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Original Research Article

Effect of Lockdown Due to COVID-19 on Medical Education: Perspective of Medical Students about Online Classes

Sujata Gupta[1], Suresh Kotwal[2], Sonika Sangra[3], Sudesh Singh[4]*, Wahida Kouser[5]

[1]Epidemiologist (AP) Department of Community Medicine GMC Kathua, J&K
[2]AP Department of Community Medicine GMC Doda, J&K
[3]AP Department of Community Medicine GMC Kathua, J&K
[4]AP Department of Pediatrics GMC Kathua, J&K
[5]AP Department of Community Medicine GMC Rajouri, J&K

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Corresponding author: Dr. Sudesh Singh
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Abstract

Introduction: The World Health Organization declared COVID-19 as a pandemic on 11th of March 2020. This pandemic of covid -19 had serious implications for public institutions especially due to lockdowns. As a result of lockdowns, E-learning has rapidly emerged as an alternative to traditional classroom-based education. The main concerns among medical students is the quality of medical education due to online classes.

Objectives: This study was conducted to assess perceptive of online teaching among medical students of new medical colleges of Jammu.

Methods: This was a Cross-sectional study conducted among 389 medical students of new government medical colleges of Jammu division of Jammu & Kashmir situated in North India. The survey questionnaire included questions asking about socio-demographic data such as sex, age, phase of study etc. and their attitude towards online classes. Data retrieved from the online survey was entered into Microsoft Excel and then analyzed using SPSS version 25.A univariate analysis was used to explore the associations between sample characteristics and the perception of online classes during the COVID19 epidemic.

Results: Majority of students (70.5%) were of view that lockdown has affected their studies .64% were not comfortable with online teaching learning method. 64.5% were not satisfied with this form of teaching and 69.2% don't want this method to continue in future.61.2 % of students were not sure about overall effect of online teaching on studies while 23.9% were of opinion that online teaching has negatively effected their studies .On applying non parametric tests residence and college of students were found to be statistically significant relationship on the effect on studies.

Conclusion: Despite the challenges posed by the covid pandemic, several resourceful initiatives like online learning techniques can be implemented to complete the curricula.

Keywords : Online teaching ,Covid 19,Lockdown, medical students

Introduction

The coronavirus disease 2019 (COVID-19) rapidly transitioned into a worldwide pandemic. This development had serious implications for public institutions and raises particular questions for medical

schools. The global pandemic due to SARS-CoV-2 has caused unprecedented changes to society, with social distancing orders taking effect across France beginning in March 2020 [1]. Similar to the national reforms made within the healthcare system such as the widespread adoption of telemedicine, the COVID-19 pandemic saw major changes within medical education, as a significant portion of the curriculum delivery had to be converted to an online format [2,3,4]

The impact of this on medical education was so powerful and unexpected, and led to serious implications and raises countless questions for the medical schools. Universities across the world have quickly reacted, announcing immediate closures. Medical education has suddenly been disrupted. More immediate concerns among medical students centre on the impact of COVID-19 on medical education [5-9].

Despite the challenges posed by the SARS epidemic, several resourceful initiatives were implemented, leading to progress in medical education. Necessity is the mother of invention," this age-old proverb finds its supreme relevance in today's scenario. It's been more than a decade since when the policymakers are advocating the use of online resources in routine teaching and practical skills (e.g., simulation laboratories). Medical teachers have promptly adapted their classes and most of them have offered online classes and tutorials to allow their students to complete their academic year [10]. In one Chinese medical school, online problem-based learning techniques were implemented to complete the curricula; these methods proved incredibly popular, to the extent that they were applied in subsequent years [11].

Maintaining standards in medical education, and minimizing the assessment disruption have been the initial aims of these urgent and sudden changes of ways of teaching [12]. For example, small-group tutorials had to be facilitated through online interactive meetings; didactic teaching in the form of lectures were either live-streamed or recorded, whilst practical clinical skills sessions had to be redesigned to adapt to digital learning. In many instances, learning activities had to be deferred, clinical rotations and patient exposures were reduced, whilst both formative and summative examinations were digitalized [13].

