

## Impact of Five Months of Lockdown Due to Covid-19 on Physical Activity & Psychological Wellbeing of Healthcare Students in Nagpur City, Maharashtra.

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### Abstract

**Introduction:** COVID-19 or 2019-nCoV, the novel Coronavirus looms over the planet Earth as an imminent threat to mankind. According to expert's opinion complete lockdown as the only measure to stop the exponential infectivity rates of the virus. Even though some relaxation is offered in the beginning of June month, school & colleges are continuing online sessions for current academic year. Online studies have been started for students & their academic loss is controlled to some extent. Students were forbidden to continue with prolonged home stay. This prolonged home stay may lead towards sedentary lifestyle & thus may affect one's physical activity. The aim of this study is to investigate impact of five months of lockdown due to Covid-19 on physical activity & psychological wellbeing of healthcare students in Nagpur city, Maharashtra. **Methodology:** a cross sectional observational study is carried out in healthcare students of Nagpur city, Maharashtra. A self-structured questionnaire was prepared & converted into google form. A google form was shared with participants via WhatsApp group. Responses were collected over a period of one week. **Result:** Participants were between age group of 18-23 years of age group with female participants were 91% & male participants were 9%. Study results showed that students spent almost 2-4 hours (44.1%) & 4-6 hours (44.1%) for online learning. 17.4% students didn't involve themselves in any physical activity. 35.9% participants

experienced pain in low back region followed by neck region (28.7%). 94.1% participants were worried for ongoing things & their purpose in life. **Conclusion:** This change in lifestyle during lockdown leads to decreased physical activity & students were more vulnerable for pain in different areas of body. This lockdown also affected their self-perceived psychological wellbeing. Helpful strategies to deal with increased stress & reduced physical activities for healthcare students can be implemented for students which will be useful in case repeated lockdown.

key words: lockdown, healthcare students, physical activity, psychological wellbeing.

## **Introduction**

Corona Virus 2019 (COVID-19) is an RNA virus, with a typical crown-like appearance under an electron microscope due to the presence of glycoprotein spikes on its envelope. (1) On February 11th, 2020, the World Health

Organization (WHO) Director-General, Dr. Tedros Adhanom Ghebreyesus, named the disease caused by the SARS-CoV-2 as “COVID-19”, and by March 11th, 2020 when the number of countries involved was 114, with more than 118,000 cases and over 4000 deaths, the WHO declared the pandemic status (2). Unavailability of specific treatment & vaccine make it a panic condition for (1). Considering current situation taking precautionary measures is the best practice. Following are very important preventive guidelines:

- (1) Use face masks.
- (2) Cover coughs and sneezes with tissues.
- (3) Wash hands regularly with soap or disinfection with hand sanitizer containing at least 60% alcohol.
- (4) Avoid contact with infected people.
- (5) Maintain an appropriate distance from people.
- (6) Refrain from touching eyes, nose, and mouth with unwashed hands

It primarily affects the respiratory system of an individual. Its symptoms include mild to severe symptoms. Mild symptoms include cough & breathing difficulty. Severe cases may need mechanical ventilation.

COVID-19 or 2019-nCoV, the novel Coronavirus looms over the planet Earth as an imminent threat to mankind. It is a global public health emergency and a pandemic, as declared by World Health Organization. (4)

According to expert's opinion, complete lockdown is the only measure to stop the exponential infectivity rates of the virus. Subsequently, on March 24, 2020, the Government of India ordered a nationwide lockdown for 21 days as a preventive measure against the spread of virus among more than 1.34 billion population of the subcontinent. This lockdown or complete safety restrictions imposed by the state ensure all services to close doors except emergency services such as drinking water, electricity, medical, police, fire, telecommunications, pharmacy, internet and other administrative sectors that have direct impact on sustenance of public life. (4)

Educational institutions are closed since March 2020 because of nationwide lockdown. Even though some relaxation is offered in the beginning of June month, schools & colleges are continuing online sessions for the current academic year. Online studies have been started for

students & their academic loss is controlled to some extent. Online teaching or E learning demands use of electronic tools like smartphone, computer, laptops etc. this has also increased student's exposure to screen. Because of this lockdown students ongoing college activity & participation in social gatherings have been restricted to greater extent.

