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Original Research Article

# An Examination of the Stress and Sleep Patterns of Paramedical Students during the COVID-19 Lockdown

**Pritam Kumar[1], Amrita Narayan[2]**

[1]Tutor, Department of Physiology, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Bihar, India

[2]Assistant Professor, Department of Physiology, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Bihar, India

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**Corresponding author: Pritam Kumar**

**Conflict of interest: Nil**

**Abstract**

**Objective:** Students' mental health has been affected by the implementation of the statewide lockdown to stop the further spread of the Covid-19 virus and the warning of social exclusion and isolation. All the worried paramedical students experience dread, tension, and anxiety as a result of these sudden adjustments. The purpose of this study was to assess the relationship between paramedical students' reported stress levels and the start of sleep.

**Method:** 130 first-year paramedical students from Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, who took part in the study within a year were the subject of an observational study. The information was gathered using Internet surveys. Chi-square analysis was used to examine the data**.**

**Results:** The participants' body mass index (BMI) was 20.92±3.41 Kg/m$^2$, and their average age was 19.97±1.20 years. The mean PSS score, or perceived stress score, was 18.18 ±11.18. It was shown that there was no significant relationship (p=0.156) between the PSS Score and the difficulties falling asleep. To relieve stress, 24.61% of students engaged in hobbies such as painting or other forms of art, 7.45% dance, 15.66% physical activity, 25.36% music, and 14.17% in yoga.

**Conclusion:** The paramedical students are significantly more stressed as a result of the Covid 19 shutdown.

**Keywords:** Stress, the COVID-19 Pandemic, and Paramedical Students.



## Introduction

The Covid-19 pandemic has presented social difficulties to kids all across the world. The advent of the pandemic has had a profound influence on people's lives all around the world, particularly students, in a historically significant way. Due to the regional lockdown, residents were forced to stay inside their houses as schools and offices were closed. Stress and anxiety have been exacerbated by loneliness in homes, being apart from loved ones, uncertainty, loss of freedom, and lack of amusement [1]. Insomnia and other sleep-related issues, including lockdown, have been exacerbated by stress in people during the Covid -19 epidemic. Lack of sleep results in drowsiness, mood swings, generalised weakness, a loss of interest in daily tasks,

difficulties focusing, and memory issues. All of this has had an impact on pupils' academic performance [Figure 1] [2].

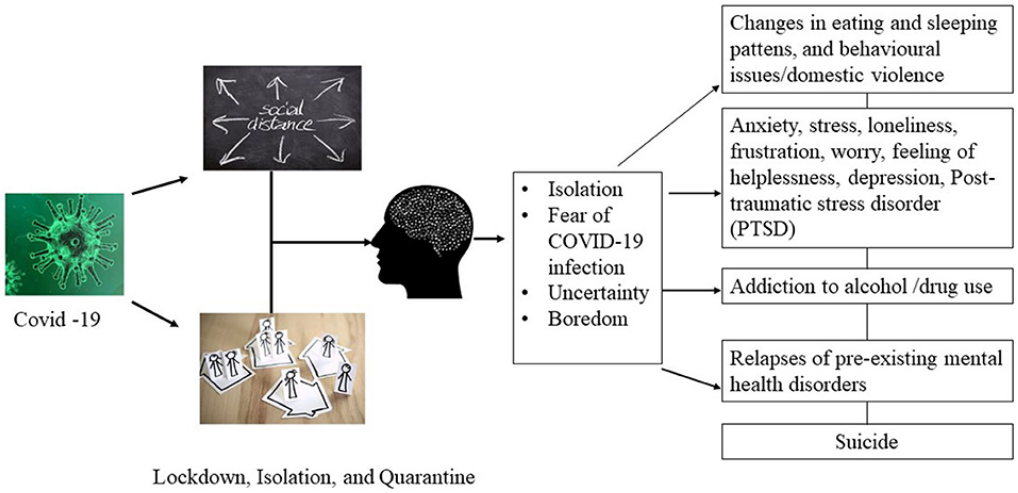


**Figure 1: Impact of COVID-19**

India has implemented regional and nationwide lockdown measures from March 2020. The closing of educational institutions and activity hubs was one of the key strategies. All of a sudden, the colleges have been closed. Students studying paramedicine are not immune to the pandemic's external effects. Students enrolled in paramedical programmes include those seeking physiotherapy, laboratory, radiography, dialysis, and nursing degrees. Prior to this, they had a set timetable for attending their topic classes (both theoretical and practical). They interacted one-on-one with their peer groups and mentors. The students also compulsively surf because of their extended seclusion at home. They now spend more time on screens overall [3].

