IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 6 Ser.2 (June. 2022), PP 29-33
www.iosrjournals.org

Perceptions of Undergraduate Medical Students towards Online Teaching during the Covid-19 Pandemic in Andhrapradesh and Telangana States, India.

Killi Keshavi *4th year MBBS, Andhra Medical College*
Dr Devi Madhavi Bhimarasetty, *Professor and Head, Department of Community Medicine,Andhra Medical College, Visakhapatnam, Andhra Pradesh.*
Dr Jahnavi SampathiRao, *Post Graduate, Department of Community Medicine,Andhra Medical College, Visakhapatnam, Andhra Pradesh*
Corresponding author: Keshavi Killi, 4th Year MBBS, Andhra Medical College, Visakhapatnam, Andhra Pradesh.

Abstract
Introduction: *COVID-19 pandemic has affected education all over the world, mostly on the medical students as clinical orientation and ward postings with hands-on training are crucial towards the development of basic medical skills. Various methods of online teaching have been adopted in response to this pandemic to maintain the continuity of medical education.* ***Objectives****: To measure the practices of online learning of students during the Covid 19 pandemic and to know student perception about the effect of the Covid pandemic on Student Education.* ***Methods****: A cross-sectional study was conducted during June -September among undergraduate medical students studying in medical colleges of Telangana and Andhra Pradesh using a pretested questionnaire shared as a Google sheet online through Social media/student networks.* ***Results****: Results revealed that only 33.17% had a positive perception of online teaching. 81.3% of respondents felt that online learning had not replaced clinical teaching or practical training and 84.2% of respondents felt that they were not able to learn practical/clinical skills in online mode.* ***Conclusions****: Digital tools ensured the continuation of medical education, but did not fully contribute to the students' clinical skills and practical experience as pinioned by them. Hence initiatives must evolve to ensure the challenges and lacunas experienced by the students to ensure that medical education is imparted to ensure the overalldevelopment of the students.*
Keywords*: Andhra Pradesh, Medical Education, pandemic, student perception, Telangana*

Date of Submission: 29-05-2022 Date of Acceptance: 10-06-2022

I. Introduction:

Novel coronavirus pandemic (COVID-19) has profoundly impacted the healthcare systems andmedical education worldwide. The closure of the medical schools and universities has disrupted the learning and education of future health care professionals [(1)]. The pathway to successful completion of medical education has always been relatively predictable, with hands-on clinical skills training and clinical experience adjunct with classroom and practical exposure. This pathway has been considerably disrupted by the COVID-19 pandemic, causing uncertainty, confusion and significant concerns about medical students' pedagogy [(2).] The COVID-19 pandemic has also tested the limits of healthcare systems and challenged conventional practices in medical education.Medical faculties all over the world switched their curricula to distant learning in virtually no time to implement e-learning with thelittle thoughtful evolutionary process to assure at least a minimum of learning to compensate for the loss of learning opportunities in a clinical learning environment [(3)].

In response to the pandemic situation, the majority of the medical colleges in Andhra Pradesh and Telangana, India, have also adapted innovative ways through alternative teaching methods to teach the medical students with renewed efforts to reduce the impact of the pandemic. However, providing adequate clinical experience is still a challenge.

Objectives:

The study was undertaken with an objective to measure the practices of online learning of students during the Covid 19 pandemic, to assess the students' perception about online learning in UG clinicalteaching / practical training and to know student perception about the effect of the Covid pandemic onMedical Education.