Regular physical activity or active lifestyle are key determinant of health. (5) The World Health Organization (WHO) has defined health as "the full physical, mental and social wellbeing not merely the absence of disease or infirmity", and currently there is a multidisciplinary approach to the concept of health, in relation to the quality of life (6). Wellbeing is in general a term used to describe a condition of an individual or a group, with reference to the social, economic, psychological, spiritual, or medical attention (6).

Unexpected change in one's daily routine may affect physical activity of an individual. Decline in activity may have effect on performance of an individual & wellbeing. Students have suddenly land up in situation where they must face challenge of pandemic & abrupt change in their routine activities.

Students were forbidden to continue with prolonged home stay. This prolonged home stay may lead towards sedentary lifestyle & thus may affect one's physical activity. During this period students will divert to other activities which are not part of regular routine.

During this pandemic, major focus is on taking the precautions & to search for effective treatment of Covid-19. At the same time, it is also important to learn changes in human lifestyle due to this pandemic.

It is an opportunity to learn about changes in student's physical activity & different strategies used by them to cope the current situation.

The aim of this study is to investigate impact of five months of lockdown due to Covid-19 on physical activity & psychological wellbeing of healthcare students in Nagpur city, Maharashtra.

### **Aim**

To assess impact of five months of lockdown due to covid-19 on physical activity & psychological wellbeing of healthcare students in Nagpur city, Maharashtra.

### **Objectives**

1. To assess changes in physical activity during five months of lockdown.
2. To assess wellbeing during five months of lockdown period.

### **Methodology:**

**Study method:** cross sectional observational study.

**Sample size:** 167

**Study population:** Health care students

Health care students from various medical & allied health sciences colleges, Nagpur, Maharashtra between age group 18-23 who are residing at home due to lockdown period.

### **Inclusion criteria:**

Health care students between age group 18-23 years

Health care students having access to smartphones & internet.

### **Exclusion criteria:**

Students not willing to participate.

### **Materials used:**

Google form

### **Method:**

Participants were included in the study from various medical & allied health sciences colleges of Nagpur city, Maharashtra. Explanation of purpose & procedure was described in the beginning of Google form. Research's contact no. 7 email id were provided in the google form. So, participants can enquire regarding any difficulties related to description of questions.

Consent of participants were taken on a separate Microsoft word document which was sent to participants via WhatsApp application. Participants were supposed mark yes or no response for their participation.

A self- structured questionnaire was prepared. Questions were included with reference to literature review related to physical fitness (5) & psychological wellbeing of individuals (6). Questionnaire was converted into google form & used to collect responses of participants. Pilot study was conducted & included 15 participants. Modifications in questionnaire was done after pilot study. Revised questionnaire was converted into google form. Google form was shared with participants via WhatsApp application. Privacy of participants was strictly maintained. Data collection was started on 12<sup>th</sup> August 2020 & link for responses was closed on 18<sup>th</sup> august 2020.

### **RESULT:**

Table 1. demographic data of participants

Demographic data	N (%)
<b>Age</b>	
18-20	100(59.9)
21-23	67(40.1)
<b>Gender</b>	
Male	15(9%)
Female	152(91%)

Table 1 represents demographic data of students related age. It showed participants ranged between age group of 18-23. Majority of students were from age group of 18-20 (59.9%) & only 67(40.1%) students were from age group 21-23.

It also showed demographic data related to gender of students. It depicts that three-fourth (91%) students were females & only one-third (9%) students were males.

