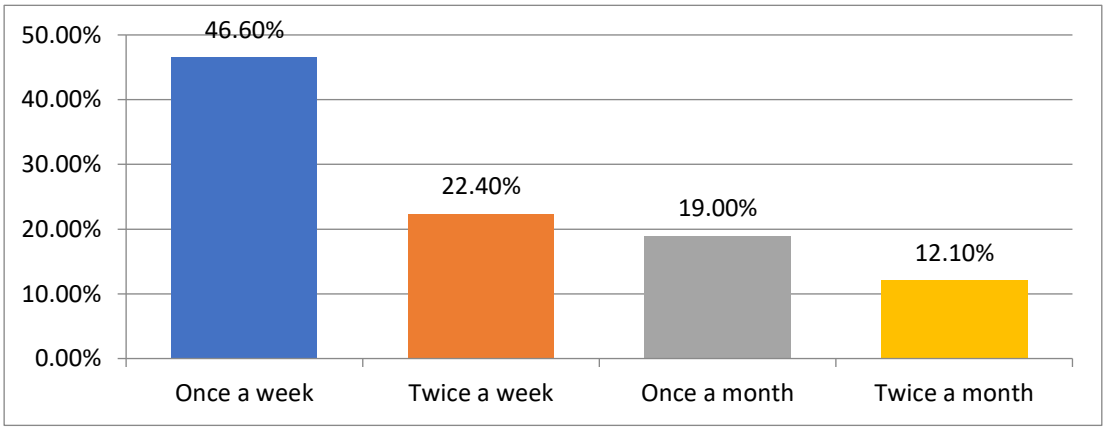
The data suggests that 44.8% (52 individuals) reported no difficulty falling asleep, while 24.1% (28 individuals) experienced mild difficulty, 22.4% (26 individuals) faced moderate difficulty, and 8.6% (10 individuals) reported severe difficulty.

Figure.2: Distribution of respondents based on their overload of studies & Activities.



The pie chart indicates that out of 116 respondents 31.1.% of respondents feel overloaded by studies and other extracurricular activities, while 48.3% do not. Additionally, 20.7% feel very much overloaded.

Figure.3: Distribution of respondents according to their feeling of Homesickness



For those respondents who experience homesickness, the frequency varies. Approximately 46.6% feel homesick once a week, 22.4% twice a week, 19.0% once a month, and 12.1% twice a month.

Table 2: Distribution of respondents based on impact of insomnia

Variables	**Frequency(f)** **N=116 (84/32)**	**Percentage (%)**
Feeling exhausted about class		
Always	20	17.2
Only when the class starts before 9:00 AM	12	10.3
Rarely	50	43.1
Never I always make sure to get plenty of sleep	34	29.4
Feeling sad for no reason		
No	66	56.9
I feel sad less than half the time in a day	18	15.5
Feel sad more than half of the time	24	20.7
I feel sad nearly all the time	8	6.9

Feeling irritable		
No	54	46.6
I feel irritable less than half of the time	30	25.8
I feel irritable more than half the time	20	17.3
I feel extremely irritable near all the time	12	10.3
Changes in ability of concentration and decision making		
My normal ability to work has not changed	32	27.6
I occasionally feel indecisive or find their attention wandering	52	44.8
Struggle to focus most of the time	19	16.4
I cannot concentrate well enough to read or make minor decisions	13	11.2
Time taken to fall asleep		
15 min	44	37.9
30 min	40	34.5
1 Hour	20	17.3
>1 Hour	12	10.3

The responses reflect varying levels of emotional and cognitive experiences among the 116 respondents. Regarding exhaustion, an equal portion (27.5%) feel exhausted either always or only when the classes start early, while a considerable portion feel sad more than half the time in a day(20.7%) and nearly all the time(6.9%). Additionally, about half the respondents (46.6%) report not feeling irritable,(25.8%) feel irritable less than half the time in a day, while (27.6%) experience major degrees of irritability. In terms of changes in concentration and decision making abilities, the majority (44.8%) occasionally feel indecisive or find their attention wandering,and the others (27.6%) have severe problems in concentration . Lastly there is diversity in the time taken to fall asleep, with a significant number (37.9%) reporting 15 minutes, followed by (34.5)% reporting 30 minutes, and total of (27.6%) percentages for longer durations as an impact of Insomnia.

