

Prevalence of insomnia and anxiety in university students during the COVID-19 lockdown: A cross-sectional study

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ABSTRACT

Background: The world is facing COVID-19 pandemic and almost 70% of the world had gone under Lockdown. People are facing stress, insomnia and anxiety. The lack of basic awareness and spread of fake news are common causes of all these issues. This study was done to determine the prevalence of insomnia and anxiety in medical and non-medical students.

Subjects and methods: Subjects were approached through friends in universities using WhatsApp. People having insomnia and anxiety before quarantine were excluded from this study. People using anti-depressants and anti-psychotics before quarantine were also excluded from this study. A descriptive cross-sectional study was conducted among 965 students of medical and non-medical universities in the cities of Lahore, Rawalpindi and Islamabad. Consent was taken for using the Hamilton Anxiety Rating Scale and Insomnia Severity Index for scoring of anxiety and insomnia respectively. An online questionnaire made in Google forms was used for data collection. Independent t-tests, Pearson Correlation and Regression analysis were performed using SPSS v25.

Results: Increased prevalence of anxiety and insomnia in non-medical students as compared to the medical students was observed. There was statistically significant strong correlation between anxiety and insomnia of the enrolled subjects ($r=0.742$, $p<0.001$). A linear regression equation was formulated. Increased prevalence of anxiety and insomnia in females was also determined.

Conclusion: Non-medical students, compared to medical students, among which, females, compared to males, were more likely to suffer from anxiety and insomnia during lockdown.

Keywords:

Insomnia, Anxiety, COVID-19, Medical Students, Non-medical students

INTRODUCTION

The World Health Organization defined the SARS-CoV-2 virus outbreak as a severe global threat.¹ COVID-19 which is currently affecting more than 146 territories, states and countries had filled common people with increasing anxiety.² World is in fact in a pandemic of anxiety and stress associated with the disease. People are stressed about themselves, their family and finances in an era of inflation and unemployment.³ At large, all of the studies that have examined the psychological disorders during the COVID-19 pandemic have reported that the affected individuals show several symptoms of mental trauma, such as emotional distress, depression, stress, mood swings, irritability, insomnia, attention deficit hyperactivity disorder, post-traumatic stress, and anger.⁴⁻⁶

The combination of anxiety and stress reduced the positive effects of social capital on sleep quality leading to insomnia in both young and adult people.⁷ It seems reasonably likely that under the conditions of high uncertainty, poor information, rapid change and emotional stress that exist during an infectious disease outbreak that people have to cope with anxiety and insomnia.⁸ This study aims to evaluate coping abilities of medical and non-medical students against anxiety and insomnia.

SUBJECTS AND METHODS

A descriptive cross-sectional study was conducted among the medical and non-medical students of both genders starting from April 2020 till June 2020. The Subjects were enrolled in medical and non-medical universities of Islamabad, Rawalpindi and Lahore. A questionnaire made in Google forms was sent into WhatsApp groups of Universities and Students were encouraged to fill the forms enthusiastically. The questionnaire consisted of the basic demographic details and questions extracted from Hamilton Anxiety Rating Scale (HAM-A)⁹ for the scoring of Anxiety and

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Insomnia Severity Index¹⁰ was used for the scoring of Insomnia after taking permission from the developer. The reliability of the questionnaire of anxiety was determined by using Cronbach's Alpha whose value was 0.876 (>0.7) making the questionnaire significantly reliable, for its use in this study setting. A five-Likert scale was used for measuring the scores of the questionnaire. According to the Hamilton Anxiety Rating Scale each item of anxiety was scored on a scale of 0 (not present) to 4 (very severe), with a total score range 0-56, where <17 indicated mild severity, 18-24 mild to moderate severity and 25-30 moderate to severe. On the other hand, the insomnia severity index scores were 0-7 for no clinically significant insomnia, 8-14 for sub-threshold insomnia, 15-21 clinical insomnia (moderate severity) and 22-28 clinical insomnia (severe).

SPSS 25 was used to analyze the collected data. Mean, standard deviation, percentages were used for descriptive analysis of the data. The spreadsheet of the online responses was imported to SPSS after data coding was done using Microsoft Excel. New Variables of anxiety total score and insomnia total score were transformed by adding the variables of the respective scale questions in the questionnaire. Independent t-test was applied to both variables to find out the probability of anxiety and insomnia. Pearson correlation bivariate test showed a strong significant correlation between anxiety and insomnia. In this study alpha error of 0.05 is used as cut off for significance with p-value less than 0.05 indicating that significant difference does exist. A regression equation was also formulated. The t-value was obtained by applying Independent t-test on the insomnia total score transformed from the values obtained using the Insomnia Severity Index. The reliability of the questionnaire of insomnia was determined by using Cronbach's Alpha value (0.842>0.7) making the questionnaire significantly reliable. Since the value of *r* is high. A regression equation was formulated using the SPSS. The Regression equation can be used to predict the value of insomnia scores if the anxiety scores of that particular subject are known.

RESULTS

A total of 965 responses including 664 medical and 301 non-medical students were enrolled for the study. Total 427 (44.2%) of these were Male subjects and 538 (55.8%) were Female subjects. Mean age of subjects taking part in the setting was 24.86 years. Independent

Table 1: Mean and standard deviation in medical and non-medical students

Characteristics	<i>n</i>	Mean ± S.D
Anxiety total score		
Medical	664	13.94 ± 10.01
Non-medical	301	16.31 ± 10.88
Insomnia total score		
Medical	664	10.44 ± 6.52
Non-medical	301	11.39 ± 7.34

t-tests were applied to determine the p-value. The p-value of anxiety (p=0.001) and insomnia (p=0.003) implied the increased prevalence of these pathopsychological disorders in non-medical students as compared to the medical students (p-value<0.005). Table 1 shows the group statistics for the anxiety total score and insomnia total score.

