

## Observation of Change in sleep pattern in B. Sc. Nursing students of Rajendra Institute of Medical Sciences (RIMS), Ranchi during the COVID – 19 lockdown period

Dr. Shishir Kumar Mahto<sup>1</sup>, \*\*Dr. Mani Bhushan Kumar Sinha<sup>2</sup>

1. Tutor, Department of Physiology, Rajendra Institute of Medical Sciences (RIMS), Ranchi
  2. Associate Professor, Department of Physiology, Rajendra Institute of Medical Sciences (RIMS), Ranchi
- \*\* Corresponding author: Associate Professor, Department of Physiology, Rajendra Institute of Medical Sciences (RIMS), Ranchi, Jharkhand (India)
- 

### Abstract

The COVID – 19 pandemic was recognized by the World Health Organization (WHO) as a public health emergency of International concern. In view of the increasing toll of COVID – 19 cases in India, a lockdown was imposed on 24 March 2020 to break the chain of transmission of the disease. This resulted into cessation of various activities including the closure of schools and colleges which affected the life styles of students. Sleep is an important facet of lifestyle, the quality of which is strongly related to psychological and physical health.

This study was aimed to observe the change in sleep pattern in B. Sc. Nursing students of Rajendra Institute of Medical Sciences (RIMS), Ranchi during the lockdown period. It was a questionnaire based observational study in which 72 students from first and second year were included. A online survey was made using a structured Google form questionnaire.

In this study we observed that most of the students (65.28%) experienced a change in their sleep pattern. We concluded that lockdown has affected the normal sleep wake cycle of most of the students. Various studies showed that the sleep disturbance must not be taken lightly and any residual sleep related abnormalities must be addressed properly devising appropriate training programs and counseling sessions.

**Keywords:** COVID – 19, Lockdown, Sleep and sleep disorders.

---

Date of Submission: 28-09-2020

Date of Acceptance: 10-10-2020

---

### I. Introduction

Sleep is a very important physiological process essential to life. Its quality is strongly related to psychological and physical health and other measures of well-being (1). On the other hand, Individuals who report poor sleep quality and other sleep-related disturbances may be at higher risk for depression and other psychiatric disorders throughout their lifetime (2, 3). So, it's a to and fro relationship between the sleep quality and the physical and psychological status of individuals.

The COVID-19 pandemic, also known as the corona virus pandemic is an ongoing global pandemic (4). The World Health Organization (WHO) declared the outbreak a Public Health Emergency of International concern on 30 January 2020 and a Pandemic on 11 March 2020 (5). It has affected India also with a toll of COVID-19 cases increasing day by day at an enormous pace. As the disease has proven highly infectious, spreading rapidly from person to person via droplets mainly produced due to coughing and sneezing. In order to break the chain of transmission of the disease a pan India lockdown was imposed firstly on 24 March 2020, then subsequently continued for another three phases. This resulted into cessation of various activities like travel restrictions, closure of schools and colleges, cancellation of sporting, religious, political & cultural events and many more. This way the pandemic has caused massive social and economic disruption. Nobody has remained unaffected from it and one or other facets of the lifestyle of people from different age group, socioeconomic strata and profession has been severely or merely affected. It is therefore very important to study about the lifestyle changes in different groups of people as it has been an important indicator of the person's health. Sleep pattern is an important aspect of lifestyle which significantly affects the physical and psychological well being.

This study was aimed to observe the change in sleep pattern of B. Sc. Nursing students of RIMS, Ranchi during the lockdown period of COVID – 19 pandemic.

On reviewing an article published in Sleep Science Journal (Vol. 2 issue 2, 2009) of Brazilian Sleep Society, we found that the amount of sleep is also very important and is positively correlated with alertness and psychomotor vigilance (6). A number of studies were conducted to measure the consequences of insufficient sleep. It is known that one night of sleep loss impairs innovative thinking, flexible decision-making, and several forms of cognitive performance (7, 8). One of the major consequences of sleep deprivation is daytime

somnolence and its inevitable outcomes. One author observed excessive sleepiness prevalence of 93.2% in a population of medical students (9). Daytime sleepiness may result in mood disturbances and increased vulnerability to substance use (10). Another study showed that employees with subjective daytime sleepiness lose more working days due to health reasons than their more alert colleagues (10).

