

Original Research Article**“ACADEMIC, SOCIAL AND EMOTIONAL IMPACT OF THE COVID-19 PANDEMIC ON PRE-FINAL AND FINAL YEAR MEDICAL STUDENTS IN A TERTIARY CARE INSTITUTE IN TAMIL NADU”**

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ABSTRACT:

Background: COVID-19 has led to unprecedented disruption in the health care education system. It has restricted availability of bed-side teaching for students and the exposure to clinical cases has been severely limited. Continuation of medical education was done by online teaching methods. Students have been cooped up at home in the last 9 months. Many of them would have been socially and technologically at a disadvantage.

AIM: To study the impact of COVID-19 on emotional, academic, social aspects of final year medical students, with following objectives,

1. To assess the effectiveness of online teaching methods.
2. To determine the technological challenges faced by the students during the e-learning system.
3. To study the social and economic (emotional) impact of pandemic on medical students.

MATERIAL AND METHODS:

A questionnaire has been used to assess various academic, social and emotional challenges of pre-final and final year medical students at a tertiary care institute in South India. This questionnaire has been divided into two sections. The first part deals with the academic challenges faced and the second section deals with the social and emotional impact on these students.

TYPE OF STUDY- Descriptive (Cross sectional study).

Study period: 3 months

SAMPLE SIZE- 237.

PLACE OF STUDY- Karpagam Faculty of Medical sciences and research, Coimbatore.

INCLUSION CRITERIA: All pre-final and final year medical students who were willing to participate in the study and present during that period

EXCLUSION CRITERIA: Medical students who were not interested to participate in the study.

METHODOLOGY: Approval from Institutional ethical committee was sought. A written informed consent (English) was sought from the students participating in the study. Before administering the test students were briefed about questionnaire and the purpose of the study. Voluntary participants were included in the study.

Statistical Analysis: The data was collected, compiled and compared statistically by frequency distribution and percentage proportion. Quantitative data variables were expressed by using Descriptive statistics (Mean \pm SD). Qualitative data variables were expressed by using frequency and Percentage (%).

CONCLUSION: For many of us teachers, total virtual teaching has been a new experience. With the information available we can prepare ourselves as teachers in case of similar challenges which we might face in future. The responses in both academic and social sections will equip us better to give a wholesome support in future if need be. The understanding and betterment of e-learning resources can help in achieving the desired academic and social goals in training medical students.

Key words: virtual teaching, e-learning resources, continuing medical education

INTRODUCTION:

In December 2019, the Corona virus Disease 2019 (COVID-19) was first reported in Wuhan, Hubei Province, China. It is characterized by pneumonia-like symptoms. The virus spread exponentially, resulting in an outbreak throughout China and the world. Subsequently, on March 11, 2020, World Health Organization declared it as a worldwide pandemic ^[1]. As of October 2, 2020, there were more than 34.3 million confirmed cases of COVID-19 globally and over 1,000,000 associated deaths in more than 180 countries ^[2,3].

COVID-19 has caused unprecedented disruption to the medical education process and to healthcare systems worldwide ^[4]. The highly contagious nature of the virus has made it difficult to continue lectures as usual, thus influencing the medical education process, which is based on lectures and patient-based education ^[5]. The COVID-19 pandemic has put people at risk of developing life-threatening conditions, presenting substantial challenges for medical education, as instructors must deliver lectures safely, while also ensuring the integrity and continuity of the medical education process.

These challenges have resulted in limited patient care due to the focus on COVID-19 patients, which restricts the availability of bedside teaching opportunities for medical students⁽⁶⁾. Medical training through clinical rotations have been suspended ^[7]. Other challenges include a fear that medical students may contract the virus during their training and may transmit it to the community ^[8]. Additionally, students are required to stay at home and to abide by social distancing guidelines. Therefore, we must develop a medical education curriculum that provides

students with opportunities for continuous learning, while also avoiding delays due to the pandemic ^[9].

Some of the most commonly proposed methods include scheduled live online video lectures with interactive discussions and the utilization of several different programs or self-study online recorded lectures made available online for medical students in each university ^[10, 11]. However, educators must plan to continue to provide medical education and patient care during the pandemic. These services should be conducted in accordance with ethical frameworks that are based on beneficence and the professional virtues of courage and self-sacrifice ^[12]. Virtual clinical experience was another method proposed in response to the suspension of clinical clerkship rotations. This would permit medical students to play the role of a healthcare professional by interviewing patients, working with attendants to plan treatments, helping with paperwork, and counselling patients about their illness and prognosis ^[13].