Because they were under stress, they kept asking about the Covid-19 pandemic's progress. Paramedical students' home confinement is accompanied by uncertainty, a sense of melancholy, sorrow, and worry about their tests and the future. All of this is a result of disruptions to their education, physical activity, and socialisation possibilities. Long-term absence from the controlled environments of college led to disruptions in routine, boredom, and a lack of innovative activities (academic and extracurricular).

We predicted that stress can have a negative impact on both the length and quality of sleep, while getting too little sleep can make stress levels rise. Both stress and sleep deprivation can result in long-term issues with one's physical and mental health. It's important to stop this cycle because it can harm someone's physical and emotional health in the long run.

The following list of questions was included in the questionnaires:

1) Consent and course chosen
2) Demographic information, including age, gender, height, and weight
3) Sleep Disorders: Inability to fall asleep easily (yes/no), frequent nighttime awakenings (yes/no), and total length of sleep (less than 6 hours, 6 to 8 hours, or more than 6 hours).
4) The use of relaxation practices (art/painting, music, dance, yoga, exercise, or none)

**Methods:**

**Study Design:** This cross-sectional study was carried out within 1 year at Bhagwan Mahavir Institute of Medical Sciences, Pawapuri.

**Methodology:** The online survey questionnaire was created in compliance with the safety guidelines for Covid-19, which include maintaining social distancing and avoiding physical touch, and it was sent to the students on their email IDs. By responding to the survey questions, each student willingly and with their consent participated in the study. To avoid interviewer bias, none of the participants were asked for any personal information. Therefore, our study's questionnaire was non-interventional and had no personal identifiers or disclosures. To determine whether useful data can be obtained from the study, a pilot test of the questionnaire was first conducted on 40 students.

The following sections made up the questionnaire:

1) Acceptance and the chosen path
2) Demographics: years of age, gender, centimetres of height, and kilogrammes of weight. By using the Quetelet Index (weight/height in square metres (kg/m2)), the body mass index (BMI) was calculated.
3) Stress: The Perceived Stress Score Scale (PSS-10) is used to measure stress.

The candidate must respond to 10 questions on their feelings and thoughts from the previous month on the PSS Score. Each item on the scale is scored using a 5-point Likert scale [0=never, 1=almost never, 2=occasionally, 3=fairly frequently, 4=very frequently].

Six of the 10 questions (thoughts and feelings) are positively worded, whereas the other four are negatively worded. The overall rating ranges from 0 to 40. Higher levels of perceived stress are indicated by high PSS scores. The participants were placed into three groups based on their PSS scores: low stress (0–13), moderate stress (14–26), and high stress (27–40).

4) Sleep disturbances: Inability to fall asleep (yes or no), frequent nighttime awakenings (yes or no), and total sleep time (6 to 8 hours).

5) Stress-relieving methods used: (yoga, exercise, art or painting, dance, music, indoor sports, or none) and writing about any other interest used to manage stress.

**Sample Size:** 130 eligible paramedical students were included in this study

**Exclusion criteria:** A past history of any chronic sickness or disease, as this might exacerbate their stress, a history of addiction, students already receiving specialised therapy for sleeplessness, or any other psychiatric treatment or counselling.

**Statistical analysis:** On a Microsoft Excel spreadsheet, the information gathered through online surveys was tallied, and Mean ± SD was computed. The chi-square test was computed using the SPSS 20 programme to determine the relationship between the start of sleep and the stress score.

A p-value <0.04 or less was regarded as statistically significant.

