ORIGINAL ARTICLE

Attitude and Perception of Students towards Academic Challenges of Learning Amidst COVID Pandemic

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ABSTRACT

Introduction: The medical education sector of India, undoubtedly being a huge part of this sector, took a big hit with the advent of the pandemic. **Methodology:** Descriptive cross-sectional study was conducted during the month of October 2020 and it involved the students pursuing health courses (MBBS) from various colleges. The inclusion criteria consisted of students pursuing MBBS course and willing to participate in the survey. The survey was conducted through electronic questionnaires with the aid of Google Forms created online. **Results:** The response rate was calculated as 95.31%. Before the pandemic, most of the participants (39%) spent 4-6 hours per day studying and 133 of them (50.38%) used conventional resources i.e., class lectures for the purpose of studying. In contrast, during the pandemic, the majority 42.42% of students responded as to utilizing 0-2 hours for studying and 37.5% opted for a combination of college and external resources for studying. A Wilcoxon signed rank test revealed a significant decrease in the duration of study during the pandemic. **Conclusion:** Our study findings show that students still prefer the traditional face-to-face lectures because of the various short comings of virtual online sessions. A big proportion of students have become the victims to the pandemic's impact on mental health.

Keywords: Attitude, Academic Challenges, Perceptions, Learning, Covid Pandemic.

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INTRODUCTION

A state of Public Health Emergency of International Concern was declared on January 31, 2020 by the World Health Organization (WHO) due to the Corona Virus-19 which then attained the status of a global pandemic on March 11, 2020.[1] With 46,591,622 confirmed cases and 1,201,200 deaths globally, 8,267,623 confirmed cases and 123,097 deaths in India, as of November 2020, every sector has been disrupted and the chaos has ensued.[2] With 500 million people between the ages 5-24, being the largest in the world, and the number of colleges and universities being 39,931 and 993 respectively, this is both a boon and a bane for the education sector of India.[3] The medical education sector of India, undoubtedly being a huge part of this sector, took a big hit with the advent of the pandemic. Following the guidelines for social distancing,[4] the educational institutions were shut down paving the way to a new generation of virtual online classrooms. In today's medical education in our country, where there is an increasing focus on the early exposure to clinical skills, which form the core of this profession, the students have faced with the dilemma of having to deal with not just the absence of face-to-face lecture sessions, but also the absence of clinical postings which form a vital part in the proper development of a doctor's skill set. The aim of virtual classrooms

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being to continue the learning during the pandemic, the implementation of these new practices has led to varying results, as perceived by the student as well as the teaching fraternity. Medical students are now being forced to juggle the changes to their academic life on one hand with the untoward effects the pandemic has brought along with it on both the physiological and psychological level. This cross-sectional study aims to assess the attitude and perception of the students towards learning amidst the COVID-19 pandemic.

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted during the month of October 2020 and it involved the students pursuing health courses (MBBS) from various colleges. The inclusion criteria consisted of students pursuing MBBS course and willing to participate in the survey. The survey was conducted through electronic questionnaires with the aid of Google Forms created online. The forms contained an introductory paragraph highlighting the aims of the study and general instructions to the participants. The questionnaire consisted of inquiries about the different aspects of the participant's academic differences before and during the COVID pandemic. A member of the teaching faculty and 24 students were selected to pilot test the survey draft as part of the validation process of the survey and the same was modified based on their feedback. The final questionnaire was distributed among the mentioned target audience through social media. Data was entered into MS EXCEL and analysed using SPSS software version 22.0. Descriptive statistics was utilized, and Wilcoxon signed rank test was used to assess responses comparing before and during the pandemic.

RESULTS

A total of 277 responses were recorded out of which 264 volunteered to participate in the survey and 13 of them declined. The response rate was calculated as 95.31%.