There have been significant changes in the medical education system during the pandemic. Introduction of virtual learning as a part of their regular curriculum has created an impact on their academic knowledge and clinical skills. In view of the restriction in movement and social gatherings, there has been a breach in their regular social routine which also triggered their mental stress. The reason this questionnaire has been designed is, to assess the impact of the pandemic on the academic, social and emotional aspects.

OBJECTIVES: To study the impact of COVID-19 on emotional academic, social and aspects of final year medical students, with following objectives,

1. To assess the effectiveness of online teaching methods.
2. To determine the technological challenges faced by the students during the e-learning system.
3. To study the social and emotional impact of pandemic on medical students.

MATERIAL AND METHODS:

Study Design: Institutional based Prospective observational study.

Study area: Karpagam Faculty of Medical sciences and research, Coimbatore.

Study Period: 3 months.

Study population: Pre-final and Final year MBBS students in Karpagam Faculty of Medical sciences and research, Coimbatore.

Sample size: 237 students.

Sampling method: Simple Random sampling method.

INCLUSION CRITERIA: All pre-final and final year medical students who were willing to participate in the study and present during that period

EXCLUSION CRITERIA: Medical students who were not interested to participate in the study.

Ethical consideration: Institutional Ethical committee permission was taken prior to the commencement of the study.

Study tools and Data collection procedure:

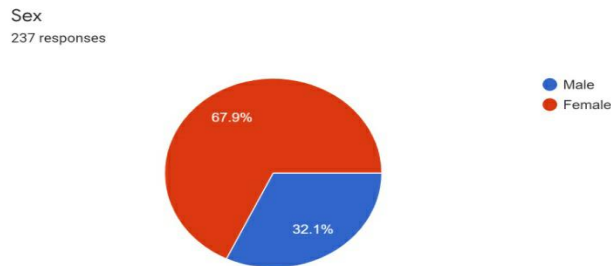
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was divided into two sections. The first part dealt with the academic challenges faced and the second section dealt with the social and emotional impact on these students. Approval from Institutional ethical committee was sought. A written informed consent (English) was sought from the students participating in the study. Before administering the test students were briefed about questionnaire and the purpose of the study. Voluntary participants were included in the study.

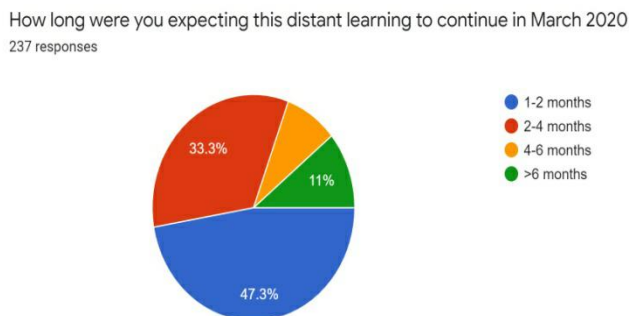
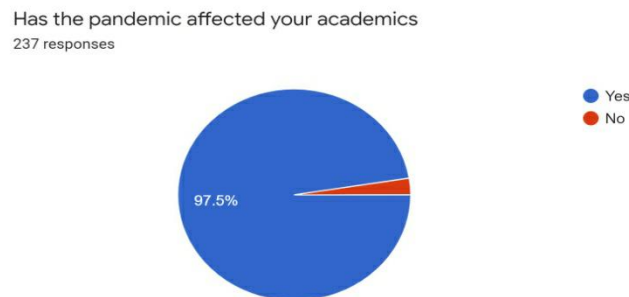
Statistical Analysis: The data was collected, compiled and compared statistically by frequency distribution and percentage proportion. Quantitative data variables were expressed by using Descriptive statistics (Mean \pm SD). Qualitative data variables were expressed by using frequency and Percentage (%).