In India also, Government-issued "stay at home" directive in March 2020, since then online classes have become a key component in continuity of education. With the emergence of COVID, we are forced to use e-learning in form of arranging online classes for students. Medical educators all over the world are conducting online classes for students. Many of the educators, as well as students, were not used to this system, but they are tried their best to learn their respective subjects. E-learning has been used in the form of computer-assisted learning and mobile learning where course contents and audio–videotapes were mailed to students [14,15]. Many students have had e-learning useful, while some found that both traditional and e-learning should be blended [16]. The teachers have mixed reactions to e-learning. The less tech-savvy generation of teachers considers e-learning as a burden. A sudden disruption in education during Corona Virus Disease 2019 (COVID-19) has precipitated the practice of online education in a big way [17].

For medical education in Northern India region before COVID era, conventional classroom teaching was the only method known for medical teaching. This led to a change in traditional classroom-based study into home-based distant learning by medical institutions. As the change to E-learning is increasingly used during the COVID-19 pandemic, the impact of this change on the medical students of the new medical colleges of Jammu division of Northern India is not known. Our current study aimed to evaluate perceptions of

medical students towards clinical teaching adaptations implemented during the COVID-19 era.

Methodology

A cross-sectional study was conducted among students in a new government medical college, located in Jammu division of Jammu & Kashmir situated in North India. The study population consists of medical students who were enrolled at the college during the time of the study.

After obtaining ethical committee approval, the study recruited students who were willing to participate. The study was conducted from September 2021 to October 2021 and included a total of 389 participants. After obtaining written informed consent from all participants, survey was conducted using online self-administered questionnaire.

The survey questionnaire included questions asking about socio-demographic data such as sex, age, phase of study etc. and asking information regarding satisfaction of medical students about online classes. Respondents report their perception using a 5-item Likert rating scale ranging from 1(never) to 5(always) such that the total score ranges from 17 to 85.Students having score 17-36 were of the view that online mode of teaching have not been effected their studies , score between 37-54 can't say how much studies have effected and score more than and equal to 55 were effected.

The questionnaire was formatted into the Google forms, internet-based software, commonly used for data collection via personalized survey. It was preferred for its convenience, efficiency and high popularity especially in the current scenario where all educational institutions of the country were closed due to lockdown. After adding the questionnaire into the Google forms, a link for the same was generated and randomly distributed to WhatsApp groups among students college.

Data retrieved from the online survey was entered into Microsoft Excel and then analyzed using SPSS version 25. Simple frequencies and descriptive statistical analyses were performed and reported. A univariate analysis was used to explore the significant associations between sample characteristics and the perception of online classes during the COVID-19 epidemic. The Chi-square statistical test of significance was applied, and $P \leq 0.05$ was taken as a statistically significant association.

Results

Our study was conducted among medical students to study the perception of medical students about the online education.

Of 389 participants, about 62 % were females and rest were males. The majority were of age group 18 to 20 years and belong to Muslim religion. About 62 percent were of first year and 64 percent were of rural background.

Table 1: Table showing socio demographic variables of participants.

Variables		N=389	% Age
1.Age(yrs) Mean (20.12±1.16)	18-20	253	65
	>20	136	35
2.Gender	Male	149	38.2
	Female	249	61.7
3.Religion	Hindu	162	41.6
	Muslim	211	54.2
	Sikh	13	3.3
	Others	3	0.8
5.Native	Urban	142	36.5
	Rural	247	63.5

6.Phase	1	237	60.9
	2	152	39.1
7.College	GMC Kathua	138	35.5
	GMC Doda	99	25.4
	GMC Rajouri	152	39.1

In our study majority of students (70.5%) were of view that lockdown has affected their studies .More than half of the respondents (58.4%) prefer the face-to-face courses to these online classes.More than half (55%)were not satisfied with content of study material in online teaching, 64% were not comfortable with online teaching learning method .63% did not think online teaching approach is student friendly.69.2% don't want to continue online mode of teaching learning technique in future. Only 33.2% were able to access a computer with an Internet connection for online classes. 43.5% of participants reported that the lack of offline assessment and evaluation in such scenario effect your studies.

On aggregating the scores of Likert scale 61% were of the opinion that overall online classes have not effected their studies and only 24 % report this situation has effect their studies.