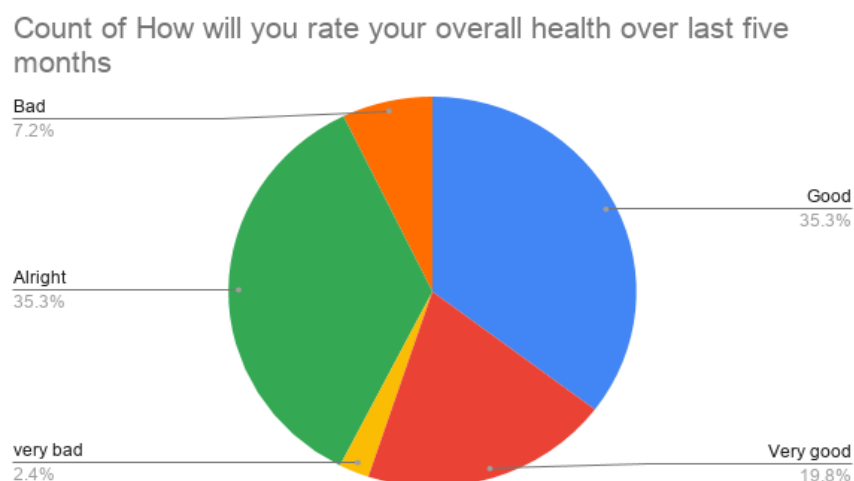


Figure 1

Figure 1 indicates rating of overall health of students during lockdown periods. 55.1% of students described their health being Very Good-Good. However, 44.9% students reported it as Alright-Very bad.

Table 2. Duration of sleep of students during period of lockdown

Duration	More than 8 hours	8 hours	Less than 8 hours
No. of students (total n = 167)	82 (49.1%)	46(27.5%)	39(23.4%)

Table 2 depicts nearly half of students get sleep maximum than 8 hrs & only 27.55 of students followed regular sleep pattern.

Table 3. Total hours of online teaching done by students.

Duration	2-4 hours	4-6hours	6-8 hours
No. of participants n (%)	75 (44.9%)	75 (44.9%)	17 (12.5%)

Table 3 demonstrates almost 150 students were doing online classes at least for 2-6 hours.

Count of What is preferable position to attend online sessions?

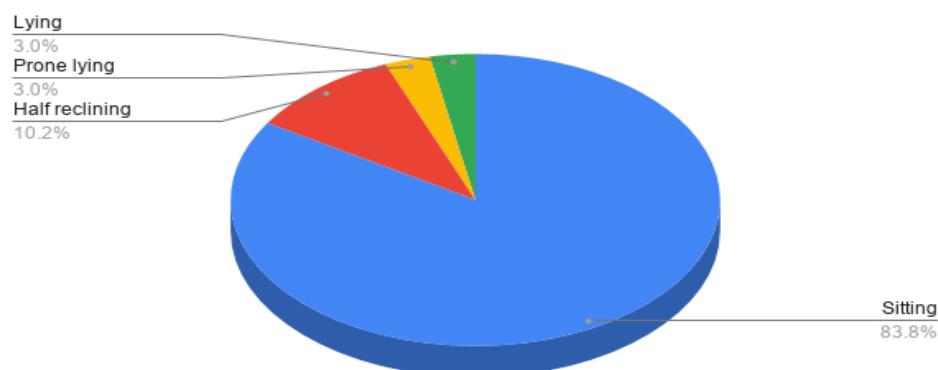


Figure 2

Figure 2 showed that almost 83.3% of students preferred sitting position during online classes. Also, half reclining (10.2%) & prone lying (3%) positions were also used by participants.

Table 4. Hours spend by participants in watching television / using smartphone.

Duration	4-6 hours	6-8hours	8-10 hours	10-12 hours
No. of participants (%)	99 (59.3%)	37(22.2%)	22(13.2%)	9(5.4%)

Table 4 indicates that more than half of students 99 (59.3%) were exposed to television or smartphone for at least 4-6 hours. Followed by these 37 students were spent their 6-8 hours of day in watching television or smartphone.