OBSERVATIONS AND RESULTS:

Figure 1: sex distribution

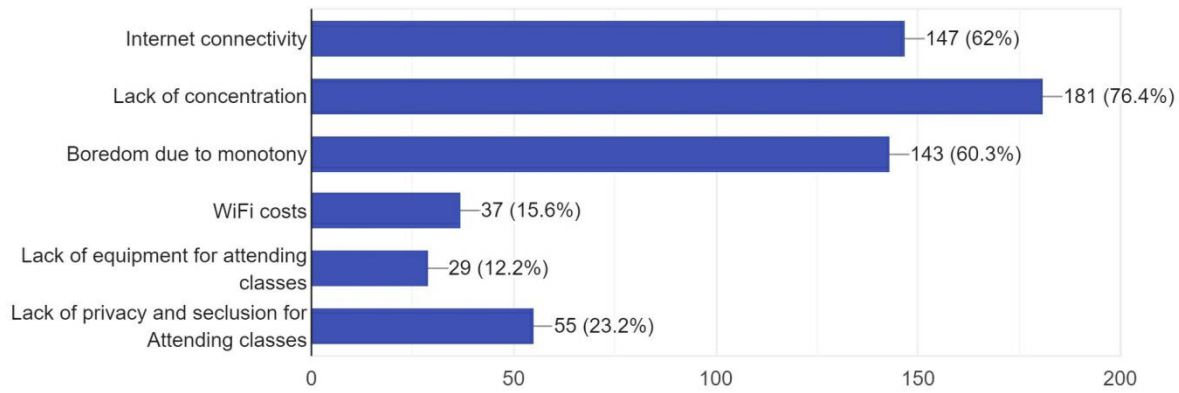


Academic, social and emotional impact in the study population



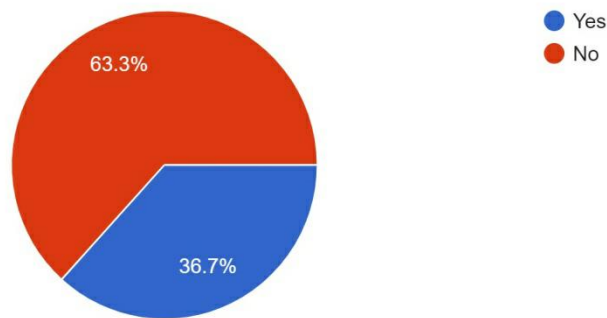
What are the challenges faced in online learning

237 responses



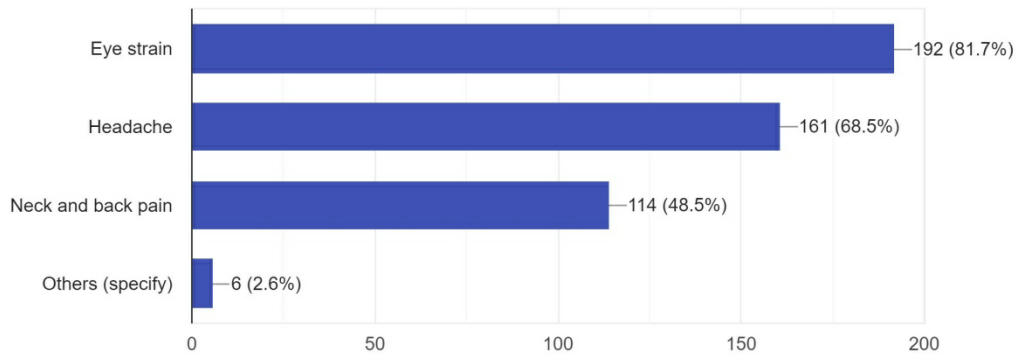
Has the online classes been effective

237 responses



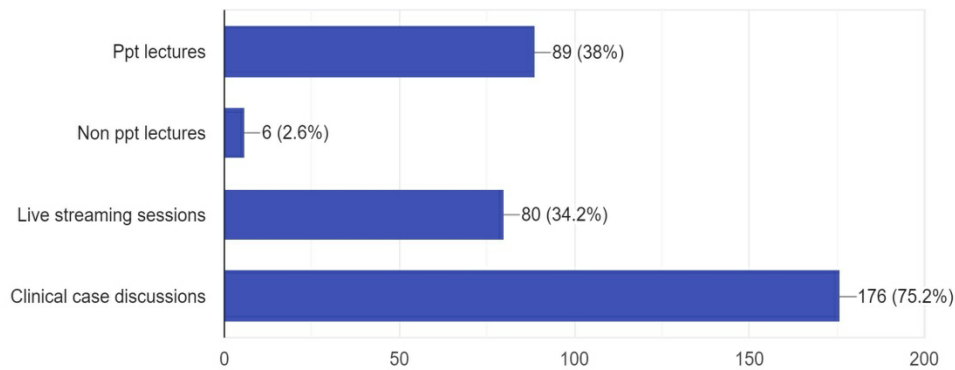
What physical discomforts did you face due to long screen time

