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IMPACT OF COVID-19 PANDEMIC ON MEDICAL EDUCATION IN A TERTIARY CARE CENTRE IN CENTRAL INDIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: The COVID-19 pandemic has been presenting substantial challenges for medical education. Instructors must deliver lectures safely as well as ensure the integrity and continuity of the medical education process. It is therefore important to study the impact of Covid 19 on medical education. **Methods:** A cross sectional study was conducted among 325 undergraduate Medical Students and Interns in a tertiary care hospital in Central India using propability proportional to size sampling. The study involved a questionnaire requarding impact of Covid 19 on Medical education that was distributed as Google Form by means of social media. **Results:** Study participants belonged to the age group of 18-30 years.54% were Male and 46% were Female.95.4% study participants used smart phones for medical education.50.2% had suspended or postponed educational programme due to pandemic.56% faculty suspended clinical training program due to the COVID-19 pandemic **Conclusions:** The study results shows that Covid 19 continues to have significant impact on medical education. As we face the prospect of further waves of virus transmission, we must take certain measures and make changes to minimize the effects of the Covid-19 outbreak on medical education and on the progression of training.

KEYWORDS -: Covid-19, Medical education, Medical students.

INTRODUCTION

In December 2019, the Coronavirus 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] COVID-19 has caused unprecedented disruption to the medical education process and to healthcare systems worldwide.[2] 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.[3]

The COVID-19 pandemic puts 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. Consequently, they are unable to complete their clerkships.[4] Medical training through clinical rotations has been suspended.[5] Other challenges include a fear that medical students may contract the virus during their training and may transmit it to the community.[6] Additionally, students are required to stay at home and to abide by social distancing guidelines. Through this study we have aimd to provide an overview of the situation experienced by medical students during the COVID-19 pandemic.

Study objective

1. To study the impact of the COVID-19 pandemic on medical education in a tertiary care hospital in Central India.
2. To assess the technology availability and its usability among medical students.

METHODS

A cross sectional study was conducted in a tertiary care hospital in Central India from October 2021 to January 2022.Study participants were students pursuing MBBS course and MBBS Interns.MBBS Students and Interns who gave consent for the study were included in the study.

Sample size- With reference to the study done by Alsoufi A. et al., 97.1% of the participants reported suspended lectures due to Covid 19 pandemic
Absolute precision = 2%
Desired Confidence Level (1-α) %= 95%

$$n = \frac{Z^2_{1-a/2} x\ p\ x\ (1-p)}{d^2}$$

Calculated Sample size = 270
Considering 20 % Non response rate, Final Sample Size:270+54=324
Since there were 250 students each in 1st and 2nd year MBBS and 200 students in 3rd year,Final year MBBS and MBBS Interns., Probability Proportional to Size (PPS)sampling was done as follows
1st year MBBS=74 Students
2nd year MBBS=74 Students
3rd year MBBS=59 Students
Final year MBBS=59 Students
MBBS Interns=59 Students.

A total of 325 students were taken as study participants.Data was collected using a preformed,semistructured questionnaire requarding impact of Covid 19 on Medical education that was distributed as Google Form by means of social media(watsapp,email). Data was analysed using Microsoft excel 2007 and statistical software Epi Info 7. Approval from the Institutional Ethics Committee was sought.

RESULTS

➢ Basic demographic characteristics

148(46%) of the study subjects were female and 177(54%) of the study participants were male. Age of the study participants ranged from 18-30 with mean age 21.55(1.67) years. 240(73.8%) study participants are Hostellite while 85(26.2%) are Day Scholar. 216(66.5%) of the respondents reside in urban area and 109(33.5%) reside in rural area.

➢ Assessment of technology Availability and Usability among study participants

Table 1: Source of Covid -19 knowledge.

