Insomnia among University Students: Causes and Effects

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Abstract: The current study aimed to find out the impact of insomnia on students' academic performance and also discussed whether there is any difference found among the level of insomnia by gender. Using quantitative research design, 100 male and female, university students were chosen using purposive sample technique from 04 universities of Peshawar. Self-structured closed-ended questionnaire based on five point Likert's scale was design. SPSS 23 was utilized to analyze the data. For testing hypotheses regression and t-test was applied. The main findings of the study were that there is no difference in level of insomnia by gender wise. And insomnia has a very strong effect on students' academic performance. The study also concluded that depression, anxiety, workload, excessive use of technology before going to bed like, listening to music, using social media and playing video games also contribute to inadequate sleep. It was recommended in the study that proper check and balance should be maintained by the parents, elders or caretakers and students should be allowed for using social media for a limited time.
Key Words: Insomnia, academic performance, causes and effects, University students

1. Introduction

21st century is characterized by a number of experiments and the inventions as a result of all these experiments, to make human life more prospers, luxurious and comfortable. But everybody is well aware of the fact that for enjoying all the blessings and facilities of life each individual needs to have a healthy life, mind and healthy body. In medical perspectives it is considered as necessary that everybody should take proper sleep, in order to live a fit mental and physical life. As mentioned earlier the present era has brought a lot of facilities to the lives of human beings but also it introduces us with several kinds of problems, anxieties and diseases. As discussed for good mental and physical life doctors recommend proper sleep but the present era and its inventions changed people lives and thus also changed their everyday life activities and natural patterns, including their sleep patterns, thus leading them towards depressions, anxieties and sleep disorders like **insomnia.** It's a situation of non- restorative, inadequate and insufficient sleep pattern, despite of having ample of time in bed. Good sleep is imperative for sound mind and body.

1.1 Insomnia

Sleep disorders, according to the National Institutes of Health Sleep Disorders Research Plan (2011), (NIHSDRP), are "Chronic or severe sleep disorders are caused by difficulty beginning and/or gaining sleep, and/or complaints about the relative quality of sleep that occurs daily and result in poor relationships with others weak memory. In medical literature, the term insomnia is used in different

ways to describe a variety of conditions. A person's report of trouble in falling asleep or staying asleep is the most common way in which insomnia is defined(Roth, 2007).

Medical students suffer from consistently higher levels of psychological distress when compared to the general population, according to a systematic review that included data from 40 studies conducted in Canada and the United States. In addition to sleep problems, high levels of emotional exhaustion have been linked to other health problems. The relationship, on the other hand, may be mutual. According to a recent study on burnout and sleep problems in university students, higher levels of emotional exhaustion and EDS were found to have an impact on one another. The academic performance of medical students appears to be influenced by, as well as influenced by, their sleep patterns. According to medical students who participated in a qualitative study that looked at factors that influence academic achievement among medical students, the management of sleep deprivation was identified as being critical for academic success(Alsaggaf et al., 2016).

1.2 Literature Review

In this study the researcher aimed to look and investigate insomnia among university students and also find out the root causes of the disorder and also to investigate how this affect students and their academic performance at university level does. As university level is a stage for young students where they sometimes face sleep difficulties and other sleep related problems due to a number of factors, including their personal and environmental and institutional factors. Various researchers have described and mentioned different causes of insomnia and less sleep among university students. Now -a -day's poor sleep is considered as an obstacle in the way of students' progress. It must be treated at early stage in order to avoid its devastating effect on students' academic performance(Ohayon, 2008). During the daytime, excessive drowsiness makes it difficult to be alert and active in performing important daily activities. (El Hangouche et al., 2018). People who are excessively sleepy during the daytime are more likely to have poorer sleep quality, which can have a negative impact on their behavior and work performance(Bonnet & Arand, 1995).

In addition to physical illnesses and sleep disorders, work commitments, social and home obligations and a person's living style can all contribute to chronic sleep deprivation (Banks & Dinges, 2007). Insomnia can cause long-term physical and mental tiredness as well as changes in mood, concentration, and memory. It is also effects physical health of individuals combined with a decrease in intellectual abilities. There are many factors due to which the students become victim of insomnia such as academic overload, constant pressure to succeed, and anxiety about the future, the prevalence of sleep disorders (SDs) is on the rise among college students. The most significant predictors of insomnia were found to be socio-demographic characteristics (Ohayon, 2002). Apart from that, a large number of studies have revealed a significant incidence of sleep disorders among clinically worried adolescents, in addition to heightened levels of anxiety and stress in university students(Royal-College-of-Psychiatrists, 2011).