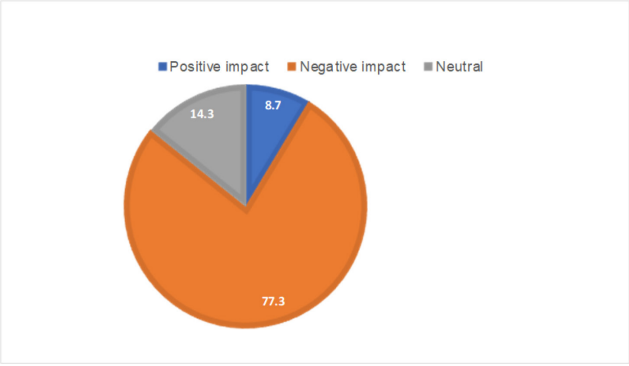

Figure 1: Impact of the Pandemic on the Learning Curve.

Table 1: Overview of the impact of covid on learning.

Questionnaire	Modality	Frequency (n)	Percentage (%)
How has the pandemic impacted your learning curve?	It has had a positive impact, I've improved significantly	23	8.7
	It has had a negative impact; I feel I have dropped down	204	77.3
	It has not had any impact whatsoever.	37	14.0

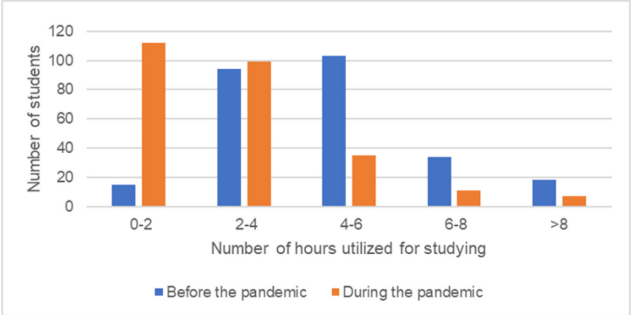

Figure 2: Comparison of Duration of Study Hours.

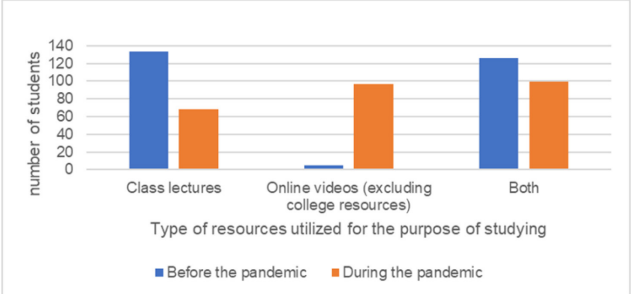

Figure 3: Comparison of the Type of Resource Utilized for the Purpose of Studying.

Overview: Impact of the pandemic on the learning curve.

As depicted by Figure 1, the majority of students (n=204, 77.3%) were of opinion that there has been a negative impact on their learning curve while only 8.7% (n=23) felt it has had a positive impact. Table 1. – Overview gives the details of the responses recorded.

Academic Challenges due to the pandemic

This section addressed the various aspects of a student's academic routine, and the changes in them because

Table 2: Academic Challenges due to the pandemic.