Count of How many hours do you engage in any physical activity over these 5 months

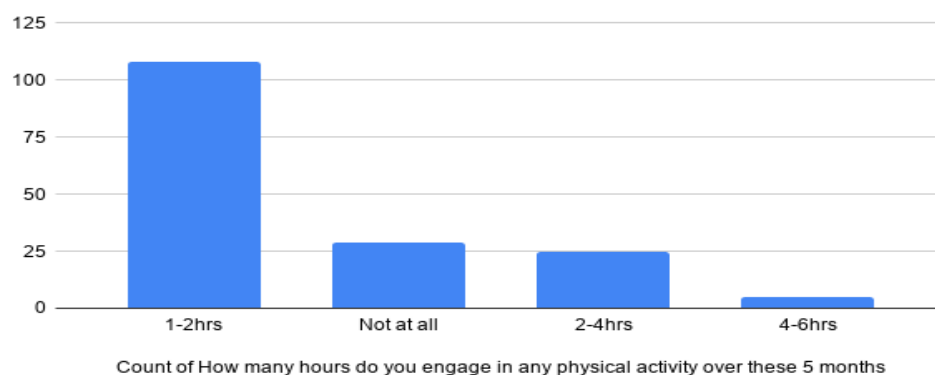


Figure 3

Above figure illustrates that most of students (108) were engaged themselves in physical activity during this lockdown period. However, there are 29(17.4%) students did not involve in any physical activity.



Figure 4

Figure 4 showed that most of participants (n=60) selected walking activity during 5 months of lockdown to maintain physical fitness. A healthy diet (n=32) & yoga (n=31) were other popular activities done by participants.

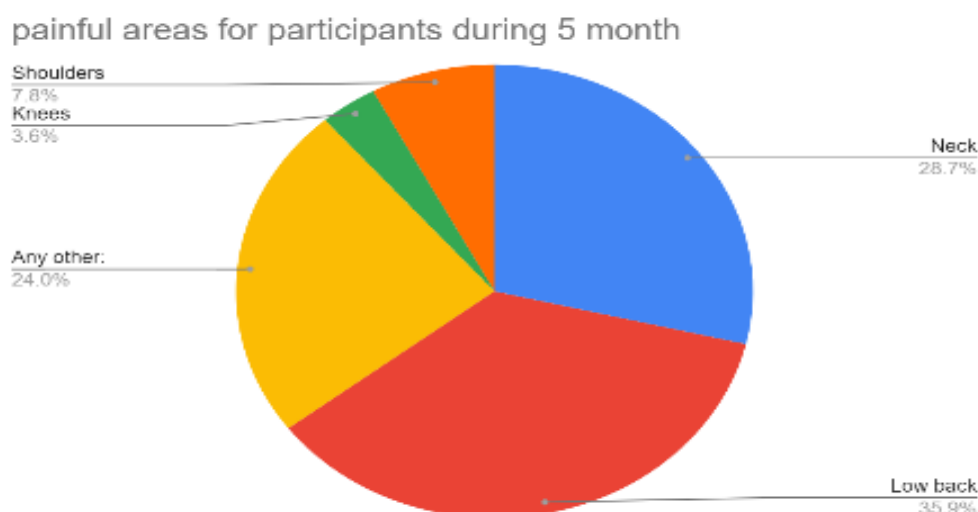


Figure 5

Figure 5 showed that more no of participants (35.9%) experienced pain in low back region followed by neck region (28.7%). very few participants (3.6%) felt pain in knee joint.