A general consensus based on different studies of the population has developed that approximately 30% of multiple samples of adults from different countries report one or more symptoms of insomnia: difficulty inception of sleep, difficulty staying awake excessively early and in some cases poor sleep quality(Ancoli-Israel & Roth, 1999).

Bielefeld University Germany, in a study conducted by its researchers showed that almost 60% of the students are not taking good quality of sleep while in 7.7% of the students have all the possible conditions to have insomnia disorder. Having problems in sleep affects the life of students, such as, the grade point average. It is because of irregular daily activities, exams, part time jobs and chronotype changes, the students are in dire need of a special treatment for developing a good quality of sleep(Angelika, Anja, & Merle, 2017). Students are facing new challenges when they start their graduation at university. These are an increase in their self-dependence, adjusting in new friend's circle,

adopting new society, living abroad from home, maintaining a good academic record, and a greater exposure to drugs and narcotics. 41% out of 90% students having roommates cannot have proper sleep because of the noise produced by others. Sleep timing on working days and weekends mostly have a difference of 1 to 2 hours. All these challenges are causing sleep disturbances in students(Angelika et al., 2017).

In addition, other factors which affects the quality of sleep and adversely affects the cognitive functions of human i.e. processing of information, accumulation of intellectual data and learning process comprising of physiological factors, school timings and working schedules(Gharagouzlo et al., 2016). Moreover, low quality of sleep has a very adverse impact on academic and learning abilities, such as, problem solving abilities in mathematics. Along with that, the low and poor quality of sleep reduces the memory and cognitive abilities(Pilcher & Walters, 1997), viz a viz increased risk of suicide, mental issues, and increased accident ratio while driving(Brick, Seely, & Palermo, 2010).

A study performed by Buboltz et al., it has been shown that 31% of all students are facing tiredness in the morning. Similarly, another study conducted by (Angelika et al., 2017) shows that those who are not taking enough sleep have weaker functioning ability at day and a lower GPA because the sleep wake-up timings has shown a significant variance in GPA. Apart from academic achievements, improper sleep of graduation students is causing mental health problems. These problems include depression, anxiety, fatigue, stress, and a lower standard of living (Abdel-Khalek, 2009).

Similarly, the academic failure is also caused by excessive classes, adopting new social circle, shifts in the environment of sleep, attending night parties and facing noise produced by others at night(Eslami Akbar, 2012). Additionally, other factors which can be the cause of insomnia are lower lifestyle standards, marital status, chronic illness, weaker physical conditions, age, overloaded academic activities, childhood adversities, and inappropriate sleep (Haile, Alemu, & Habtewold, 2017).

To improve the academic activities and achievements proper sleep-wake timings, having time for leisure, and high living standards are required(Eliasson, Lettieri, & Eliasson, 2010). The students having enough sleep have good academic records than those who haven't proper sleep. Moreover, the one holding high academic records are the ones who have an early bed and wake-up timings as compared to others(Eliasson et al., 2010). Thus, to increase academic performance and reduce stress, the identification, minimizing and avoiding the factors leading to the causes of insomnia is needed(Rodrigues et al., 2002).

1.3 Statement of the Problem

Insomnia is a sleep disorder which is characterized by difficulty in sleep or days sleep. Insomnia is a sleep disorder and an issue that are affecting the university students and their academic performance. The current study aimed at finding out insomnia among university students. Moreover, the study also aimed to find out and indicate whether there is any difference found among the level of insomnia by gender. Furthermore, the study focuses and aimed at finding the effects of insomnia among university students (and over their academic performance).

1.4 Objectives of the Study

Main objectives of the current study are

1) To find out the causes of insomnia among university students.
2) To find out the effects of insomnia on academic performance of university students.
3) To examine whether there's any difference found in the level of insomnia gender wise.

1.5 Hypotheses

H_{01}: There is no effect of insomnia on students' academic achievement.

H_{02}: There is no difference in level of insomnia by gender.

1.6Significance of the Study

Sleep is termed as key to good mental and physical health. The decrease in sleep and change in sleep pattern causes the individual unfit both physically and to some extent mentally. Day sleep, sleeplessness or insomnia could be seen at peak in young generation especially in university students, leading them towards various difficulties. The current study is significant to find out the causes of the insomnia among university students. The study is important for the reason that it reveals the preliminary causes of insomnia among university students, the study also describes how sleeplessness affects the students at university level mentally and physically, also revealing its impact on their academics in the long term. The study is worth reading and significant for the reason that it shows remedial measures to overcome the disease.