Questionnaire	Modality	Frequency (n)	Percentage (%)
Number of hours you studied in a day BEFORE the pandemic (in hours)	0-2 hr	15	5.68
	2-4 hr	94	35.61
	4-6 hr	103	39.01
	6-8 hr	34	12.88
	More than 8 hr	18	6.82
Number of hours you study in a day DURING the pandemic (in hours)	0-2 hr	112	42.42
	2-4 hr	99	37.5
	4-6 hr	35	13.26
	6-8 hr	11	4.17
	More than 8 hr	7	2.65
The type of resources you used for the purpose studying BEFORE the pandemic	Class lectures	133	50.4
	Online videos (excluding any college resources. Example YouTube etc)	5	1.9
	Both	126	47.7
The type of resources you used for the purpose studying DURING the pandemic	Class lectures	68	25.8
	Online videos (excluding any college resources. Example YouTube etc)	97	36.7
	Both	99	37.5
Did you have any experience attending online lectures before the pandemic?	Yes	39	1.8
	No	225	85.2
What type of electronic device do you use to attend online lecture sessions during the pandemic?	Mobile device	248	99.9
	Laptop	58	22
	Tablet	29	11
What type of network connection do you utilize when attending online lectures?	Mobile network	193	73.1
	Wi-Fi	17	6.4
	Both	54	20.5
What is your level of confidence on any given topic that you studied BEFORE the pandemic?	Excellent	22	8.3
	Good	135	51.1
	Normal	85	32.2
	Bad	13	4.9
	Worst	9	3.4
What is your level of confidence on any given topic that you studied DURING the pandemic?	Excellent	2	0.8
	Good	39	14.8
	Normal	73	27.7
	Bad	95	36
	Worst	55	20.8
How would you describe your concentration during Face to face lecture sessions BEFORE the pandemic?	Excellent	52	19.7
	Good	149	56.4
	Normal	54	20.5
	Bad	7	2.7
	Worst	2	0.8
How would you describe your concentration during Face to face lecture sessions DURING the pandemic?	Excellent	3	1.1
	Good	11	4.2
	Normal	67	25.4
	Bad	108	40.9
	Worst	75	28.4
How would you describe the level of interaction between the teaching faculty and students during Face to face lecture sessions BEFORE the pandemic?	Excellent	41	15.5
	Good	141	53.4
	Normal	75	28.4
	Bad	6	2.3
	Worst	1	0.4
How would you describe the level of interaction between the teaching faculty and students during Face to face lecture sessions DURING the pandemic?	Excellent	4	1.5
	Good	11	4.2
	Normal	63	23.9
	Bad	115	43.6
	Worst	71	26.9

continued...

Table 2: Cont'd.

Questionnaire	Modality	Frequency (n)	Percentage (%)
How would you describe the quality of your network connection?	Excellent	15	5.7
	Good	52	19.7
	Normal	110	41.7
	Bad	68	25.8
	Worst	19	7.2
What is your level of comfort with the use of electronic devices, i.e. how tech savvy are you?	Excellent	22	8.3
	Good	63	23.9
	Normal	100	37.9
	Bad	59	22.3
	Worst	20	7.6
What is your evaluation of the change in the quality of teaching owing to this transition from Face-to-face lectures before the pandemic to the virtual online lectures during the pandemic?	The quality has improved	16	6.1
	The quality has declined	189	71.6
	There is no change in the quality of teaching	59	22.3
Do you feel that clinical postings are absolutely necessary to learn certain clinical aspects like communication, history taking, eliciting clinical signs etc?	Yes	254	96.2
	No	3	1.1
	Maybe	7	2.7
Are you of opinion that attending clinical postings would help in exploring your interest in different specializations, and not being able to do this will impact your future career aspects?	Yes	224	84.8
	No	14	5.3
	Maybe	16	9.8

Table 3: Comparison of duration of study per day before and during the pandemic

		Paired Differences					*t*	d_r	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Number of hours you studied in a day BEFORE the pandemic (in hours) - Number of hours you study in a day DURING the pandemic (in hours)	1.864	2.503	.154	1.560	2.167	12.100	263	.000

of the pandemic. The details are given in Table 2 – Academic Challenges due to the pandemic.

As depicted by Figure 2 and Figure 3, before the pandemic, most of the participants (*n*=103, %=39.02) spent 4-6 hr per day studying and 133 of them (%=50.38) used conventional resources i.e., class lectures for the purpose of studying. In contrast, during the pandemic, the majority (*n*=112) 42.42% of students responded as to utilizing 0-2 hr for studying and 37.5% (*n*=99) opted for a combination of college and external resources for studying. A Wilcoxon signed rank test revealed a significant decrease in the duration of study during the pandemic (t=12.100, p<.001). (Table 3).

85.2 % (*n*=225) of them had no previous experience attending any online lecture sessions and the majority (*n*=250 %=94) used a mobile device and a mobile network (*n*=193 %=72.6) to attend virtual online lectures conducted during the pandemic.