Source of Covid -19 knowledge	Total (%)	Preclinical (%)	Clinical (%)	P Value
WHO, CDC, UpTo Date and official sources	206 (63.4%)	94 (45.6%)	112 (54.3%)	0.9648
Local official statements	142 (43.7%)	59 (41.5%)	83 (58.4%)	0.2037
Social media	234 (72%)	115 (49.1%)	119 (50.85%)	0.03628
Friends, neighbors and relatives	171 (52.6%)	78 (45.6%)	93 (54.3%)	0.9770
Local and international media sources	190 (58.5%)	92 (48.2%)	98 (51.5%)	0.2162

Table 1: Shows the difference observed among medical student's source of Covid -19 knowledge among pre-clinical (first, second,) and clinical years (third, fourth and internship years). Major source was found to be social media 234(72%) with p valve statistically significant.

Study results shows that 46.2% had good and 19.4% had acceptable level of proficiency in using various electronic devices. 163(52.2%) felt that the quality of available internet service is good. 310(95.4%) personally owned and utilized smart phone for their medical education.

Education of the students mainly depended upon Self-study utilizing various educational sources i.e 275(84.6%). Main use of internet during COVID-19 pandemic was for Medical Education and E-learning i.e 294(90.5%) followed by Social Media and E-mail 221(68%).

➢ Effect of COVID-19 on the medical education process

Table 2.

1.Did you suspend your educational program (of your own volition) recently due to any of the following reasons?	Response (n)	Response (%)
Have not suspended educational program	254	72.8%
Suspended educational program due to the civil unrest/relocation from residence	11	03.4%
Suspended educational program due to financial problems	14	4.3%
Suspended educational program due to my social status and personal responsibilities	13	04%
Suspended educational program due to other reasons	33	10.2%
2.Did the faculty suspend or postpone the educational program in response to COVID-19 pandemic?		
YES	162	49.8%
NO	163	50.2%
3.Did your faculty suspend your clinical training program due to the COVID-19 Pandemic?		
Yes	182	56%

No / Not currently in training	143	44%
4.How are you spending your time during this period of COVID-19 pandemic? (multiple choices)	**Response (n)**	**Response (%)**
Feel unwell and have implemented self-isolation	64	19.7%
Looking after ill patient / family member	47	14.5%
Preparing for medical license exams / Post-graduate exams	70	21.5%
Volunteering activities	50	15.4%
Medical research activities	27	8.3%
Medical education through online platform	238	73.2%
My medical education program at the university was not disrupted	45	13.8%
Spending more time with family	204	62.8%
Exercise and improving physical fitness	128	39.4%
Play video games	69	21.2%
Self-learning through a program not provided by faculty	125	38.5%
Watch TV	138	42.5%
Read non-medical books	97	29.8%
Rest and relax	177	54.5%
5.Did the COVID-19 pandemic affected your career plan and future interest?		
It has affected the career plan of future interest	148	45.5%
Became interested in public health / infectious diseases	53	16.3%
Has not affected career plan or future interest	124	38.2%

Table 2 shows the effect of COVID 19 on medical education process.162(49.8%) of the study participants said that the faculty suspended or postponed the educational program in response to COVID-19 pandemic.182(56%) responded that the faculty suspended your clinical training program due to the COVID-19 Pandemic.

- **Medical students' attitudes toward the COVID-19 pandemic**

Table 3

Attitude	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Better to help out in hospitals during the pandemic	4(2.1%)	4(1.2%)	94(28.9%)	**168(51.7%)**	55(16.9%)
Feeling wasting potential to study due to COVID-19	7(2.2%)	47(11.4%)	101(31.1%)	**130(40%)**	50(15.4%)
Worried about losing chances to apply for specialty training due to COVID-19	4(1.2%)	36(11.1%)	**133(40.9%)**	118(36.3%)	34(10.5%)
COVID-19 has negatively affected my personal well-being	12(3.7%)	46(14.2%)	102(31.4%)	**119(36.6%)**	46(14.2%)
Worried about being exposed to COVID-19 during clinical practice/training	15(4.6%)	30(9.2%)	93(28.6%)	**142(43.7%)**	45(13.8%)
Worried about being exposed to COVID-19 in the community	7(2.2%)	15(4.6%)	88(27.1%)	**175(53.8%)**	40(12.3%)
COVID-19 has no effect on my educational progress and career	74(22.8%)	**122(37.5%)**	80(24.6%)	45(13.8%)	04(1.2%)
COVID-19 has no effect on enrolling in specialties requiring safe care	38(11.7%)	86(26.5%)	**164(50.5%)**	31(9.5%)	06(1.8%)
Admire the way medical faculty efforts to provide guidance for career development	11(3.4%)	32(9.8%)	91(28%)	**144(44.3%)**	47(14.5%)
Concerned about the effects of COVID-19 on training progression timeline	00	6(1.8%)	102(31.4%)	**172(52.9%)**	45(13.8%)
Content with the response of local authorities to the COVID-19 pandemic)	12(3.7%)	28(8.6%)	**163(50.2%)**	110(33.8%)	12(3.7%)