II. Methods:

A cross-sectional descriptive study was conducted among the Under Graduate Medical students during the months of August to September 2021in the states of Andhra Pradesh andTelangana. The minimum sample for the study was 1200. Sample size was calculated by using the formula $4pq/l^2$, where p = 25% is the prevalence based on perception of students who felt that there was no deterioration of medical training, q = 100-p = 75, and l = 2.5% (error). The error was taken at 2.5% anticipating a greater number of participants as the study was taken up using online mode involving the student networks. An online survey questionnaire was modelled based on a survey used in a previously published peer reviewed multicentre quantitative study conducted by Harries *et al.,* (2021), evaluating the effects of the COVID-19 pandemic on medical students. The survey tool was modified for use in undergraduate medical students in Local settings. Study variables are broadly categorized as: demographic and educational details of the respondent; online learning tools and methodologies; perceptions towards online learning; perceived role of online learning in UG clinical teaching / practical training and assessment; effect of pandemic on UG medical education. The web based pretested validated questionnaire consisted of 23 multiple choice and free-response questions. To assess perceptions on a few domains, participants were asked to rate on a Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). The survey tool was tested on pilot basis on few medical students to ensure question clarity, and completion of the survey in approximately 10 min. The questionnaire included a consent section to declare willingness to participate in the study and also to authorize to use the data for further publication. Ethical committee approval was obtained through the Institution Ethics Committee (Serial No 302/IEC AMC/AUG 2021). The survey tool was self-administered and was accessed by participants through electronic linksent via email and social media apps through student networks. Data was entered and analysed using MS Excel and SPSS version 24. The data was expressed in percentages and chi square test is used(p value less than 0.05 was considered as statistically significant).

III. Results:

The demographic distribution of the population is as follows:(table 1)

The results on usage and familiarity with online learning tools prior to the covid pandemic, revealed that the majority of the 3rd, 4th and 5th year students were familiar with online learning platforms/resources prior to the Covid pandemic. They used recorded video tutorials (46.5%), live tutorials (29%) and online question banks (7.5%), while 31.3% of respondents never used any kindof online learning tools prior to the covid pandemic. Among those who were familiar with the online learning platforms, 62.4% of respondents felt that recorded video tutorials were most effective, followed by live tutorials (42.1%) and online question banks (12%).

The results showed that 71.1% of colleges delivered online tutorials during the Covid pandemic. 11% responded that new online learning platforms and new methods were introduced to complement undergraduate medical education. All the students used online teaching resources according to the participants However, only 29.3% of respondents felt that the online teaching sessions were interactive, while 17% of respondents felt that online teaching was not at all interactive while 28.6% felt that majority of the sessions were not interactive and 25% felt that majority of the sessions were interactive. (Insert figure 1)

Results of students' perception on online teaching were collected on a Likert scale and the positive responses (agree and strongly agree) were combined into an agreement percentage, and negative responses (disagree and strongly disagree) were combined into a disagreement percentage andremaining responses were considered as neutral responses (Fig.1). Among the responses, 68.46% felt that offline teaching was the best method of teaching, while the rest were either neutral (15.85%) or disagreed (15.68%) with it, indicating that online method of medical education was not a preferred choice by the students. However, there was significant difference of opinion regarding this aspect of online education among the various professional years (p=0.025).In terms of teaching being stimulating, easy to engage in lessons, clearing all the question during session, instructiveness, preparedness and study time due to online teaching the results indicate that there was a mixed response.35.59% of the respondents had a disagreement towards online teaching, whereas only 33.17%had positive perception towards online teaching, while the remaining 31.24% were neutral(Insert figure 2)

Responses were collected on the aspects of online learning that were enjoyed by the respondents. It was observed that 63.9% felt that they were safe due to the online learning as they were not exposed to the pandemic. Respondents also felt there was no travel or expenses involved, more comfort and flexibility in attending online classes, and that they had ability to learn at their own pace, due to onlinelearning.

The questionnaire collected responses on role of online learning in the UG clinical training / practical training and assessment. Results revealed that 81.3% respondents felt that online learning had not replaced the clinical teaching or practical training, while 9% respondents felt the opposite and 9.6% felt that clinical experience was affected to some extent. Similarly, 84.2% of respondents felt that they were not able to learn practical/clinical skills in online mode, while 13.6% felt that they did to some extent and the remaining did not

feel affected. However, overall results indicate that more that 80% respondents felt that clinical learning in terms of attending ward postings physically could not be achieved through online learning.

A question on whether the university theory and practical examinations were affected by the covid pandemic, 60.3% respondents had their exams postponed and conducted late, 9.5% had theory exams online, for 28% were not affected. Similar responses on whether the practical examinations were affected, lead to responses that 56.6% respondents had their exams postponed and conducted late, 35.7% were not affected and the rest had their exams on virtual mode.