A 5-scale Likert scale was used to grade the changes in the level of concentration, interaction, level of comfort using electronic devices, network connection strength etc. Before the pandemic, the majority (51.1%) reported to have good confidence over a topic studied and agreed that their concentration (56.4%) and interaction level (53.4%) during the lectures was good. However, during online sessions, most of them reported a decrease in level of confidence (36%), concentration (40.9%) and interaction (43.6%) by grading these as bad on a 5 scale Likert scale. The Wilcoxon Signed rank test was used to analyse the changes in levels of confidence, concentration and interaction of the students between the two periods and a statistically significant difference in all three was observed, i.e., confidence (z = -10.747,

Table 4: Comparison of Level of Confidence- Ranks.

		N	Mean Rank	Sum of Ranks
CONFIDENCE DURING - CONFIDENCE BEFORE	Negative Ranks	192a	114.31	21947.50
	Positive Ranks	27b	79.35	2142.50
	Ties	45c		
	Total	264		

A. Confidence during < confidence before

B. Confidence during > confidence before

C. Confidence during = confidence before

Table 5: Comparison of Level of Confidence – Test Statistics.

	Confidence During - Confidence Before
Z	-10.747b
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Table 6. Comparison of Level of Concentration – Ranks.

		N	Mean Rank	Sum of Ranks
CONCENTRATION DURING - CONCENTRATION BEFORE	Negative Ranks	233a	121.20	28240.00
	Positive Ranks	6b	73.33	440.00
	Ties	25c		
	Total	264		

A. Concentration during < concentration before

B. Concentration during > concentration before

C. Concentration during = concentration before

Table 7: Comparison of Level of Concentration - Test Statistics.

	Concentration During - Concentration Before
Z	-13.181b
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Table 8: Comparison of Level of Interaction- Ranks.

Interaction During - Interaction Before	Negative Ranks			
	Positive Ranks			
	Ties			
	Total			

A. Interaction during < interaction before

B. Interaction during > interaction before

C. Interaction during = interaction before

Table 9: Comparison of Level of Interaction- Test Statistics.

	Interaction During - Interaction Before
Z	-13.091b
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

p<.001), concentration (z=-13.181, p<.001) and interaction (z=-13.091, p<0.001) (Table 4 to Table 9). A significant number (71.6%) of them agreed that there had been a decline in the quality of teaching owing to this transition. Regarding the technical aspects of online classes, majority of them possessed a reasonable level of comfort using electronic devices and their signal strength was satisfactory. 96.2% of them felt that clinical postings were necessary and 84.8% felt that the absence of clinical postings would impact their future.

DISCUSSION

The Indian education system was completely disrupted as a result of the pandemic and led to the birth of virtual online teaching. Although online teaching isn't entirely new to India, the rapid shift from conventional face-to-face lectures and the naivety of the population towards the same has put forth major challenges. This study aimed to assess the attitude and perception of the students amidst this transition and its impact.

The majority of the participants (n=204, 77.3%) strongly agreed that their learning curve had been negatively impacted and that they felt that they had dropped in their studies. The rest of the questionnaire was focussed to assess the reason for this impact on their learning curve.

Academic challenges due to the pandemic

The responses revealed significant differences in the academic routine of the participants during the pandemic as compared the period before the pandemic. With only a mere 1.8 percent of them having previously experienced virtual lecture sessions and with relatively very little time for students to adjust to the dramatic change, their academic routine took a big hit. Key components of one's academic routine, such as duration of study hours, resources utilized, confidence, concentration, interaction altered profoundly with the onset of the pandemic. A paired samples *t*-test revealed a significant decline (t=12.100, p<0.001). In contrast to 4-6 hr a day, the majority of students during the pandemic spent only 0-2 hours studying. In a similar study (Kapasia *et al.*, 2020, p. 3) the same trend was observed where 54.3% of undergraduates reported as to studying less than the normal time, they usually studied.[5]