Content with the response of medical students' associations to COVID-19	4(1.2%)	8(2.5%)	**138(42.5%)**	131(40.3%)	44(13.5%)
COVID-19 affected my physical well-being and overall health	6(1.8%)	49(15.1%)	97(29.8%)	**133(40.9%)**	40(12.3%)
COVID-19 affected my mental well-being and personal mood	9(2.8%)	30(9.2%)	79(24.3%)	**145(44.6%)**	62(19.1%)
COVID-19 affected my social wellbeing and social activities	6(1.8%)	20(6.2%)	70(21.5%)	**165(50.8%)**	64(19.7%)
COVID-19 affected my intellectual wellbeing and ability to learn	7(2.2%)	50(15.4%)	95(29.2%)	**127(39.1%)**	46(14.2%)

Table 3 shows Medical students' attitudes toward the COVID-19 pandemic. 168(51.7%) said that they would better to help out in hospitals during the pandemic. 172(52.9%) were concerned about the effects of COVID-19 on training progression timeline. 165(50.8%) said that COVID-19 affected their social wellbeing and social activities.

DISCUSSION

This study was done with an intention to assess medical students' circumstances during the COVID-19 pandemic. The study results shows that the pandemic had substantial impact on medical education.

In this study 148(46%) of the study subjects were female and 177(54%) of the study participants were male. Age of the study participants ranged from 18-30 with mean age 21.55(1.67) years.The study findings show that majority of the students use social media 244 (75.1%) as a source of COVID 19 knowledge. More than 50 % of the study participants said that their physical, mental, social and intellectual well being was affected by COVID 19 pandemic.

While, in the study by Dr Alsoufi A. et al., in Libya, Participants were predominately female; the sample included 2,390 females (71.4%) and 958 (28.6%) males. (97.1%) participants reported suspended lectures and educational programs due to the COVID-19 outbreak, while 2,879 (86%) reported that their medical school had suspended clinical training and laboratory skills training. Only 162 (4.8%) participants reported that they were in training, and 274 (8.2%) had volunteered as healthcare allied forces during COVID-19.

While study done by Dhahri et al., at Lahore Pakistan, 1753 (65.9%) were female while 908 (34.1%) male participants. Most of the educational institutions (n = 2486, 93.4%) closed timely and appropriately during COVID-19 pandemic.[16]

Giliyaru, et al. reported in his survey that COVID-19 pandemic has had deleterious effect on the education, training, and well-being of the medical trainees.[17]

In this study 162(49.8%) of the study participants said that the faculty suspended or postponed the educational program in response to COVID-19 pandemic. 182(56%) responded that the faculty suspended your clinical training program due to the COVID-19 Pandemic.

CONCLUSION

The study results show that Covid 19 continues to have an impact on medical education.As we face the prospect of further waves of virus transmission, we must take certain measures and make changes to minimize the effects of the Covid-19 outbreak on medical education and on the progression of training.

There is a critical need for academic coaching programs that will help students engage in continued learning with supervision and follow-up by their teachers, as this will prevent students from becoming less motivated, and will increase communication skills between learners and educators.Further studies should be done to understand and similarly find solution for continuation of medical education for future medical aspirants.

Limitations

The study has all the limitations of a cross sectional study. Since the study has been done in a specific setting, the study results cannot be generatised.

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Conflict of interest

None declared

Ethical approval

The study was approved by the Institutional Ethics Committee.

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