1.7Delimitation of the Study

The study at hand was delimited to the territory of University of Peshawar, Islamia College University, and Engineering and Technology, Peshawar. Only BS students of the said Institutions were included in the study.

2. Methodology

The study was quantitative in nature and thus to collect data from the respondents a survey questionnaire was used, focusing on various aspects of insomnia, its causes and effects. The respondents were informed about the nature and purpose of the study and were guided accordingly to fill the questionnaire.

2.1 Population

All Students at undergraduate level from University of Peshawar, Islamia College University, Agricultural University, and University of Engineering and Technology were taken as population of the study.

2.2 Sampling

Purposive sampling technique was used to collect data from the 100 respondents. Only those students were chosen who had been suffering from insomnia. The selected students were approached by the researcher personally and recorded their responses at pre-designed questionnaire.

2.3 Data Collection Tool

A self-structured questionnaire contains 21 statements were designed for the collection of data regarding causes of insomnia among university students and its effects on academic performance of university students. The questionnaire was based on 5 Likert's scale ranges from SA to SDA, where SA represents Strongly Agree (a higher level of agreement) and SDA represents Strongly Disagree (least level of agreement).

2.4 Data Analysis

Data collected was analyzed using software Statistical Package for Social Sciences (SPSS-23). Keeping in view the hypotheses, objectives and literature of the study statistical model was used to obtain the results. The results were presented in a tabulated form.

Table-1 To Find Out the Effects of Insomnia on Academic Performance of University Students

S.No.	Statements	SA	A	UD	DA	SDA
1	Due to less sleep, I feel drowsiness throughout the day.	48 (48%)	36 (36%)	00 (00%)	10 (10%)	6 (6%)
2	Due to incomplete or less sleep I often find it difficult to focus on studies.	38 (38%)	37 (37%)	7 (7%)	14 (14%)	4 (4%)
3	I felt depressed throughout the day due to less sleep.	23 (23%)	44 (44%)	5 (5%)	18 (18%)	10 (10%)

		SA	A	UD	DA	SDA
4	Late going to bed and early waking affect my studies and studies schedule.	24 (24%)	45 (45%)	17 (17%)	9 (9%)	5 (5%)
5	Due to less sleep, it is difficult for me to perform daily life activities properly.	26 (26%)	45 (45%)	8 (8%)	14 (14%)	7 (7%)
6	Not taking proper sleep has affected my cognitive skills and memory.	19 (19%)	41 (41%)	19 (19%)	13 (13%)	7 (7%)
7	Drowsiness and day sleep decreases my problem-solving abilities.	16 (16%)	49 (49%)	9 (9%)	18 (18%)	7 (7%)
8	Students with earlier bedtime and waking time have high academic performance.	33 (33%)	29 (29%)	17 (17%)	9 (9%)	11 (11%)
9	Insomnia/less sleep has a negative impact on my health and academics.	27 (27%)	45 (45%)	15 (15%)	7 (7%)	5 (5%)
10	Sleep deprivation causes fatigue and headache lead to inattentiveness during teaching learning process.	41 (41%)	41 (41%)	8 (8%)	5 (5%)	4 (4%)

Interpretation

Table 1 comprises of 10 statements dealing with the effects of insomnia on students and their academics. Statement- 1 indicates that majority (84%) of the respondents agreed that due to less sleep, they feel drowsiness throughout the day. Statement- 2 indicates that majority (75%) of the respondents agreed that due to incomplete or less sleep they often find it difficult to focus on their studies. Statement -3 represents that majority (67%) of the respondents agreed that they felt depressed throughout the day due to less sleep. Statement -4 showing that majority (69%) respondents agreed that late going to bed and early waking affect their studies and studies schedule. Statement -5 reveals that majority (71%) respondents agreed that due to less sleep, it is difficult for them to perform daily life activities properly. Statement- 6 indicates that majority (60%) respondents agreed that not taking proper sleep has affected their cognitive skills and memory. Statement- 7 indicates that majority (65%) respondents agreed that drowsiness and day sleep decrease their problem-solving abilities. Statement-8 reveals that majority (62%) respondents agreed that students with earlier bedtime and waking time have high academic performance. Statement -9 shows that majority (72%) respondents agreed that insomnia/less sleep has a negative impact on their health and academics. Statement -10indicates that majority (82%) respondents agreed that sleep deprivation causes fatigue and headache lead to inattentiveness during teaching learning process.