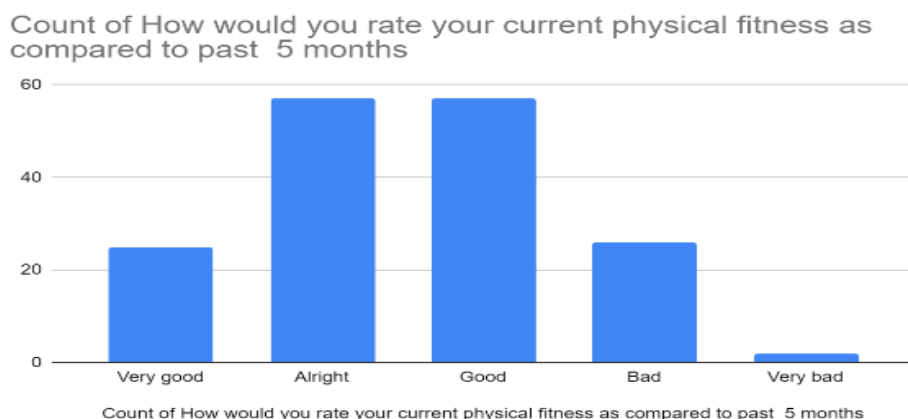


Figure 6 represents that equal no. of students reported their current physical fitness as alright(n=57) & good (n=57). However, some students reported it as bad (n=26) & very few (n=2) as very bad.

Table 4. rate of satisfaction of physical health

Grade of satisfaction	N (%)
Completely satisfied	18(11%)
Satisfied	102(62.1%)
Not at all satisfied	44(26.8%)

Table 4 showed that most people 102 (62.1%) reported that they were satisfied with their physical health during lockdown.

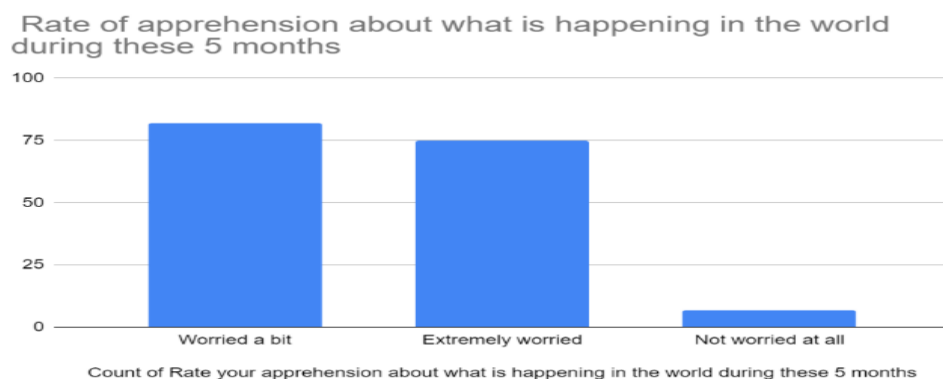


figure 7

Above figure showed that more participants (n= 157) were worried for ongoing things in world.



Table 5. rate of satisfaction with activities of daily Life during lockdown

Grade of satisfaction	N (%)
Completely satisfied	16(9.6%)
Satisfied	100(59.9%)
Not at all satisfied	51(30.5%)

Table 5 demonstrates that most of participants(n=100) felt satisfied with their ongoing activities followed by 51(30.5%) participants who reposted it as not at all satisfied.

Count of To what extent you feel that things you are doing have any purpose in your life

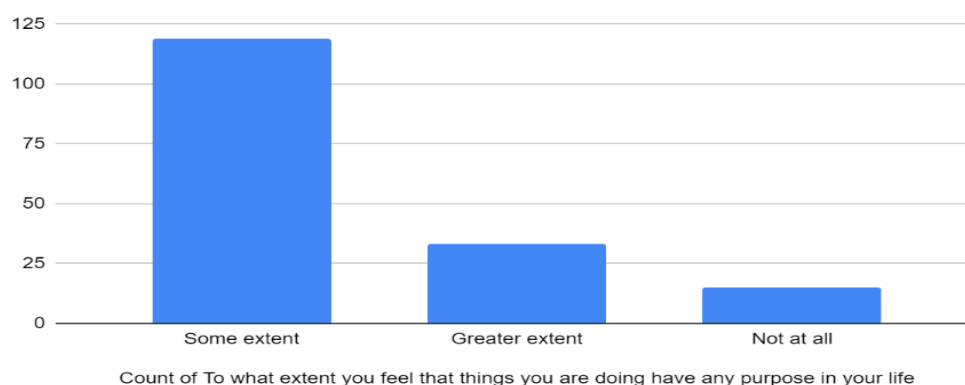


figure 8

This figure shows that most of participants(n=119) felt that their ongoing things were purposeful to some extent.