As the studied group will be associated with crucial healthcare services in future and will play a pivotal role in patient care, their mental status, psychological and physical health is very important. Sleep being an important determinant of these factors it is very important to study about any alteration in sleep pattern of these trainee nursing students.

## II. Aims & Objectives

Aim of this study was to observe any change in sleep pattern of B. Sc. Nursing students of RIMS, Ranchi during the lockdown period of COVID – 19 pandemic and to work on the possible reasons and remedies for this.

Specific objectives of this study were as follows:

1. To find out any alteration in sleep pattern of B. Sc. Nursing students of RIMS, Ranchi included in our study
2. To design specific learning and counseling programs for these students to deal with adversities like lockdown of COVID – 19 pandemic

## III. Materials and Methods

The present study was a questionnaire based observational study done on a group of B. Sc. Nursing students of first and second year in RIMS, Ranchi. A questionnaire was supplied to them in the form of Google form. An informed consent was also included in that. Google form link was shared with them on Whatsapp group and their responses were recorded. Neither any identity parameter was demanded (like name, roll number etc.) nor was revealed during this study. A specific code was assigned based of their mobile numbers. All the data obtained were analyzed.

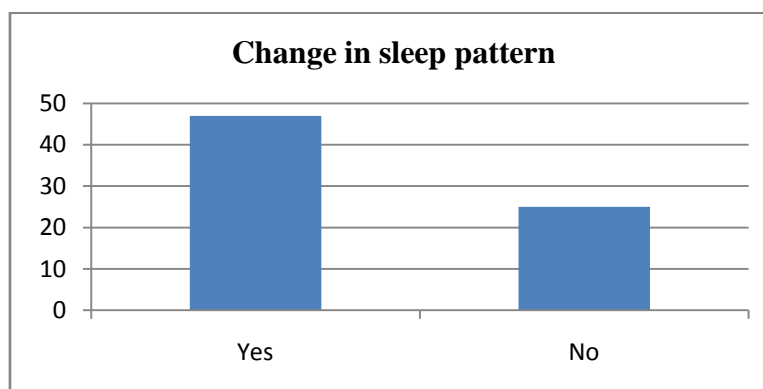
## IV. Observations

In this study following observations were noted:

**Table-1: Change in sleep pattern in B. Sc. Nursing students**

Change in sleep pattern	No. of Students	Percentage
Yes	47	65.28
No	25	34.72
<b>Total</b>	<b>72</b>	

We asked the study subjects (n = 72) that whether they observed any change in their sleep pattern during the lockdown period of COVID – 19 or not? We observed that 47 students (65.28%) answered “yes” that means they noted deviation in their regular sleep pattern. Whereas 25 students (34.72%) did not noticed any change in their sleep pattern and they responded with “no”.

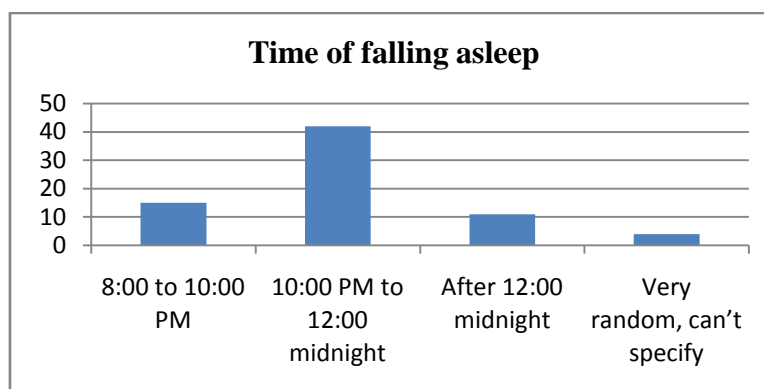


**Table-2: Time of falling asleep**

Time of falling asleep	No. of Students	Percentage
8:00 to 10:00 PM	15	20.83

10:00 PM to 12:00 midnight	42	58.33
After 12:00 midnight	11	15.28
Very random, can't specify	4	5.56
<b>Total</b>	<b>72</b>	

