Prevalence of Insomnia in Adults Received at Medical Wards of Liaquat University Hospital Jamshoro, during the Covid-19 Pandemic

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ABSTRACT

OBJECTIVE: To determine the prevalence of insomnia in adults received at medical wards of Liaquat University Hospital, Jamshoro, during the Covid-19 pandemic

METHODOLOGY: This cross-sectional retrospective study was conducted from February to July 2020, on 200 patients belonging to various educational and socio-economic backgrounds received at Liaquat University Hospital, Jamshoro. The sampling technique was nonprobability, consecutive. The inclusion criteria were males and females above the age of 18 years while the exclusion criteria were individuals with sleep-disordered breathing, prior history of sleep disturbance, and psychiatric illness. This study was funded by the authors. A questionnaire was designed to record the data, including the demographics, educational and job status, and score on Athens Insomnia Scale. The collected data was analyzed on SPSS 20.

RESULTS: The study included 108 males (54%) and 92 females (46%) over the age of 18 years. Seventy-six individuals (38%) said their sleep quality has worsened during the pandemic, including difficulty initiating sleep in 29, difficulty staying asleep in 22, and 25 having vivid dreams. Out of these, 68% were females and 32% were males, 124 respondents (62%) did not face the above-mentioned problems but 74 (37%) did confirm going to bed later at night and sleeping for a longer duration, while 50 (25%) did not notice any change in their sleeping pattern.

CONCLUSION: The Covid-19 pandemic has upturned lives in several ways, including the disruption of sleeping patterns and increased prevalence of insomnia in patients received at medical wards of Liaquat University Hospital, Jamshoro.

KEYWORDS: Covid-19, Pandemic, sleep disturbance, insomnia, vivid dreams, Insomnia Scale

INTRODUCTION

The Coronavirus derives its name from the Latin language (Latin; corona means the crown), about the resemblance of its structure to a crown when seen under a microscope. It is a family of several strains of RNA viruses, including the newly emerged Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)[1]. This novel virus is responsible for causing Coronavirus Disease 2019 (COVID-19), resulting in upper and lower respiratory disease, as well as other systemic upsets such as neurological, ocular, cardiac, renal, hepatic, and hematological manifestations. Its first case was detected in China's Wuhan city of Hubei province on 31st of December 2019, and soon it spread to other countries across the globe[2]. It was said to have originated from the wet market. Initially, snakes were thought to be the hosts for the SARS-CoV-2, but later on, this idea was dismissed[3]. It was then implied that bats acted as the natural hosts of this virus[4]. This infection is most commonly spread through droplets and by close contact. Another route of transmission is said to be through aerosols.

Majority of the patients infected by this virus demonstrate mild symptoms, for instance, fever along with sore throat and dry cough, resulting in complete resolution. However, there have been cases reported resulting in dire consequences like severe and bilateral pneumonia, acute respiratory distress syndrome, septicemic shock, multi-organ failure, and even death[5]. The elderly and those with chronic diseases such as Diabetes, Hypertension, and pre-existing Heart Disease, are said to be at the highest risk[5]. A Public Health Emergency was declared by the World Health Organization (WHO) on 30th January 2020 and subsequently, a pandemic was announced on 11 March 2020. This was followed by a complete disruption of usual lifestyle and routine, including job, educational and recreational norms, and schedules. This increased the level of overall stress amongst the population, including a negative impact on sleeping patterns and habits, leading to insomnia, which can

affect an individual's health. Certain research studies carried out in the past during other infectious outbreaks, such as Ebola, are suggestive of possible mental health crises during this pandemic as well[6]. Research shows that several factors during this pandemic have led to psychological upset and sleeplessness[7,8].

Insomnia is not always complained about by the patients unless they are asked. Therefore, every patient should be asked about their sleeping habits, especially during a stressful situation such as the ongoing pandemic.

METHODOLOGY

This cross-sectional retrospective study was carried out on 200 individuals from February to July 2020. The inclusion criteria were males and females above the age of 18 years while the exclusion criteria were individuals with sleep-disordered breathing, prior history of sleep disturbance, and psychiatric illness whereas the sampling technique was non-probability, consecutive, and the study was funded by the authors.