Count of In which ways you have tried to cope up with stress levels during these 5 months

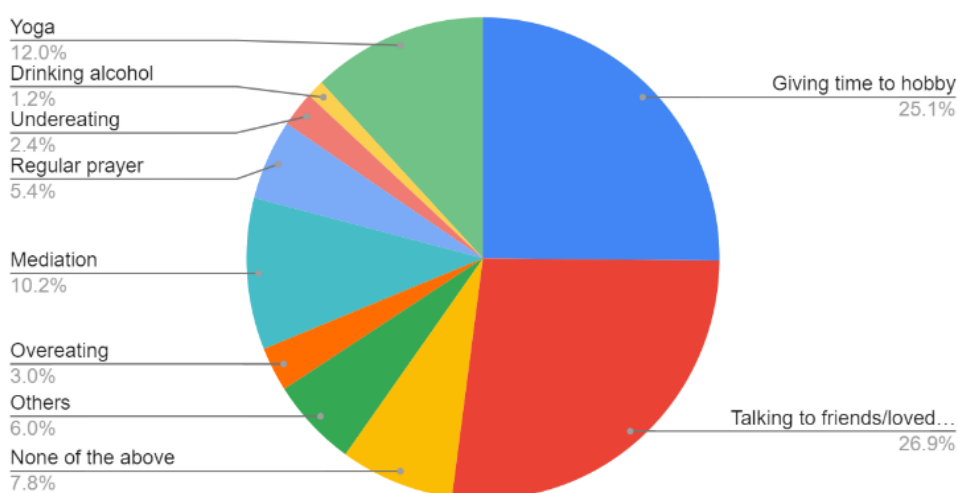


figure 9

Figure 9 shows that most of participants (26.9%) used to talk with their friends & family members to cope with stress during lockdown. Other popular way to deal with stress was indulging into a hobby (25.1%).

## **Discussion**

Lifestyle of healthcare students was a very different as compared to post lockdown conditions. During day-to-day life students were able to learn in college by personal interaction with teaching faculties. During lockdown accessibility was limited to online learning, what's app discussions, learning through recorded videos etc. during this process students were deprived from personal interaction & solving of their study related issues with their mentor. Online learning was assessed through electronic devices such as smartphones, laptops etc. continuous use of electronic gadgets may increase postural stress & individual may start preferring different awkward positions for temporary comfort.

Another aspect of lockdown for students was they were not allowed to go outside home environment. As compared to other populations student's homestay was longer. This further restricts their social participation & extracurricular sessions.

Above mentioned factors have changed a student's perception of their ongoing activities which may affect students leading to boredom & disinterest. (7)

This study was designed to investigate level of physical activity & psychological wellbeing of healthcare students. The web-based e survey was completed in 7 days via google form. Participants included in study range from age group of 18-23 years & maximum were female participants.

Study findings related to physical activity:

### **1. Rate of overall health during lockdown**

During this survey participants mainly reported their overall health as Good (35.3%) & alright (35.3%). Lockdown imposed a compulsion to stay at home for individuals. As a consequence, individual's resources of maintaining physical activity were limited. Also, stress & anxiety of ongoing things further affects overall health of individual. (8)

### **2. No. of hours spend for online learning & preferable position.**

Equal no of students was reported to indulged themselves in 2-4(44.9%) hours & 4-6(44.9%) hours of online learning daily. During these online sessions, their preferable position were sitting. Online education was implemented by educational institutions in order to minimize students' academic loss to some extent. (9)

### **3. No. of hours engaged in physical activity.**

64.7% of students were doing 1-2 hours of physical activity daily. However, 17.45 students did not perform any physical activity. Home confinement & online teaching forced students towards sedentary lifestyle with increased hours of sitting & less time for physical activities. (10,11)

### **4. Starting of new activity to maintain physical fitness.**

Survey found that walking was a preferred by maximum participants. Other popular things were healthy diet & yoga. Very few students selected exercise program me like jogging or aerobics. Restrictions for outdoor activities & online classes resulted

5. Rate your current physical fitness:

Only 15% participants reported their current physical fitness as very good. However, 16.8% students reported it as Bad & Very Bad.