In the last part of the questionnaire, responses on the overall effect of pandemic on UG medical examination were collected on a bipolar scale. Results revealed that 76.70% of respondents felt that their medical education has been significantly disrupted by the pandemic, but 38.81% were able to find meaningful learning opportunities inspite of the pandemic, as the majority of medical colleges tried doing everything they could to help students adjust to the pandemic situation (Insert figure 3).

IV. Discussion:

As the shift to online education poses important challenges, medical schools should be prepared to ensure a successful educational environment for medical students through emphasising the tech-based pedagogy, advising, motivating, inviting medical students' feedback, as well as through supporting medical educators to adapt to the new reality [4] [5]. The adoption of online learning is a key strategy for ensuring continuity in medical education during COVID-19 pandemic, which was adopted by the colleges of Andhra Pradesh and Telangana of India, as observed from the results. The results showed that the final year and the internship students felt that their clinical exposure is not adequate as they were posted only in the Covid treatment wards. This is in line with the findings from a study by Mehta et al [6]. in which the students felt that Elective cancellations due to COVID-19 caused problems not only in terms of fewer rotations but also in terms of students feeling less competitive as a result of fewer opportunities, which could harm their future prospects. The results showed that 60.3% of respondents had their exams were postponed 9.5% had theory exams online and 28% of the respondents felt their exams were not affected. These findings are similar to the findings from Rafi et al[7] which concluded that another aspect of medical education that has been disrupted by the outbreak of the SARS-CoV-2 is the examinations of medical students. The need for substitution of the daily live and hands-on education during this pandemic has cultivated the incorporation of a variety of innovative ideas into medical education across the world, that have involved the introduction of new technological concepts to interact with their students. All these innovative methods should be carefully examined, as they should not deprive the students of their hands on training of clinical skill. The results obtained from the study that majority perceived that online education system was unhelpful in gaining practical and clinical skills.

V. Conclusion:

The urgency of the pandemic has rapidly brought on the development of many innovative educational strategies encompassing the use of a variety of digital tools for ensuring continuity of Medical Education. However, they did not fully contribute to the clinical skills and practical experience to the students as opined by them. Hence initiatives must evolve to ensure the challenges and lacunas experienced by the students to ensure that medical education be imparted to ensure overall development of the students.

Acknowledgements: We acknowledge Indian Medical Association Medical Students' Network Andhra Pradesh and Telangana for helping us connect with the students from various collages. We thank Dr Nivetha and Dr Sai Kiran for their prompt help.

Conflict of interest: No conflict of interest

References:

[1]. Chatterjee S. The COVID-19 Pandemic Through the Lens of a Medical Student in India. Int J Med Stud. 2020 Apr 30;8(1):82–3.
[2]. Giliyaru S, Hegde G, Gajjala S, Vemuri O, Azzopardi C, Hurley P, et al. COVID-19 pandemic and medical education. Indian J Med Sci. 2021 May 29;73(1):64–5.
[3]. Reinhart A, Malzkorn B, Döing C, Beyer I, Jünger J, Bosse HM. Undergraduate medical education amid COVID-19: a qualitative analysis of enablers and barriers to acquiring competencies in distant learning using focus groups. Med Educ Online. 2021 Dec;26(1):1940765.
[4]. Jiang Z, Wu H, Cheng H, Wang W, Xie A, Fitzgerald SR. Twelve tips for teaching medical students online under COVID-19. Med Educ Online. 2021 Dec;26(1):1854066.
[5]. Gewin V. Five tips for moving teaching online as COVID-19 takes hold. Nature. 2020 Mar24;580(7802):295–6.
[6]. Mehta N, End C, Kwan JCS, Bernstein S, Law M. Adapting medical education during crisis: Student-Faculty partnerships as an enabler of success. Med Teach. 2020 Sep 11;1–2.
[7]. Rafi AM, Varghese PR, Kuttichira P. The Pedagogical Shift During COVID 19 Pandemic: Online Medical Education, Barriers and Perceptions in Central Kerala. J Med Educ Curric Dev.2020 Jan 1;7:2382120520951795.
[8]. Tsamakis K, Rizos E, Manolis AJ, Chaidou S, Kympouropoulos S, Spartalis E, et al. COVID-19 pandemic and its impact on mental health of healthcare professionals. Exp Ther Med. 2020 Jun;19(6):3451–3.