235 responses



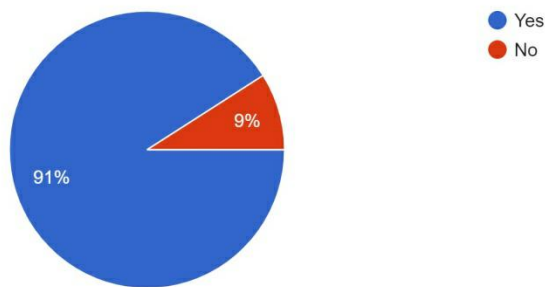
Which sessions were most helpful

234 responses



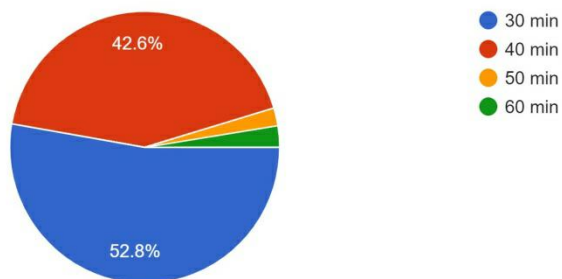
Is there a difference in understanding and retaining lessons in online classes

233 responses



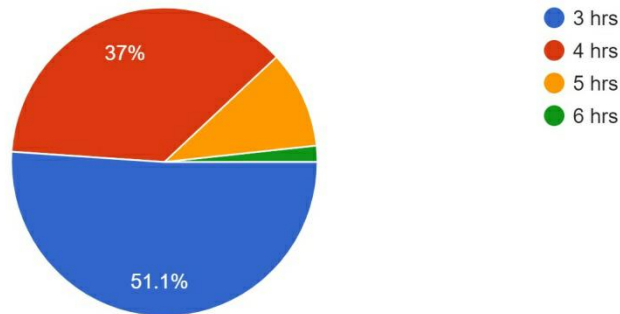
How many minutes / hours per session would help you to concentrate better?

235 responses



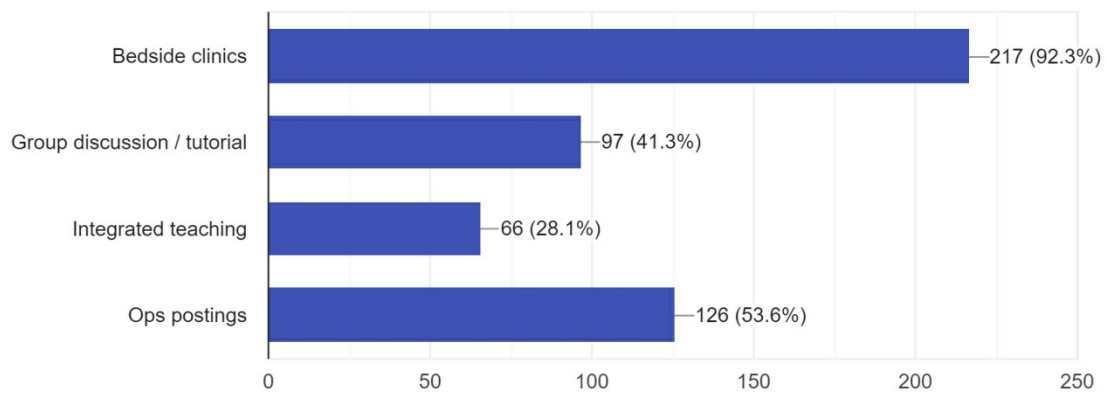
What is the optimal duration per day for class / screen time