6. Rate of satisfaction of physical health:

26.8% of population has reported that they were not at all satisfied with their physical fitness during these five months. Restrictions for outdoor activities & online classes resulted in reduced physical activity. This may increase decreased level of satisfaction among individuals. (8)

7. experience of pain in any region/ joint of body:

All participants reported that they experienced pain in body. Frequency of low back pain is more followed by neck pain. Participants also reported experiencing pain in shoulder area, knee area & ankle joints. House confinement which reduces level of activity among individuals. Also, online teaching which was part of daily routine of students predisposed them for increased risk of postural alterations resulting into pain in different areas of body. Even though few participants continued exercises such as walking, yoga but exercises particular for joints were not done. Results indicates that it will be useful if we develop an exercise plan related to painful sites. (8)

This will be useful for treating individuals in scenarios similar to lockdown where homestay is mandatory.

Psychological wellbeing of healthcare students

1. Hours of sleep during 5 months of lockdown

49.1% participants reported no change in sleep duration. However, remaining participants reported sleep less than 8 hours & more than 8 hours of sleep.

2. Time spend with leisure activities:

13.7% participants reported that they didn't spare any time for leisure activities.

3. Rate of apprehension for activities happening during 5 months of lockdown:

50% participants were worried extremely about ongoing things. 49.1% students were worried a little.

4. To what extent you feel that things you are doing have any purpose in your life:

71.3% participants reported that they didn't think that ongoing things have any purpose in their life.

5. In which ways you have tried to cope up with stress levels during these 5 months:

Maximum participants were indulging themselves in hobbies to relieve stress followed by yoga.

Results of the study showed that students were apprehensive about their ongoing routine & they were confused about its purpose in future life. Unexpected lockdown resulted in panic situation. Increased stress & anxiety during this period may lead to sleep pattern disturbances in individuals. Self-isolation & lack of physical activity will increase chance of sleep pattern. Deprived sleep & unhealthy eating habits can further increase stress levels in individuals(8-10). Studies on different aspects of lockdown were reported. Gaidhane et. al. reported about depression, anxiety and stress among the general population

in the time of COVID-19 Lockdown (11). Phansopkar et. al. emphasized on Musculoskeletal Check in Smartphone Overuse in Covid 19 Lockdown Phase (12). Specific studies evaluated the social and behavioral aspects of lockdown (13-15). Agrawal et. al. reported on COVID-19 and its financial effects on the dental fraternity and health-care workers(16). Anjankar et. al. reported about the Impact of COVID-19 on Medical Education System(17). Bakshi et. al. (18) and Balwani et. al. (19) assessed psychological effects of Covid in various groups. Lakkadsha et. al. reported on Pre-Eminence of Moderate to Robust Physical Activity in Battling COVID (20). Khatib et. al. also reported on effects of SARS-CoV-2 (21).

### **Conclusion**

COVID-19 pandemic was an emergency situation. This pandemic introduced lockdown & online teaching in day-to-day life of healthcare students. These two factors were unexpected & unavoidable. Students lifestyle was changed. This change in lifestyle during lockdown leads to decreased physical activity & students were more vulnerable for pain in different areas of body.

This lockdown also affected their self-perceived psychological wellbeing. Students were worried of purpose of ongoing things in their life. At the same time, they were trying to cope up with this stressful situation with various measures.

Helpful strategies to deal with increased stress & reduced physical activities for healthcare students can be implemented for students which will be useful in case repeated lockdown.

### **Limitations of study**

Small sample size

Study aimed towards healthcare students & this limits generalization of result.

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