[9]. Papapanou M, Routsi E, Tsamakis K, Fotis L, Marinos G, Lidoriki I, et al. Medical education challenges and innovations during COVID-19 pandemic. Postgrad Med J [Internet]. 2021 Mar 28 [cited 2022 Feb 4]; Available from: https://pmj.bmj.com/content/early/2021/03/28/postgradmedj-2021-140032

[10]. Roskvist R, Eggleton K, Goodyear-Smith F. Provision of e-learning programmes to replace undergraduate medical students' clinical general practice attachments during COVID-19 stand-down. Educ Prim Care Off Publ Assoc Course Organ Natl Assoc GP Tutors World Organ FamDr. 2020 Jul;31(4):247–54.

[11]. Choi B, Jegatheeswaran L, Minocha A, Alhilani M, Nakhoul M, Mutengesa E. The impact of theCOVID-19 pandemic on final year medical students in the United Kingdom: a national survey. BMC Med Educ. 2020 Jun 29;20(1):206.

Tables and Figures

Age	Females				Males			
	AP		Telangana		AP		Telangana	
18-20Yrs	Government	Private	Government	Private	Government	Private	Government	Private
	28.6%	7.3%	10.4%	2.24%	16.1%	1.9%	4.6%	0.7%
>20Yrs	8.0%	3.0%	1.9%	3.7%	7.9%	1.6%	1.2%	1.0%

Table 1: Demographic Distribution of the study population

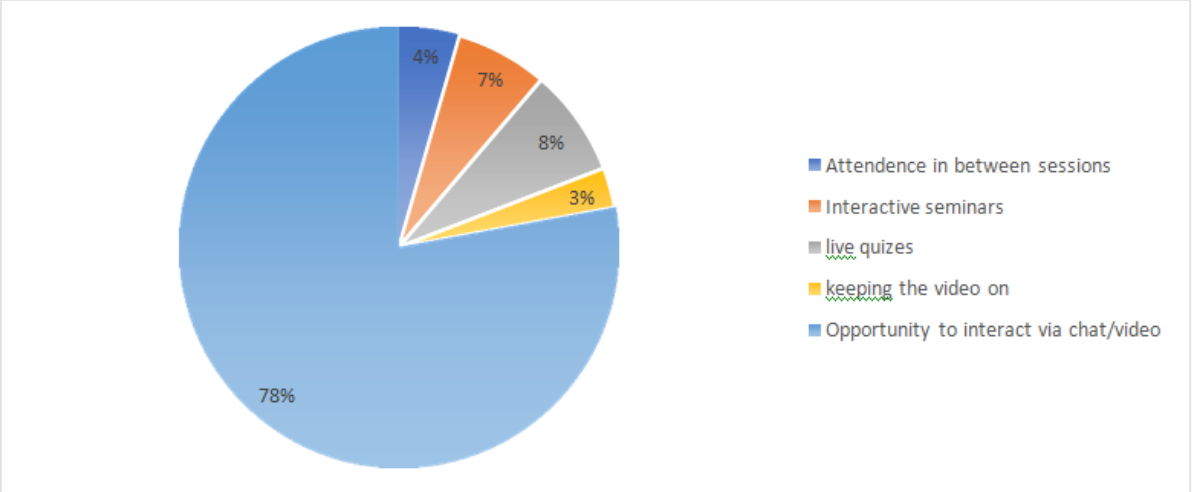

Figure 1: Various methods by which the sessions were made interactive as perceived by the students