Table-2.To Find Out Causes of Insomnia Among University Students

S.No	Statements	SA	A	UD	DA	SDA
1	Excessive use of social media till late night led to insomnia.	39 (39%)	43 (43%)	10 (10%)	6 (6%)	1 (1%)
2	Depression and anxiety among university students also lead to sleep deprivation and insomnia.	32 (32%)	44 (44%)	11 (11%)	11 (11%)	1 (1%)
3	Workload and exam pressures also cause students to have less sleep at night.	35 (35%)	37 (37%)	10 (10%)	13 (13%)	4 (4%)
4	Frequent awaking at night and difficulty to fall asleep again.	16 (16%)	44 (44%)	18 (18%)	20 (20%)	1 (1%)
5	Physical discomfort due to illness, injuries or medications.	15 (15%)	51 (51%)	22 (22%)	10 (10%)	1 (1%)
6	Sleep loss due to noisy and uncomfortable	27	56	5	8	3

		environment, or uncomfortable sleeping conditions.	(27%)	(56%)	(5%)	(8%)	(3%)
7	Going late to bed and waking earlier for classes before obtaining sufficient sleep.	18 (18%)	40 (40%)	25 (25%)	13 (13%)	3 (3%)
8	Inadequate sleep hygiene is one of the major causes of sleep deprivation in college students.	18 (18%)	50 (50%)	23 (23%)	5 (5%)	3 (3%)
9	Excessive use of technology before going to bed like, listening to music, using social media and playing video games also contribute to inadequate sleep hygiene and led to sleep deprivation.	31 (31%)	45 (45%)	12 (12%)	8 (8%)	3 (3%)
10	Late night socializing has a major role in less sleep of students.	28 (28%)	56 (56%)	5 (5%)	8 (8%)	2 (2%)
11	Irregular sleep schedules also have role in insomnia.	32 (32%)	44 (44%)	13 (13%)	9 (9%)	1 (1%)

Interpretation

Table 2 comprises of 11 statements dealing with causes of insomnia among university students. Statement- 1 indicates that majority (82%) respondents believed that excessive use of social media till late night led to insomnia. Statement- 2 indicates that majority (76%) respondents believed depression and anxiety among university students also lead to sleep deprivation and insomnia. Statement- 3 shows that majority (72%) respondents consider workload and exam pressures also a cause of less sleep among students at night. Statement- 4 indicates that majority (60%) respondents face frequent awaking at night and difficulty to fall asleep again. Statement- 5 showing that majority (66%) respondents agreed that Physical discomfort due to illness, injuries or medications also led to sleep loss. Statement -6 shows that majority (83%) respondents confirms that they loss their sleep due to noisy and uncomfortable environment, or uncomfortable sleeping conditions. Statement-7 reveals that majority (58%) respondents consider going late to bed and waking earlier for classes before obtaining sufficient sleep a cause of insomnia among university students. Statement- 8 indicates that majority (68%) respondents agree that inadequate sleep hygiene is one of the major causes of sleep de privation in college students. Statement- 9 indicates that majority (76%) respondents agreed that Excessive use of technology before going to bed like, listening to music, using social media and playing video games also contribute to inadequate sleep hygiene and led to sleep deprivation. Statement -10 reveals that majority (84%) respondents agreed that late night socializing plays a major role in less sleep among students. Statement -11 indicating that majority (76%) respondents agree that irregular sleep schedules also have role in insomnia.

Hypotheses Testing

H_{01}: There is no difference in level of insomnia by gender (T-test).

Table 3Group Statistics

	Gender	N	Mean	Std. Deviation	F	T	Sig
In	Male	50	2.2190	0.69946	0.000	0.398	0.984
	Female	50	2.1657	0.64063			

Table-3 shows T. Test analysis for testing hypothesis.

Interpretation

The result shows that the P-value is 0.984, is insignificant at level of **0.05**. Hence, the result showed there is no difference in level of insomnia by gender. It is therefore concluded that the null hypothesis is accepted.

H_{02} There is no effect of insomnia on students' academic achievement (Regression).

Table 4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Anova	Beta	Sig
1	0.394[a]	0.155	0.151	0.74651	32.372	-.394	0.000

Table-4shows Regression analysis for testing hypothesis.