It is worth noting that reading depends on a lot of factors such as the studying environment, posture, whether one is reading for pleasure or academic purposes etc.[6] The study pointed out that students generally preferred dedicated settings like libraries for studying academic material. Even in such settings, various cofactors such as the mere presence and activity status of other people in the same environment affects one's reading. (Kuzmičová *et al.*, 2017, p 3-5).[6] With the advent of the pandemic, such settings have been dramatically shut down, coercing students to alter their studying patterns, in a very short period of time. A similar study (Daroedono *et al.*, 2020) showed that the concentration and interaction proved to be the major challenges to online education.[7] Much of the confidence on any topic depends on continuous self-assessment, i.e., the ability to successfully answer a given question on the topic. SATs conducted in colleges not only provide motivation to study but also increases a student's self-confidence and self-efficacy.[8] Also preparedness for an any academic examination depends on a student's performance in these assessments. However, conducting such assessments has proved to be very challenging using online conferencing.

A sharp shift was observed wherein external resources like YouTube became dominant in contrast to conventional class lectures which were before the pandemic. Studies have shown the increasing usage of YouTube videos by medical students due to its easy accessibility, widespread distribution, inexpensiveness, time-saving quality and many other (Tackett *et al.* 2018).[9] This increasing trend also yielded statistically significant results which translated to better performance by such students in exams such as USMLE as observed by Bridge *et al.* (2009).[10] Incorporating such sources in the usual academic routine by the students, would definitely yield better academic results. In a similar study by Adhikari *et al.* (2020), they observed the same where the majority of the students utilised sources like YouTube for studying.[11] This can also related to the observation that the majority of the students in this study (71.6%) were of opinion that the teaching quality has declined during the pandemic. Certain challenges are faced by the teachers such as inadequate prior knowledge or experience in operating technology for education on a full-time basis.[12,13] Moreover, teaching hugely relies on identifying the requirements of the audience and proceeding according to their response.[14] However, with the increasing use of online conferencing, interaction between the students and teachers has seen a downside as pointed out in this study Also, teachers accustomed to using black boards while lecturing, are now forced to deliver the same content online. Teachers now have to manage this new task with their already existing responsibilities towards their family, hence time becomes a major constraint.[15,16] Also, a study by Nambiar (2020), pointed out that teachers still believed that online classes were not as effective despite their benefits due to a lot of restricting factors.[16] This brings us to the question as to what changes could be done to eliminate this gap between teachers and technology. Implementation of skill development courses as a part of routine teaching schedule could be of some help.

However, the majority of the students possessed reasonable level of comfort with technology. Mobile devices were used by most to attend online sessions and most of them possessed a reasonable level of network strength. India is still a developing country where internet uploading and downloading speeds are higher on a Wi-Fi network compared to a cellular network.[17] Since technophobia isn't a concern, as pointed out in this study and a similar study by T Vaag *et al.* (2020),[18] network connectivity remains a troublesome issue. Interference due to such intrinsic factors are almost similar to cross talks during the live sessions which cannot be controlled. This often leads to decrease in the concentration and interaction levels in a virtual session.

CONCLUSION

In times as unprecedented as this, there is no clear-cut solutions to the challenges that we face today. And this study aimed to shed some light on the existing obstacles and come up with suitable tactics to manoeuvre through the situation safely. Our study findings show that

students still prefer the traditional face-to-face lectures because of the various short comings of virtual online sessions. A big proportion of students have become the victims to the pandemic's impact on mental health. Although the importance of traditional touch of a teacher is unparalleled, we also live in an era that has seen technology encompass every corner of our lives and it would be a great benefit if we could evolve the education sector paralleling it with the rise in technology. This requires skill building courses not just for teachers but for students too as well, in order to ensure equitable distribution. This could be the beginning of a new generation of students that are physically, mentally proficient in handling not just a similar external crisis, if there were to be any, but also solve the internal crisis together as a student fraternity.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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