235 responses



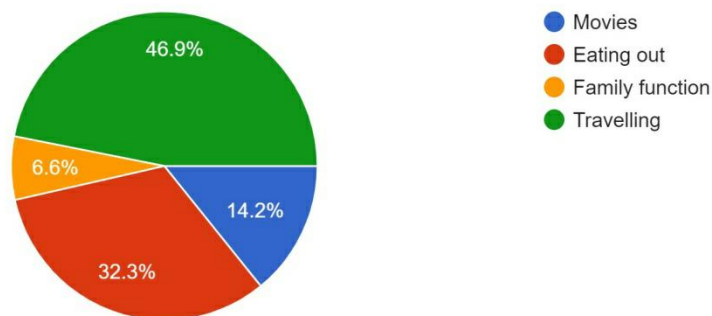
Which kind of medical training was most lacking with online Classes (can choose multiple options)

235 responses



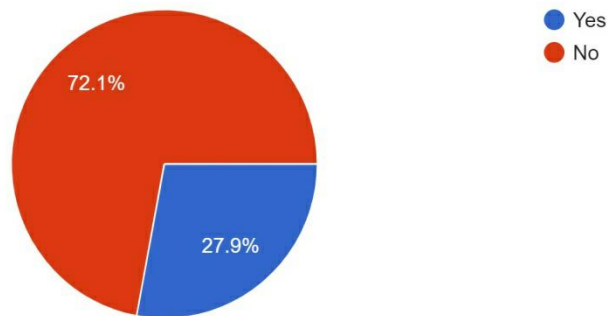
What side you miss most in your social life

226 responses



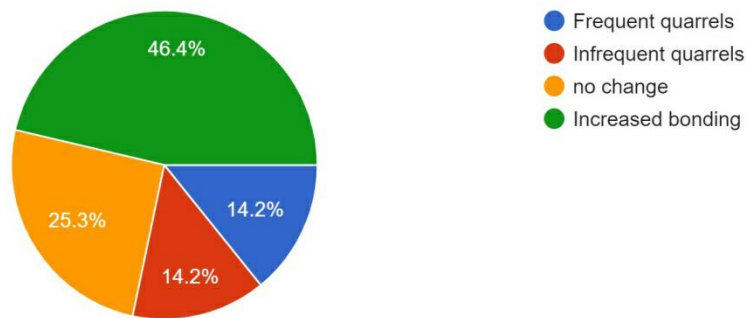
Did you feel that you lost your personal space

233 responses



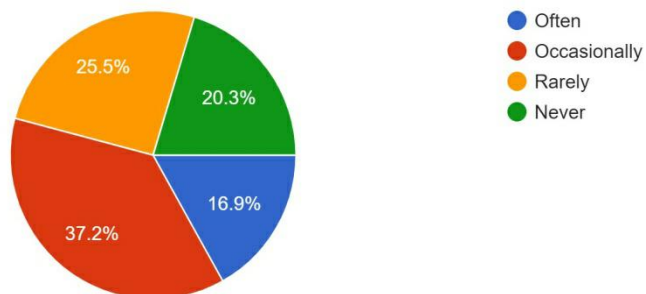
Which one of these will suit you best in relation to your interpersonal status with sibling / parents

233 responses



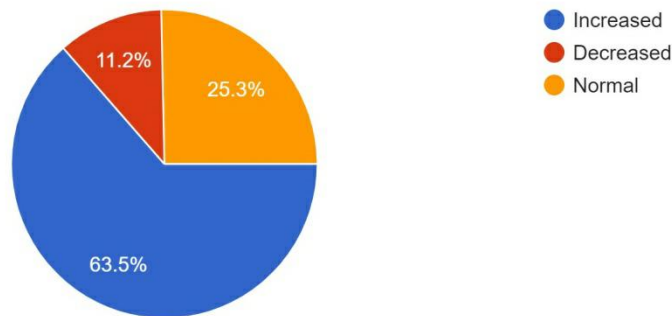
Did you feel lonely or depressed during this period