**Results**

**Table 1: Displays the demographic information about the paramedical students. The participants' average age was 19.97 ±1.20 years, their height was 154.52 ±8.4 cm, their weight was 49.88 ± 9.51 kg, and their body mass index (BMI) was 20.92±3.41 Kg/m$^2$.**

| Demographic Details | Mean ± SD |
|---|---|
| Total no. of Participants | 130 |
| Age [years] | 19.97±1.20 |
| Height [cm] | 154.52±8.4 |
| Weight [kg] | 49.88±9.51 |
| BMI [kg/m$^2$] | 20.92±3.41 |

18.18 ± 11.18 was the mean PSS score. 130 individuals completed the test; 45 (35.7%) had low scores, 75 (55.1%) received moderate scores, and 10 (8.8%) received high scores (Figure 2).

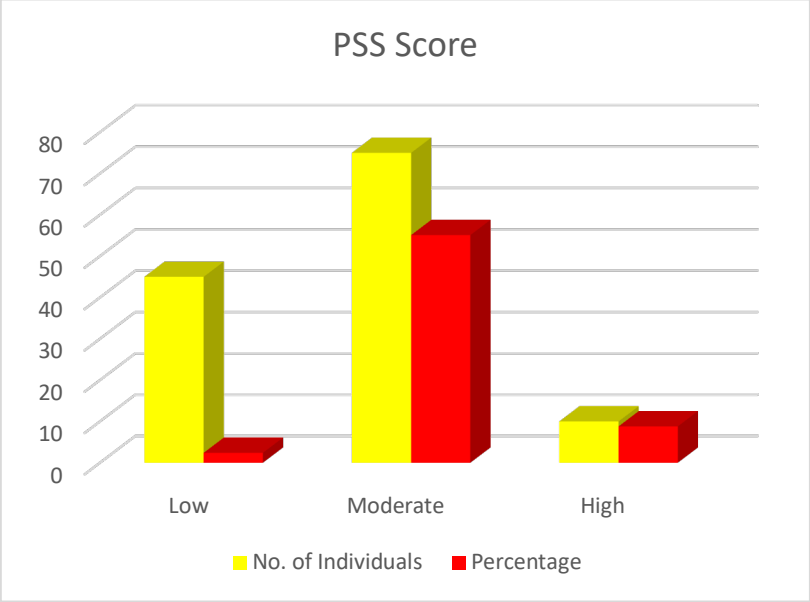


**Figure 2: PSS Score**

However, it was determined that there was no significant relationship between the PSS Score and difficulties falling asleep (p=0.156). The average participant reported sleeping for less than five hours 17.1% of the time, 5-7 hours for 74.5%, and >7 hours for 8.21%. 66 paramedical students had trouble falling asleep, and 30 reported having frequent night time awakenings.

130 paramedical students were enrolled, of which 32 (24.61%) were interested in art/painting, 11 (7.45%) in dance, 20 (15.66%) in exercise, 33 (25.36%) in music, 19 (14.18%) in yoga, and 16 (12.68%) in no hobbies (Figure 3).