Table 2:Table showing the perception of online teaching among participantS

S.N.	Item	1 (Never) N (%)	2 Occasionally n (%)	3 Sometimes N (%)	4 Often N (%)	5 Always N (%)
1.	How much lockdown has affected your studies	14(3.6)	15(3.9)	86(22.1)	122(31.4)	152(39.1)
2.	How much are you able to access a computer with an Internet connection for your studies	53(13.6)	95(24.4)	112(28.8)	70(18)	59(15.2)
3.	How much are you comfortable with online teaching learning method	156(40.1)	93(23.9)	86(22.1)	28(7.2)	26(6.7)
4.	How much are you satisfied with online mode teaching	102(26.2)	112(28.8)	98(25.2)	50(12.9)	27(6.9)
5.	How much do you think that online teaching approach is student friendly	140(36)	105(27)	91(23.45)	32(8.2)	21(5.4)
6.	How fast do you think teacher responds to your query in online teaching method.	48(12.3)	85(21.9)	107(27.5)	92(23.7)	57(14.7)
7.	Do you feel involve in learning in online teaching learning method	160(41.1)	91(23.4)	81(20.8)	34(8.7)	23(5.9)
8.	Do you think online classes has allowed more flexibility in your daily activities	133(34.2)	69(17.7)	82(21.1)	56(14.4)	49(12.6)
9.	Do you think through online classes teachers are able to identify your weaknesses and help you to overcome them.	193(49.6)	86(22.1)	712(18.3)	26(6.7)	13(3.3)

10.	Do you think online classes effect your group discussion regarding your studies	64(16.5)	41(10.5)	66(17)	71(18.3)	147(37.8)
11.	Do you think the institution has made an effort to minimize your academic loss	62(15.9)	62(15.9)	96(24.7)	89(22.9)	80(20.6)
12.	Do you think the lack of offline assessment and evaluation in such scenario effect your studies	39(10)	57(14.7)	140(36)	89(22.9)	64(16.5)
13.	Would you prefer the face-to-face courses to these online classes	59(15.2)	50(12.9)	53(13.6)	49(12.6)	178(45.8)
14.	Do you think online classes has effected teaching-learning process in your institute	40(10.3)	40(10.3)	98(25.2)	77(19.8)	134(34.4)
15.	Are you satisfied with your experience of online method of classes	177(45.5)	72(18.5)	80(20.6)	41(10.5)	19(4.9)
16.	Do you want same teaching learning technique to continue in future	226(58.4)	42(10.8)	69(17.7)	26(6.7)	26(6.7)
17.	Do you think this experience is preparing you for technology use for your profession in future.	120(30.8)	62(15.9)	117(30.1)	48(12.3)	42(10.8)

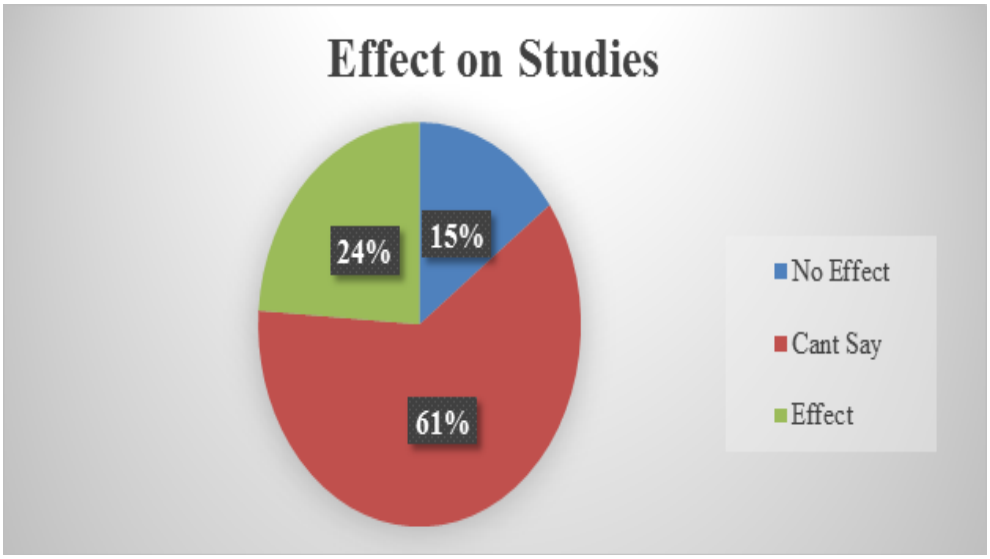

Figure 1: Figure showing the perspective of medical students of effect of online mode of classes on their studies.