231 responses



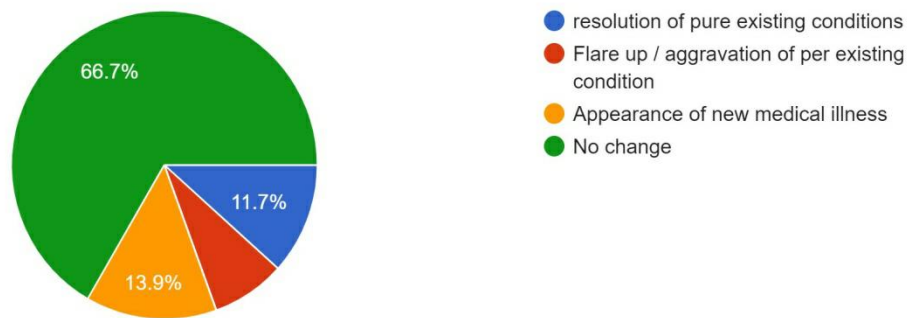
Did this period affect your weight

233 responses



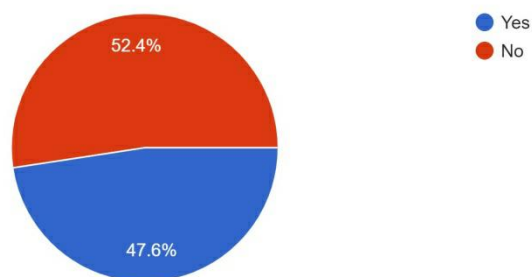
What is the effect of pandemic on your health

231 responses



Did you face difficulty in accessing healthcare / approval of healthcare schemes during this pandemic

229 responses



Discussion

237 MBBS students responded to the standardized google questionnaire.

Academic Impact: The COVID- 19 pandemic has brought about unprecedented change to many aspects of our lives. The educational system everywhere had to undergo a major change to ensure learning continued effectively. It shifted from direct in person learning to online/ e - leaning. There were considerable obstacles but the system has evolved and stabilized.

Medical education faced its own unique obstacles as practical learning via clinical rotations was curbed. This was circumvented to a great extent by simulated case discussions and pre recorded video sessions on patient examinations .

More than 95 % of the students felt that the pandemic has affected their learning significantly with more than half the students feeling it was not as effective as direct learning comparable to other studies by Khaled et al ,Kaur et al, Kunal Chaturvedi et al, Muthu prasad T et al ^(17,18,19,20). At the start of the pandemic most students did not anticipate the pandemic to last for almost 2 years. Therefore there could have been loss of effective learning during the initial months followed by a period of adjustment.

- The most commonly experienced difficulty during online learning in our study was lack of concentration. Almost all students opined that 30-40 minute sessions would have been most effective with short breaks in between, with the total duration being 3-4 hours per day of multiple subjects to circumvent the monotony.
- Second most common difficulty faced , was problems with internet connectivity especially for those in rural areas .Issues pertaining to internet connectivity and other technical details were reported as the main drawback in e-learning in many studies^(20,21,22). Technical difficulties were faced by the teaching faculty as well, more so during the initial stages. Having an IT support team helped ease out most of the issues and also ensured the smooth functioning of e-learning during the entire period.
- Majority of the students felt that there was considerable disparity between understanding and retention of information which was compounded by difficulty in addressing doubts in e-learning. Difficulty in clearing doubts was also cited in the study by Abdullh alQhtani et al⁽²³⁾.
- Though attempts were made to diversify teaching modality, there were many limitations.The major inherent disadvantage of online learning is the lack of bed side clinics and practical interactions/examinations of patients. This learning is extremely critical for every medical graduate not only to gain practical clinical knowledge but more importantly to learn interacting with patients with compassion, counselling them and understanding the impact of the disease from the patients perspective. This is precisely what is intended by the AETCOM model of training the Indian medical graduate. This is of paramount importance in shaping a doctor. Interestingly students also concurred that clinical bed side teaching was the most preferred and the most missed teaching modality. Clinical teaching was attempted using simulated case scenarios, images of clinical signs and videos of clinical examination - which was the most well received method too. Studies by Abdullh alQhtani et al, Khadijah Mukhtar et al^(23,24) have also found that the balancing practical and theoretical teaching ,was less effective in online education.

- The other big challenge was conducting regular assessments and their validation . More than half the students agreed that internal assessments were useful and majority agreed that post assessment feed back was very useful. One of the major drawbacks faced was difficulty in monitoring the sincerity of the attempt. More than half the students agreed they did not attempt the assessments honestly . The most widely referred source was the text book. Surprisingly internet reference during assessments was less..