All the respondents were residents of the city of Hyderabad, having different educational and socioeconomic backgrounds. The survey forms were then filled with the data obtained by the enrolled participants, including their demographics, marital status, and education status, nature of the job, monthly income, and history to evaluate the sleep quality. Athens Insomnia Scale was used to score the patients. Insomnia was labeled for a score of 6 or more. Insomnia was defined as any disturbance in the sleeping pattern including trouble falling asleep and difficulty maintaining sleep. SPSS 20 was then used to analyze the data and to attain the results. The mean and standard deviation was calculated for quantitative variables such as age and score on Athens Insomnia Scale. The stratification was done for age, gender, marital, education and job status, and insomnia to see the effect on the outcome and to control the effect modifiers. The post-stratification chi-square test was applied on categorical variables at a 95% confidence interval and the p-value <0.05 was considered as statistically significant.

RESULTS

Out of 200 participants enrolled in the study, 108 were male (54%) and 92 were female (46%) (**Table I**) between the ages of 18 to 65 years (33.1±10.6), 76 individuals (38%) admitted that their sleep quality has declined. Amongst these, 29 people experienced sleep onset insomnia, 22 people suffered from sleep maintenance insomnia, and 25 confirmed experiencing more vivid dreams (**Pie Chart I**). 124 respondents (62%) did not encounter insomnia or strange dreams but 74 people (37%) did confirm going to bed later at night and sleeping for a longer duration.

50 people (25%) did not notice any change in their sleeping patterns. Among all the participants experiencing sleep disturbances, 68% were female and 32% were male (**Bar Graph II**).
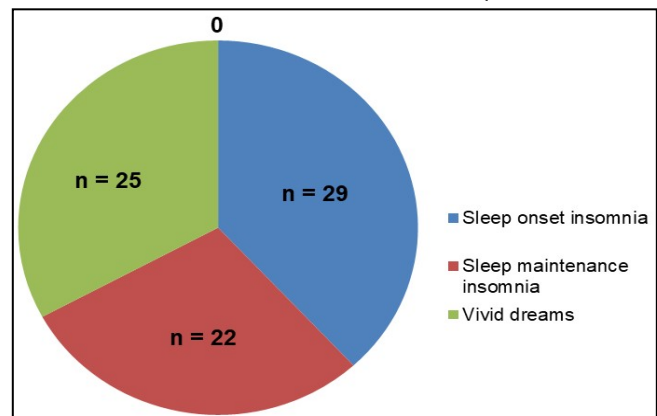
TABLE I: GENDER OF PARTICIPANTS

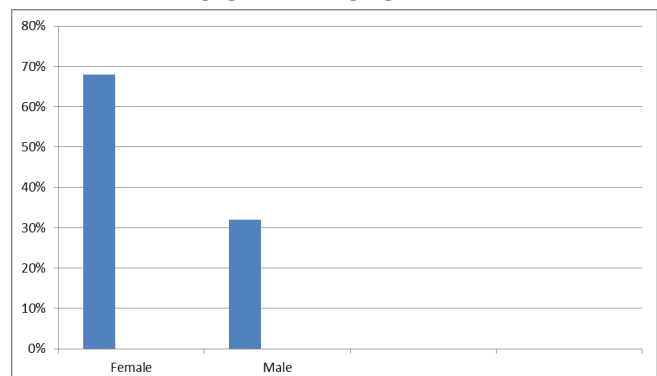|	Total 200
Male	54 % (n= 108)
Female	46 % (n=92)

BAR GRAPH I: SLEEP BEHAVIOUR
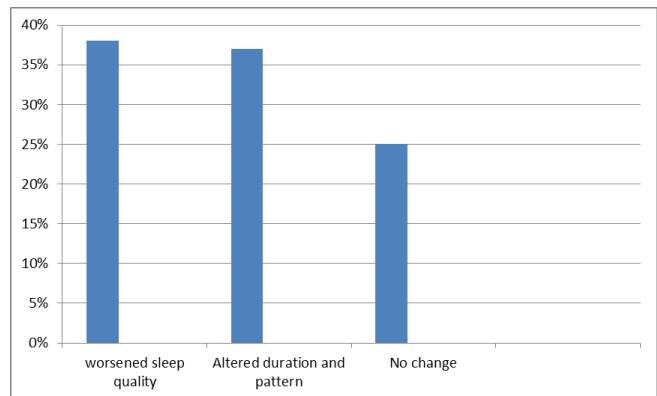
PIE CHART I:
PATTERNS OF WORSENED SLEEP QUALITY

BAR GRAPH I: COMPARISON OF GENDERS EXPERIENCING SLEEP DISTURBANCE

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DISCUSSION

When the news of the novel Corona Virus emerged on the surface, several steps were taken by the WHO, CDC (Centre of Disease Control), and the governments of countries all across the globe to harness the spread of the virus. This included the travel bans, strict and smart lockdowns, closing of educational institutes, dismissing large gatherings, and shutting down of various businesses. All this led to a complete disruption of life, posing not only a great economical and financial burden but also an enormous emotional and psychological burden[9-11].