Table 3: Distribution of Responders on the basis of their sleep cycle and their activity during day (n=116)

Variables	**None**	**Mild**	**Moderate**	**Severe**
Sleep induction	93/80.2%	23/19.8%	-	-
Awakening during Night	39/33.6%	51/44.0%	17/14.7%	9/7.8%
Final awakening earlier than desire	49/42.2%	55/47.4%	2/1.7%	10/8.6%
Total sleep Duration	43/37.1	59/50.9	9/7.8	5/4/3
Overall Quality of sleep	34/29.3	62/53.4	13/11.2	7/6.0
Sense of wellbeing during the day	36/31.0	61/52.6	13/11.2	6/5.2
Functioning during the day	46/39.7	54/46.6	15/12.9	1/0.9
Sleepiness during the day	38/32.8	60/51.7	10/8.6	8/6.9

Regarding sleep induction, the majority (80.2%) reported none, indicating successful sleep initiation, while 19.8% reported Mild difficulties. In terms of nighttime awakenings, a significant portion (33.6%) experienced none, while 44.0% reported Mild occurrences, 14.7% Moderate, and 7.8% severe awakenings. Similarly, for instances of final awakening earlier than desired, 42.2% reported none, 47.4% they woke up a little earlier, 1.7% markedly earlier, and 8.6% much earlier. When assessing total sleep duration, 37.1% experienced no problems, 50.9% reported Mild deviations from desired duration, 7.8% Moderate, and 4.3% severe deviations.

Overall sleep quality was predominantly reported as satisfactory (29.3%), with 53.4% reporting Mild issues, 11.2% Moderate, and 6.0% Severe. During the day, sense of wellbeing was reported as normal by 31.0%, with 52.6% reporting mild issues, 11.2% Moderate, and 5.2% Severe.

Functioning during the day saw 39.7% reporting normal, 46.6% reporting Mild issues, 12.9% Moderate, and 0.9% severe difficulties. Finally, sleepiness during the day was reported as none by 32.8%, with 51.7% reporting Mild sleepiness, 8.6% Moderate, and 6.9% severe sleepiness.

This data highlights a range of sleep-related challenges and their impact on daytime functioning, providing valuable insights into the prevalence and severity of sleep disturbances within the surveyed population.

Table 4: Distribution of respondents according their condition on Insomnia

Responses	**Frequency(n=116)**	**Percentage (%)**
Normal	84	72.4%
Not Normal (Insomnia)	32	27.6%

Out of a total of 116 responses, the majority, comprising 84 individuals (72.4%), reported experiencing normal sleep patterns. However, 32 respondents (27.6%) indicated that their sleep patterns were not normal, suggesting symptoms of insomnia. This data indicates that while a significant portion of the population surveyed perceives their sleep as normal, a notable proportion experiences disruptions to their sleep that align with characteristics of insomnia. Understanding this distribution sheds light on the prevalence of sleep disturbances within the sample and underscores the importance of addressing sleep disorders for overall well-being and health maintenance.

Table 5: Correlation between socio-demographic and state of insomnia

Characteristic	**Prevalence of Insomnia(n=116)**		**P-value**
	Normal	**Not Normal (insomnia)**	
Sex			0.021*
Male	44	40	
Female	16	16	
Age			0.017*
18-20	72	27	
21-25	12	5	
Family Type			0.028*
Nuclear Family	58	23	
Joint Family	26	9	