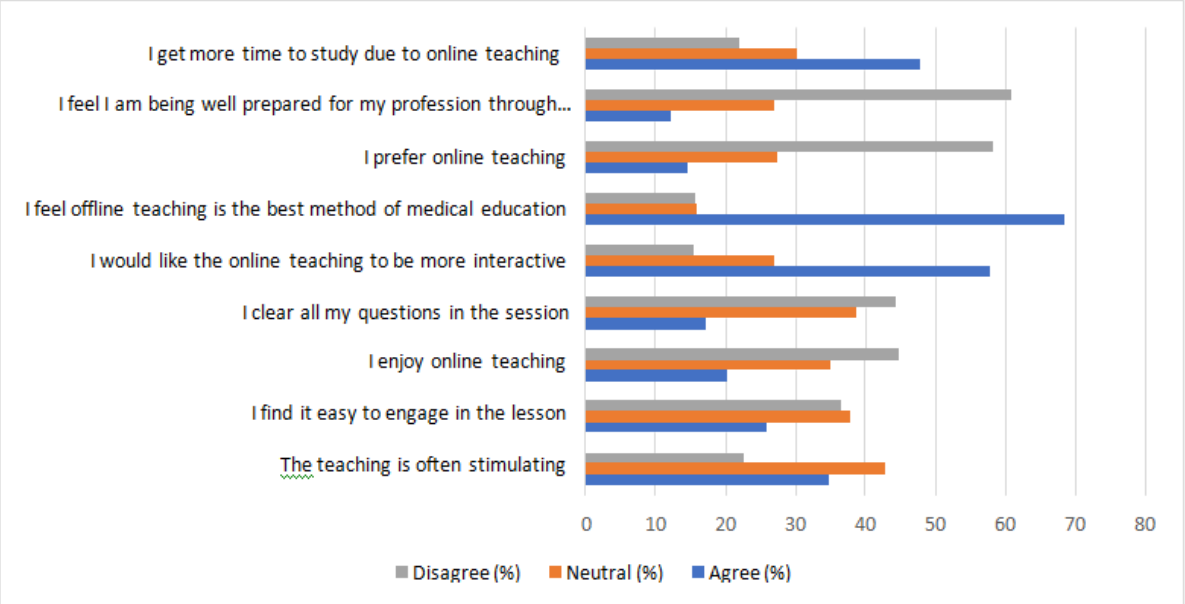

Figure 2: Perceptions on experience of online learning

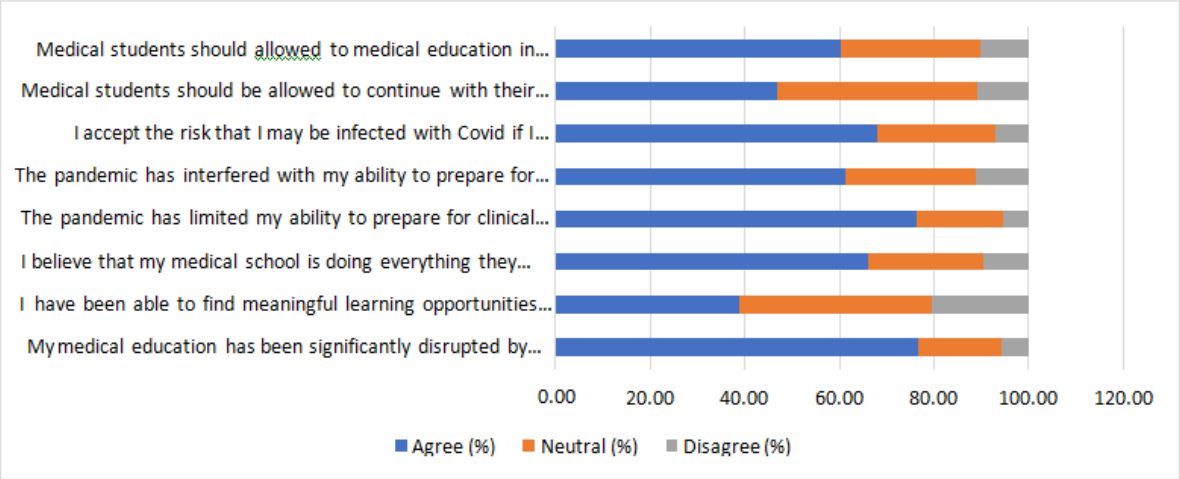

Figure 3:Impact of Covid pandemic on UG Medical Education

Killi Keshavi, et. al. "Perceptions of Undergraduate Medical Students towards Online Teaching during the Covid-19 Pandemic in Andhrapradesh and Telangana States, India.". *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(06), 2022, pp. 29-33.