It is widely acknowledged that stress, thinking, and uncertainty lead to sleeplessness or disturbed sleep, which in turn, can have an impact on a patient's life and functionality[12]. As there are many uncertainties still related to the current Covid-19 pandemic, it is associated with disturbed sleeping patterns in the general population. Several patients were experiencing sleep onset insomnia, sleep maintenance insomnia, and vivid dreams, Lack of proper sleep leads to poor concentration, and daytime somnolence, which affects an individual's performance. Moreover, it affects the overall health of a person, as demonstrated by one such study that showed loss of sleep leads to increased incidence of cardiovascular and neurovascular events[13]. It also causes insulin resistance and type 2 diabetes mellitus and also acts as a factor for weight gain[14]. Lack of sleep exacerbates gastroesophageal reflux disease (GORD)[15] and irritable bowel syndrome (IBS)[16]. Chronic pain of osteoarthritis is worsened by sleep disturbance as well[17].

Several studies have been carried out globally to evaluate insomnia and sleep disturbances among people during the Covid-19 pandemic. There are several scales and scoring systems that can be used to assess insomnia in an individual. One such scale is called as Athens Insomnia Scale (**Table II**). It comprises eight parameters to evaluate the quality and quantity of sleep. A score of 6 or more than 6 on this scale is labeled as insomnia. One Greek study used this scale to evaluate insomnia in the Greek population during the pandemic[18]. It showed that 37.6 % of individuals suffered from insomnia. Another study carried out on the French population revealed insomnia in 19.1 % of people[19].

As evident by the results of our study, many patients are suffering from sleep disturbance ever since the start of the pandemic. Therefore, every patient's sleep status should be questioned, whether or not it is their primary complaint. All the health issues about inadequate sleep necessitate the intervention by the physician to take sleep disturbance seriously and to recognize, manage and modify the outcomes to enhance a person's quality of life during the ongoing pandemic.

TABLE II: ATHENS INSOMNIA SCALE

Sleep induction	Not a problem	0
	Slightly delayed	1
	Markedly delayed	2
	Very delayed / no sleep at all	3
Awakening in the middle of the night	Not a problem	0
	Minor problem	1
	Considerable problem	2
	Serious problem / no sleep at all	3
Final awakening earlier than desired	No	0
	A little earlier	1
	Markedly earlier	2
	Much earlier / no sleep at all	3
Total sleep duration	Sufficient	0
	Slightly insufficient	1
	Markedly insufficient	2
	No sleep at all	3
Overall sleep quality	Satisfactory	0
	Slightly unsatisfactory	1
	Markedly unsatisfactory	2
	No sleep at all	3
Sense of wellbeing during the daytime	Normal	0
	Slightly decreased	1
	Markedly decreased	2
	Severely decreased	3
Functioning during the day	Normal	0
	Slightly decreased	1
	Markedly decreased	2
	Severely decreased	3
Daytime sleepiness	None	0
	Mild	1
	Moderate	2
	Severe	3

CONCLUSION

With the help of the results obtained through this study, the authors concluded that the pandemic has not only led to a disruption of usual routines and schedules but has also significantly affected the sleeping patterns and increased the prevalence of insomnia. As it is an essential component for an individual's health and wellbeing, special attention should be paid to those struggling to attain good quality sleep.

DATA SHARING STATEMENT: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions

AUTHOR CONTRIBUTIONS

Nazia S: Contributions to conception and design, acquisition of data, analysis, and interpretation of data
Almani SA: Drafting the article and shares its expert opinion and experience in finalizing the manuscript
Mohammad AT: Data analysis and interpretation of data and make it suitable for final revision
Abbasi M: Contributed to conception and interpretation of data and give an expert view
Shah MI: Final proofreading, review of the literature, and sequencing the material as well as grammatical review.
Kumar S: Collection and acquisition of data and help in analysis and review of the manuscript

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