** Statistically Significiant*

The data indicates statistically significant associations between sex, age, family type, and the occurrence of insomnia, as denoted by the respective P-value. In terms of sex, the prevalence of insomnia differed significantly between males and females, with a P-value of 0.021. Specifically, 44 males and 16 females reported normal sleep, while 40 males and 16 females experienced insomnia. Similarly, age showed a significant correlation with insomnia, with a P-value of 0.017. Within the age groups surveyed, those between 18-20 years old exhibited a higher prevalence of insomnia (27 individuals) compared to those aged 21-25 (5 individuals). Moreover, family type demonstrated a statistically significant association with insomnia, with a P-value of 0.028. Among respondents from nuclear families, 58 reported normal sleep patterns, while 23 experienced insomnia. In contrast, among those from joint families, 26 reported normal sleep, while 9 experienced insomnia. These findings underscore the influence of socio-demographic factors on the prevalence of insomnia within the population studied, providing valuable insights for further exploration and targeted intervention strategies.

Discussion

The research on Insomnia and it's impact doesn't not have the attention it's need in the world, there are some research studies conduct in few places about this, so we have compared some of them for you. Our findings help fills a gap in our understanding of insomnia and it's impact among medical students

Sleep patterns can negatively impact the academic performance, attention span and memory. Various emotional factors like worry about studies, homesickness, stress can significantly affect the sleep quality of students. Moreover other socio-demographic factors and lifestyle are also having a notable correlation between Insomnia. The research presents a comprehensive overview of the sleep patterns, habits and perceptions of students of Jalal-abad state university.

A total of 116 respondents of Jalal-abad state university were chosen, 84 participants (72.4%) reported regular sleep habits. Meanwhile, 32 individuals (27.6%) described experiencing sleep issues, possibly pointing to insomnia. A previous study conducted in majmaah university results showed that nearly half of the students had subthreshold insomnia, 17.4% had moderate clinical insomnia, and 3.7% had severe insomnia[8]

In our study around 45% reported no difficulty in falling asleep or staying asleep conveys 55% have difficulty in both. The majority sleep from 12 to 2 am (48.3%) and wake up without disturbances. Similarly a study conducted in Germany examined people's experience 59.3% in difficulties initiating sleep and 59.3 % had difficulties in maintaining sleep. [9]

According to the findings of our study about 55.2% of students are from (21-25 years) age group while 44.8% from (18-20 years) age group are suffering from insomnia. And based on an earlier study conducted in Karachi, Pakistan 49.9% of students are from (21-25 years) and 50.1% falls under (17-20 years) age group which is almost similar with our study [10]

This study discovered that out of 84 males 47.6% have insomnia and from 32 females 50% of them are having insomnia which shows a slight increase of insomnia for female students. And the prevalence of karachi insomnia was found to be 31.3% of whole population among 40% were female students and 32.8% male students [12] . Similarly in another study prevalence of insomnia was compared between females and males population, results gives a significant high prevalence among female population[11].

In a Research study conducted in China to find the Prevalence and factors associated with insomnia among medical students during the COVID-19 pandemic, 34.0% were male and 66.0% were female among 2289 participants With Pvalue 0.801 .In our Research study, males slightly outnumbered females with 51.7% males and 48.3% females among 116 respondents with Pvalue 0.021. [12]

The study underscores the importance of addressing sleep issues among the university students, existing literature, highlighting the widespread nature of sleep problems among students.

Conclusion:

Insomnia, affecting approximately one-third of medical students, represents a significant concern within this population. The implications of this prevalence extend beyond mere sleep disturbances, as insomnia can profoundly impact academic performance and overall well-being. Therefore, there is a critical need for heightened awareness of this association among medical students, faculty, and healthcare professionals.

Early recognition and intervention are essential components in addressing insomnia among medical students. By identifying and addressing sleep issues promptly, educators and healthcare providers can potentially mitigate the negative consequences on academic performance. Moreover, implementing strategies for promoting healthy sleep habits and stress management techniques can be beneficial in alleviating insomnia symptoms and improving overall student well-being.

Furthermore, it is noteworthy that insomnia appears to be more prevalent among medical students experiencing daily stressors. This correlation underscores the intricate interplay between psychological factors and sleep disturbances. Chronic stress can disrupt sleep patterns, exacerbating insomnia symptoms and further compromising academic activities.

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