Table 3: Univariate analysis of perception of online studies among the medical students

Variables		Effect on studies due to online mode of classes			p value
		No effect	Can't say	Have Effect	
1.Age	18-20	31	164	58	0.071
	>20	27	74	35	
2.Gender	Male	22	93	34	0.912
	Female	36	145	59	
3.Religion	Hindu	20	94	48	0.137
	Muslim	36	136	39	
	Sikh	1	7	5	
	Others	1	1	1	
4.Native	Urban	23	78	41	0.136
	Rural	35	160	52	
5.Phase	1	37	144	56	0.888
	2	21	94	37	
6.College	GMC Kathua	7	82	49	0.000
	GMC Doda	23	64	12	
	GMC Rajouri	28	92	32	
7.No of hours study per day	1	8	22	14	0.203
	1-3	29	148	58	
	>3	21	68	21	
8.Residence	Jammu	13	79	42	0.001
	Kashmir	21	89	32	
	Doda	5	15	1	
	Rajouri	11	12	3	
	Other	8	43	15	

On applying univariate analysis it was reported that location of the college as well as location of the residence of the students has statistical significance with the perception of the online classes on their studies other variables like age, gender, religion, nativity and number of hours of study per day are not statically related to perception.

Discussion

During the covid pandemic education all over India was mainly in online mode and medical education was no exception to this. With this study, we had attempted to assess the perception and effect of online learning due to Covid 19 lockdown in students of a medical college in Northern India. It was one attempt to study various factors to facilitate online learning.

Of 389 participants, about 62% were females and rest were males. Majority were of age group 18 to 20 years and belong to Muslim religion. About 62 percent were of first year and 64 percent were of rural background.

64% were not comfortable with online teaching learning method. 63% did not think online teaching approach is student friendly. 69.2% don't want to continue online mode of teaching learning technique in future. In our study, more than half (55%) were not satisfied with online mode of teaching. Wiam Elshami et al reported that more than two- thirds of the students were less satisfied with online learning [18]. This finding supports previous studies conducted in the USA, which reported that students were dissatisfied with online learning compared to face-to-face

instruction [19,20]. Our findings might be due to personality, self-efficacy, and expectations related to the design and delivery of online learning and teaching, as reported in a previous study [21]. Another factor for decreased satisfaction could be attributed to the sudden shift to online delivery of the curriculum due to COVID-19, in which there was no adequate time for preparation, accompanied by the stressful working conditions of the pandemic itself [22].

In our study more than half of the respondents (58.4%) prefer the face-to-face courses to these online classes.. In another similar study, there was a mixed response observed regarding the replacement of conventional with online teaching [10] .Rajab et al. stated in their study that 62.5% of respondents were in favor of combining online with face-to-face interaction [23]. In an another study from Lucknow India, 25.9% medical students opined that nothing can replace traditional classroom teaching [24].

In our study only 33.2% were able to access a computer with an Internet connection for online classes. This was higher in comparison with another study done in medical college in Chandigarh where poor internet connectivity was reported in 17.2% of participants[10]. In our study on applying univariate analysis it was reported that location of the college as well as location of the residence of the students has statistical significance with the perception of the online classes on their studies. As majority of medical colleges are situated in urban areas where access to internet is present. However, a uniform platform which is of robust capacity and designed for medical teaching is required for online activity. Lack of personal interaction with the teachers, distractions at home and frequent technology failures were among common cited problems by medical students in Punjab, India [25]. Another study In Libya reported that majority of the medical students (64.7%) disagreed that e-learning could be applied in Libya [9].

One of the major challenges was the student's online assessment. 43.5% of participants reported that the lack of assessment and evaluation in such scenario can effect their studies. Various online assessment methods such as online MCQs, diagrams, video viva were used to assess students but students were not satisfied with it. The same finding was reported by Chopra et al. where half of the students desired for the need for assignment following online teaching [24] .But Our finding were contrary to another study rein which majority(55.4%) were satisfied with online method of assessment [10].

Conclusion

Online learning has been a useful and practical tool for curriculum delivery during COVID-19. But students had a mixed response regarding online teaching. So, more needs to be done to supplement the existent teaching pattern and preparedness of teaching faculty by incorporating online assignments and assessment methods and strengthening digital infrastructure in medical schools. Still we are hopeful that despite of all the hurdles and ingenuities, medical education through online mode will emerge as a solution in the face of the COVID-19 pandemic.

Recommendation:

Infrastructure development in form of suitable software and hardware, technical support, and training to students as well as faculty should be considered as essential. Also interactive sessions must be preferred over didactic way of teaching.

Limitation: The study had certain limitations. The study was conducted in a limited time period and the qualitative evaluation in the form of open-ended questions was not done . The addition of focus group discussion involving students

as well as teachers could have added more perspectives.

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