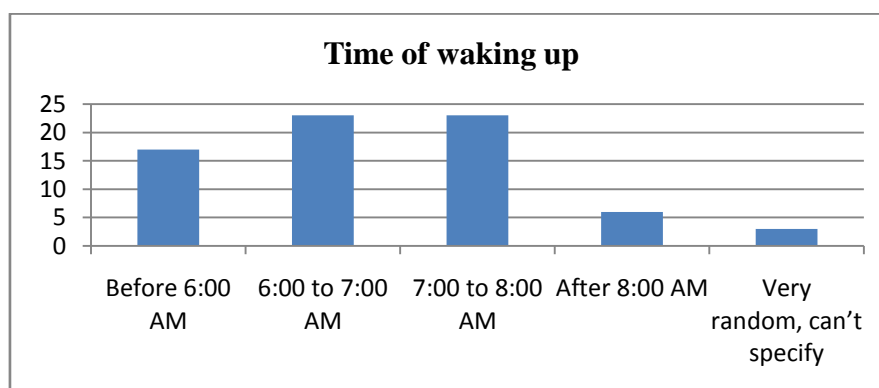
In this table we observed that usual time of sleeping of most of the students was between 10:00 PM to 12:00 midnight (58.33%). 20.83% students used to sleep between 08:00 PM to 10:00 PM and 15.28% were used to sleep after 12:00 midnight. Very few students (5.56%) had a very random routine of sleep that they could not specify.



**Table-3: Time of waking up**

Time of waking up	No. of Students	Percentage
Before 6:00 AM	17	23.61
6:00 to 7:00 AM	23	31.94
7:00 to 8:00 AM	23	31.94
After 8:00 AM	6	8.33
Very random, can't specify	3	4.17
<b>Total</b>	<b>72</b>	

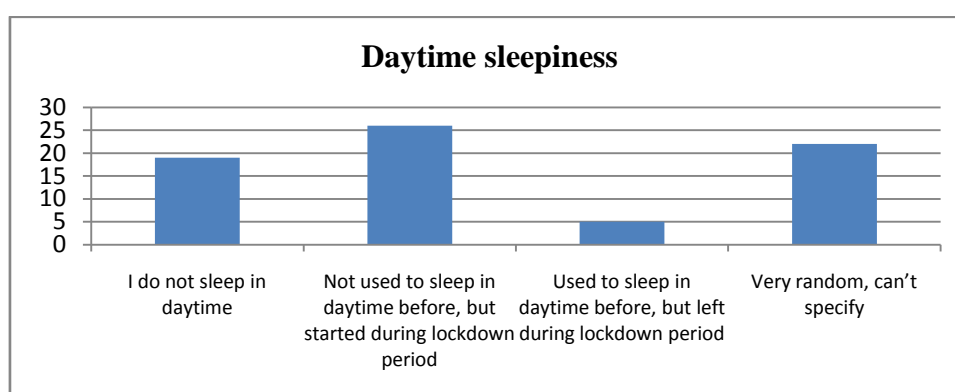
This table is showing the usual time of waking up in the morning of B. Sc. Nursing students during the lockdown period. Most of them were waking up after 06:00 AM whereas only 23.61% students were waking up before 06:00 AM. Few students (4.17%) said that their waking up time was very random.



**Table-4: Daytime sleepiness**

Daytime sleepiness	No. of Students	Percentage
I do not sleep in daytime	19	26.39
Not used to sleep in daytime before, but started during lockdown period	26	36.11
Used to sleep in daytime before, but left during lockdown period	5	6.94
Very random, can't specify	22	30.56
<b>Total</b>	<b>72</b>	

When we took history of daytime sleepiness among the students of our study group, we observed very interesting findings. We observed that maximum students (36.11%) did not use to sleep in daytime before, but they started during lockdown period. 30.56% students had very random routine regarding the daytime sleepiness. Very few students (6.94%) answered that they used to sleep in daytime before but left during lockdown period.