Physical effect of online classes- Prolonged screen time is associated with many physical and psychological effects associated with poor sleep, insulin -cortisol dysregulation ,impaired vision and depression to name a few ⁽²⁵⁾.Owing to the pandemic, students were inevitably subjected to an increased e-learning screen time of 6-7 hours/day, excluding their leisure screen time. The most common physical discomfort caused in our study was eye strain followed by headaches and neck/shoulder pain. Similar findings were present in other studies by M anisha sharma et,Al hadidi et al,Anuradha et al^(26,27,28) where, prolonged screen time of more than 3 hours was associated with problems related to mental health and physical health in terms of eye sight,sleep deprivation. When it was more than 6 hours in a non-ergonomically designed device, it was associated with musculoskeletal discomfort/ disorders.

Social impact:Besides academics, a regular college life is also the time to acquire many skills for independent living and has a strong social influence . This holistic experience at a very impressionable age, plays a major role in shaping their careers and life. Understandably therefore almost all students said they missed regular college life , in particular socializing with friends. In the study by Kaleed setan et al⁽¹⁷⁾ students felt that the pandemic had a negative impact on social relationships .

Of all the social activities missed, travelling was the most, followed by eating out .

This decrease in social activities probably contributed to the reduced expenditure during the lockdown .

Interestingly though more than half the students said they preferred staying at home compared to the hostel and almost all of them were happy to be home.

Interpersonal relationships Majority agreed that they had lost some personal space but staying together had also strengthened their relationship with their family , with most of them helping out with cleaning and cooking chores at home. This was contrary to the findings by Jenna R Cassinat et al ⁽²⁹⁾ where they found considerable family stress during the pandemic lockdown which had a negative impact on inter personal relationships. This contradiction could probably be because of differences in cultural practices. Indian society is collectivistic and favours social cohesion ^(30,31,32) where the traditional joint family system is still practiced in many places and even within nuclear families psychological interdependence is high.

Psychological Impact Almost 80% students felt they experienced signs of depression at varying frequencies similar to studies from all over the world ^(17,33,34,35).The various reasons cited for these have been the uncertainty of the situation, illness/death of family members, fear of contracting the illness, loss of jobs in family members, loss of an active social life, restrictions of movements imposed by the lockdown to name a few. Studies have also documented that

psychological impact was more in the female population and those in a financial unstable situation

Lifestyle impact: Staying confined to home coupled with the unpredictability of the situation and signs of depression led to a variety of changes in lifestyle, food habits, exercise patterns and other coping mechanisms. More than half the students agreed that their weight had increased during this period. Other studies have also showed variable rates of weight gain during this period⁽¹⁹⁾. In spite of this, more than half of them expressed that it had not altered any pre-existing illness for them.

Students were divided almost equally when asked if there was any difficulty in accessing health care or related schemes during this period. Studies have documented that availability of access to chronic care had deteriorated^(37,38), but on the other hand telemedicine services increased which bridged this gap to a certain extent⁽³⁹⁾.

On the brighter side, lockdown led to a surge in people, acquiring new skills to cope with the boredom. Most students said that they learnt some form of cooking or baking. This finding was similar to the study by Khaled Seetan et al⁽¹⁷⁾. The other skills learnt commonly were creative writing, new regime body building and other art forms.

Around 23% had taken part in social causes with food distribution being the most commonly done actively followed by helping out with monetary benefits.

There was also an increase in social media usage owing to boredom. Hours spent on recreational screen time varied between 3-4 hours per day. Social media presence has shown to have had a positive effect on dissemination of information, creating awareness and has served as a buffer to reduce anxiety^(40,41). About 70% said of all the social medias used they spent most time on Instagram similar to that documented by Kunal Chaturvedi et al⁽¹⁹⁾.

CONCLUSION:

In our study, it was found that methods which were used as online teaching had not been effective in making the students understand the subject better. Methodology of online teaching should be improved in such a way that students will understand and assess the subject in a better way. Methods like Interactive videos and interactive sessions, live case presentations and sharing the study materials before the classes will be more effective, interesting and helpful in understanding the topic and subject.

For many of us teachers, total virtual teaching has been a new experience. With the information available we can prepare ourselves better in case a similar challenge arises in future. The responses in both academic and social sections will equip us better to give a wholesome support in future if need be. The understanding and betterment of e-learning resources can help in achieving the desired academic and social goals in training medical students. The faculty should be trained regularly to be better equipped in e learning methods. As a part of faculty upgradation programs these training sessions have to be incorporated. The future of medical education might be hybrid, which makes it imperative for all students and teachers to adapt to the changing times.

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