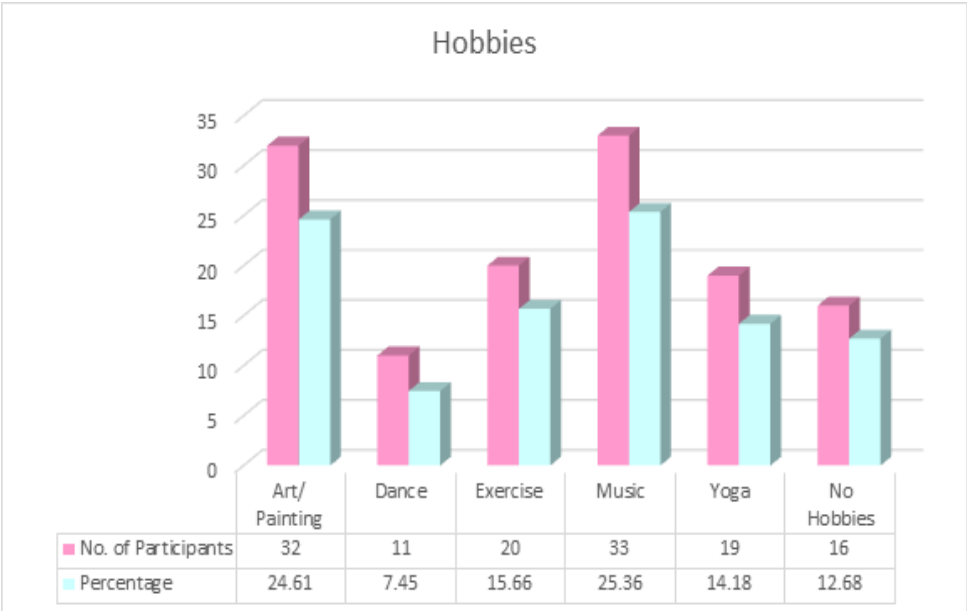


**Figure 3: Types of Hobbies for busting stress**

## Discussion

The students' average age was 19.97±1.20. The individuals' average BMI was 20.92±3.41. Concern has been raised about the high rate of stress among paramedical students. Stress was caused by the lockdown during the Covid 19 pandemic for paramedical students. As the country was rocked by the corona wave, 64% of the pupils reported feeling stressed. The majority of students (55.1%) received a PSS score in the moderate range. 8.8% of kids received a PSS score of severe. The mean PSS score was 18.18±11.18, which is within the moderate score range of 14 to 26. High levels of stress can damage students' ability to concentrate, their cognitive functioning, and their academic achievement, according to a study by Dahlin m et al. [5]. In their study of medical students, Swaminathan et al. similarly discovered comparable results, with the majority of students falling within the range of moderate PSS scores [6].

We found that roughly half of the students had trouble falling asleep and complained of waking up frequently at night. 17.5% of pupils slept for fewer than six hours. However, we could not find any evidence in our study (p-value = 0.156) of a significant relationship between sleep disturbance and PSS score. In medical students, stress and insufficient sleep quality were found to be significantly correlated. In female college students, Lee Shih Yu et al. discovered a link between high-stress levels and sleep disruptions, as well as shorter nocturnal sleep durations (less than 6 hours) [7]. The individuals' mean BMI fell within the normal range (18.5-24.9). Therefore, our study completely negates the impact of BMI on sleep quality.

Students studying paramedicine indulged in a few pastimes to relieve tension. Yoga was practised by 14.17% of students, art/painting was done by 24.61%, exercise was done by 15.66%, dance was done by 7.45%, music was practised by 25.36%, and there were 12.68% of students who had no hobbies.

Detrimental effects on relationships, behaviours, and health. When there is extreme stress, which either directly or indirectly affects children and teenagers globally's mental health. Yoga has been found in numerous studies to lower people’s levels of stress, anxiety, blood pressure, and quality of life. [8, 9]. The body's stress response mechanism is modulated through yoga. Through both psychological and biological mechanisms, it lessens stress. Positivity, self-compassion, post-hypothalamic inhibition, and salivary cortisol secretion all contribute to mental and physical relaxation [10-12].

Exercise also promotes relaxation because it lowers levels of the stress hormone cortisol and the feel-good neurotransmitter endorphin in the brain [13]. In their study, Chang et al. found that residents' stress, anxiety, and sadness decreased when they sang and listened to music for 30 minutes every day for two weeks [14]. According to a study by Abbott and colleagues, pupils who painted or drew experienced significantly less stress than those in the control group [15,16].

## Conclusion

Covid- 19 pandemic has impacted people's mental health in addition to the disease load brought on by the virus. The goal of health education is to increase student activity and alertness in order to prevent psychological health hazards. It is important to make efforts to ensure that students have a regular schedule that includes ample time for them to play, read, rest, and participate in physical and creative activities like painting, music, and dance.

## Strength & Limitations:

Our study's strength is a thorough examination of stress levels, sleep patterns, and stress management, particularly among paramedical students during the lockdown.

Less students took part in the study, which is a study's limitation.

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