## V. Conclusion

In this study we concluded that due to the lockdown imposed during COVID – 19 pandemic, most of the students (65.28%) experienced change in their sleep pattern. As all the academic activities and clinical ward duties were ceased and the students went to their homes, they were engaged in activities other than that in their usual daily routines. This may be the most important cause for this shift.

Another interesting fact that we noted in our study that 36.11% students did not use to sleep in daytime before, but they stated so during the lockdown period. This was an another major breakthrough in the usual sleep pattern of our study subjects.

## VI. Discussion

In our study we clearly found that a significant number of B. Sc. Nursing students experienced a observable change in their sleep pattern during the lockdown period of COVID – 19 pandemic. A study conducted by Loayza & colleagues (3) showed an association between sleep disturbance & suspicion of psychiatric disorders in medical students. So it is very essential for students and healthcare professionals to understand the importance of sleep disturbances & other sleep disorders and their consequences. The subjects who showed change in their regular sleep pattern must be followed properly for the persistence of sleep disturbances after the lockdown period is over. Studies must be done to detect the possible causes affecting the sleep pattern adversely and address these issues because any studies have shown that students and professionals tend to ignore the sleep disorders and their possible consequences (12, 13).

Our present study is a very primitive and crude study just to look into the magnitude of the problem. In future more detailed and standardized approach must be employed for better analysis and quantification of the variables and more number of subjects must be incorporated in the study including the medical students also.

**Conflict of interest:** There is no conflict of interest in this study.

**Funding:** We did not get any funding for our study.

**Acknowledgement:** We are grateful to the students who participated in our study.

### References

- [1]. Pilcher JJ, Ott ES. The relationships between sleep and measures of health and well-being in college students: a repeated measures approach. *Behav Med* 1998; 23:170-7.
- [2]. Ford DE, Cooper-Patrick L. Sleep disturbances and mood disorders: an epidemiologic perspective. *Depress Anxiety* 2001; 14:3-6.
- [3]. Loayza HMP, Ponte TS, Carvalho CG, Pedrotti MR, Nunes PV, Souza CM, et al. Association between mental health screening by self-report questionnaire and insomnia in medical students. *Arq Neuropsiquiatr* 2001; 59:180-5.
- [4]. Naming the coronavirus disease (COVID - 19) and the virus that causes it; World Health Organization (WHO)
- [5]. World Health Organization (WHO), 2020
- [6]. Jewett ME, Dijk D, Kronauer RE, Dinges DF. Dose-response relationship between sleep duration and human psychomotor vigilance and subjective alertness. *Sleep* 1999; 22:171-9.
- [7]. Harrison y, Horne JA. One night of sleep loss impairs innovative thinking and flexible decision making. *Organ Behav Hum Decis Process* 1999; 78:128-45.
- [8]. Jacques CH, Lynch JC, Samkoff JS. The effects of sleep loss on cognitive performance of resident physicians. *J Fam Pract* 1990; 30:223-9.
- [9]. Santibañez I. Estudio de hábitos normais e patológicos de sono e vigília de estudantes de medicina: estudo de prevalência. *J Bras Psiq* 1994; 43:33-7.
- [10]. Jean-Louis G, Von Gizycky H, Zizi F, Nunes J. Mood states and sleepiness in college students: influences of age, sex, habitual sleep and substance use. *Percept Motor Skills* 1998; 87:507-12.
- [11]. Philip P, Taillard J, Niedhammer I, Guilleminault C, Bioulac B. Is there a link between subjective daytime somnolence and sickness absenteeism? A study in a working population. *J Sleep Res* 2001; 10:111-5.
- [12]. Pilcher JJ, Walters AS. How sleep deprivation affects psychological variables related to college students' cognitive performance. *J Am Coll Health* 1997; 46:121-6.
- [13]. Roth T, Costa e Silva JA, Chase MH. Sleep and cognitive (memory) function: research and clinical perspectives. *Sleep Med* 2001; 2:379-87.

Dr. Shishir Kumar Mahto, et. al. "Observation of Change in sleep pattern in B. Sc. Nursing students of Rajendra Institute of Medical Sciences (RIMS), Ranchi during the COVID – 19 lockdown period." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(10), 2020, pp. 59-63.