The t-value obtained by applying Independent t-test on the anxiety total score (-3.309) and insomnia total score (-2.011) determined the difference between means of the two groups. There was a statistically significant strong correlation between the anxiety scores and insomnia scores of medical and non-medical students (*r*=0.742, p-value is less than 0.001).

Since the value of *r* is high. A regression equation was formulated using the SPSS. The regression analysis equated the value of *b* = 0.487 and *a* = 3.586. So if one of the value of one of the variable, i.e. Insomnia Total Score or Anxiety total score is known the value of the other can be found. This helps to predict the correlation between the variables in any subject keeping in view the Exclusion criteria.

The study also determined the Mean ± S.D of anxiety total score in males (14.07 ± 10.31) and females (15.17 ± 10.35) and insomnia total score in both males (10.20 ± 6.84) and females (11.17 ± 6.73) concluding that female subjects were more vulnerable to the psychopathological effects of both anxiety and insomnia. Males were able to cope these conditions in a much better way

DISCUSSION

Novel coronavirus had become a global pandemic. Almost 70% of the world, was under lockdown. There is very less information about this virus. Current generation had never seen such a condition and was having problems facing the lockdown. In 2010, a study done on the students of many domestic and international universities to find out knowledge among students about the pandemic of influenza virus concluded that most of the students were unable to even define a pandemic properly.¹¹ On the other hand, only a few students gave the right answers for the containing

of the virus and the chances of them getting infected by it. According to a study in 2005, SARS (Severe Acute Respiratory Syndrome) was contracted from some species of bats. Although the etiological basis of the SARS is still not well known. It was found out that the virus obtained from bats was able to mutate more rapidly than the virus transmitted from human-to-human. This Novel Coronavirus outbreak is the third outbreak of Coronaviruses, including SARS in 2002-2003 and MERS in 2012 and the COVID-19 in 2020. It is currently believed that this virus originated from wildlife species, such as Bats, Snakes and Pangolins, etc.¹²

The major focus of this study is students, in both medical and non-medical institutions facing these psychopathological disorders due to lockdown ensued upon them during COVID-19 outbreak. According to a reference study conducted in India it was found out that almost everyone is susceptible to mental health issues and psychopathological disorders during the Lockdown.¹³ Our study results prove that although both medical and non-medical students were affected mentally. The ratio of non-medical students suffering from the mental health issues is more as compared to the medical students.

Researchers suggest that physical activity helps to alleviate depression and anxiety and improves overall wellbeing of a person.¹⁴ It has also been observed that there was an increase in sedentary behaviour in youth during lockdown.¹⁵ Therefore, it is expected to see detrimental effects on mental health of people under lockdown owing to reduced physical activity. A study conducted among students and staff at different healthcare institutions showed that undergraduate medical students had better awareness on COVID-19 as opposed to non-clinical/ administrative staff.¹⁶ Therefore, a lack of adequate information about COVID-19 might serve as a contributing factor to the increased incidence of anxiety among non-medical students in our study.

A study on the prevalence of Post - Traumatic Stress Symptoms (PTSS) such as anxiety insomnia and stress during COVID-19 outbreak, conducted in Wuhan and adjoining cities in China, showed an increased incidence in females than in males.¹⁷ Hence supporting our results that more females were affected by anxiety and insomnia in our subjects. The COVID-19 outbreak has led to a global economic crisis.¹⁸ The Government implemented lockdown and focused on working from home, using different schemes to facilitate the poor through these times. The economic

crises affected most individuals, inducing stress and anxiety among them.

The initial phase of lockdown had the most negative psychological impact of all the phases. People were worried about getting infected themselves or their friends or relatives catching the infection and about the availability of a good treatment in such conditions.¹⁹ The second phase of easing lockdown helped majority of the people to return to their normal lives thus reducing psychological stress, however, there was the risk of triggering symptoms in people who had been relatively stable during strict lockdown.²⁰

The COVID-19 pandemic also led to an infodemic of social media. Misinformation due to rumors, stigma and conspiracy theories precipitated fear and anxiety in individuals.²¹ Our study showed that non-medical students were facing more sleeping difficulties, insomnia, anxiety and depression. As medical students were more likely to update their knowledge, giving them a better understanding of the pandemic, stress management comparatively became easier.²² Government should be asked to take steps for betterment of mental health of the students and social community. There should be a proper check on social media to determine the authenticity of the news.

Our study shows that most people have lost their interest in regular work, hobbies and other routine activities during lockdown. There is still not much information about this pandemic causing virus, but we can expect more information in the coming days. Adopting proper preventive practices and maintaining social distancing can help in overcoming the spread of virus and the fear and anxiety derived from it.

Findings of this study may help to understand the difference of awareness among medical and non-medical students. It also gives approximate anxiety scores and insomnia scores of a person using the regression equation and supports the results of some previous studies^{13,16,17,19,22} and on the other hand. It also disapproves some of their results. It is suggested that proper measurements should be taken to provide basic information among non-medical students and female students. Anxiety and insomnia management classes or webinars should be held by the government.

CONCLUSION

Insomnia and anxiety were prevailing both in medical and non-medical students. However, there was increased prevalence in non-medical students. There was also increased prevalence of anxiety and insomnia in

females. There was a strong correlation between anxiety and insomnia.

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