Interpretation

For finding out whether there is a significant influence of the independent variable (*insomnia*) on cognitive variable (academic achievement), the findings indicate that the analysis is significant **(F=32.372)**, with **p=0.000**. The result also shows that the linear combination of two variables extraneous and cognitive variables (*extraneous variable Insomnia on cognitive variable academic achievement*) - is having significant correlation coefficient **(R= 0.394)**, which shows strong influence between extraneous variables and cognitive variable; thus, the model has significant influence. Moreover, R^2.**0.155** indicates that about 15% of the difference is found in the model for the respondents, with a beta value of -**0.394**, reporting the damaging effects of insomnia on academic performance of university students. So, the HO_2 is rejected.

Discussion

Insomnia is characterized by the lack of proper sleep or sleep disruptions and day sleepiness due to any environmental stimuli, resulting poor memory, and attention towards several things leading to day drowsiness, resulting adverse effects on physical and mental health of the individual. Based on data analysis a number of findings regarding causes of insomnia among university students and its impact on their academic performance were emerged and some of these are discussed as under.

The study was conducted to examine the root causes of insomnia among university students. The study was limited to BS level students of four major universities of district Peshawar. The data collected from the respondents was analyzed and the results obtained come up with several causes of the disease among university students. The study emerged with the causes of insomnia including the excessive use of modern technologies and social media by university students; we may also call it the basic and major cause of insomnia among university students is spending more time in front of screen. Moreover, depression, anxiety and workload also lead to less sleep and sleep depravedness among these students contributing to the prevalence of insomnia. Excessive use of technology before going to bed like, listening to music, using social media and playing video games also contribute to inadequate sleep hygiene and led to sleep deprivation. Irregular sleep pattern, day sleep and physical discomfort due to illness, injuries or medications also cause the students to have incomplete or improper sleep pattern. The results obtained are aligned with the study of Chowdhury, Ghosh and Hassan (Chowdhury, Ghosh, Hasan, Khandakar, & Azad, 2020) reporting stress, late night work, work load exposure to technology and noise and late night socializing as the causes of insomnia among university students.

Gaultney (2010)reported that busy class schedule, late night social interaction or the new social environment, experiencing noise as the causes of less sleep among students, supporting the findings of the current study. Furthermore, (Brick et al. (2010)) finds poor living style as the cause of poor sleep pattern among university students. The findings of the current study align the previous studies for the

reason that have variable of the same nature i.e., university students although there exist geographical limitations, but the study reveals that university students, of the present era have almost same difficulties of getting proper sleep.

The study also focuses on the effects of insomnia over university students and their academic performance. The results report the effects of insomnia including drowsiness during teaching learning process, loss of focus and attention and adverse effect on memory and mental health of the students. Moreover, the disorder also led to decrease in problem solving abilities of the students, fatigue and headache lead to inattentiveness during teaching learning process, and a negative impact on cognitive and memory skills of the students. In order to study and analyze the effects of insomnia on students' academic performance regression test was performed and the findings indicate that the analysis is significant (**F=32.372**), with **p=0.000**. The result also shows that the linear combination of two variables extraneous and cognitive variables (*extraneous variable Insomnia on cognitive variable academic achievement*) - is having significant correlation coefficient (**R= 0.394**), which shows strong influence between extraneous variables and cognitive variable; thus, the model has significant influence. Moreover, R^2.**0.155** indicates that about 15% of the difference is found in the model for the respondents, with a beta value of **-0.394**.

The study was undertaken to find out the causes of insomnia among university students and its effects on their academic performance. The study was generalized to both male and female students at universities but still have limitations. The study was limited to BS students of four universities and was also limited to the causes and effects of the said. Future researchers may also generalize the study to other perspectives and to public.

Conclusion

Despite of all the limitations and deficiencies the study reported the prevalence of insomnia among university students. Moreover, the study presents several/basic causes of insomnia among university students. The study also concluded that university students have high level of insomnia and face higher level of sleep deprivation as compared to other people. The study also concluded that both male and female university students have almost same level of insomnia and face the same difficulties in getting proper sleep. The study concluded that insomnia is prevailing and important issue among university students, affecting university students mentally, physically and academically. Therefore, serious steps need to be taken to overcome the problem timely.

Recommendations

- Sleep schedule may be developed and defined by the students and may require to follow it strictly.
- Late night socialization may be restricted to have proper and full sleep.
- Excessive use of technologies may be restricted during nighttime to sleep well.
- Depression and anxiety of exams and other related issues regarding studies may be handled properly.
- Sleep environment could be made comfortable by reducing or removing noise producing elements.

Recommendations for Future researchers

Researchers may conduct the same research in new context and culture through mixed research method, by comparing public and private universities and may also include under graduate students.

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