ALLIED HEALTH STUDENTS PERCEPTION ON SYNCHRONOUS ONLINE TRAINING DURING COVID 19 PANDEMIC

Greeshma Molly George[1,2], Madhura Reddy[3], Tomin Thachil[3,4], Pratibha Todur[5]

Abstract

Purpose: During COVID 19 pandemic, most of the educational platforms have been immediately shifted to online teaching. Hence, it is important to understand the various concepts and future preferences of students on online learning. This study is aimed to assess the allied health care student's perception on synchronous online training during COVID 19 pandemic.

Methods: A questionnaire-based online survey was conducted among the allied health care students from Manipal College of Health professions (MCHP), Manipal, Karnataka between January and February 2021. The questionnaire prepared through Google forms, graded using a five-point Likert scale was circulated using student learner mail ID and WhatsApp. The ease and comfort level, suitability of environment, internet connectivity, and future preferences of students on online learning was assessed.

Results: A total of 100 responses were included in the study. The majority of the participants responded that online learning is appropriate during the pandemic (68%) and finds it easier to use an online learning platform (69%). The participants also agreed that they had a suitable home environment (70%), daily access to the internet (56%), and were satisfied with the methods used in delivering course content (50%). However, lack of skill-based education (54%), difficulty in focusing (60%), and understanding course content (56%) with online learning were the major drawbacks identified.

Conclusion: Online learning is an effective and a preferred way of learning during COVID 19 pandemic. However, the need to focus on the development of clinical skills along with the theoretical knowledge must be ensured by the educators.

Keywords: Allied health students, COVID-19, Health professionals, Online learning, Undergraduate students.

[1]Post graduate, Department of Respiratory Therapy, Manipal College of Health Professions, Manipal Academy of Higher Education (MAHE), Manipal

[2]Respiratory Therapist, department of Respiratory care services, Ministry of Health, Sultanate of Oman.

[3]Assistant Professor, Department of Respiratory Therapy, Manipal College of Health Professions, Manipal Academy of Higher Education (MAHE), Manipal.

[4] Senior Respiratory Therapist, Sulthan Qaboos University, Muscat, Oman

[5]Assistant Professor- Senior scale, Department of Respiratory Therapy, Manipal College of Health Professions, Manipal Academy of Higher Education (MAHE), Manipal

***Corresponding Author:** Ms. Pratibha Todur

*Department of Respiratory Therapy, Manipal College of Health Professions, Manipal Academy of Higher Education (MAHE), Manipal Contact No: +91 8095103671 Email: pratibha.todur@manipal.edu

DOI: 10.53555/ecb/2023.12.Si13.203

INTRODUCTION

The coronavirus disease of 2019 (COVID – 19) was initially reported in Wuhan city of China by the end of 2019 leading to a rapid spread, which was then announced as a public health emergency and later declared as 'pandemic' by the World Health Organization (WHO) in March, 2020.[1,2] Most of the authorities across the globe have imposed lockdown, maintaining social/physical distancing and avoiding public gathering or any direct contact, with a collective goal of breaking the spread of virus.[3,4] Many schools and colleges were enforced to stay close, suspending direct classroom learning causing the shift from teacher centred to student centred learning, increasing the ease and comfort for students to learn.[4,5] Internet has been considered as a driving force for student centred learning and have become the most important and vital part of online education.[5, 6]

Even though online learning provides the necessary information and data required, medical students lack the skill of practice and professionalism acquired in a clinical setting.[7-9] Conducting a complete shift to online learning in medical schools during pandemic was necessary to ensure the progression of education among students, yet it is important to understand the problems and necessities faced by the students.[2] It is critical to ensure that students follow distant learning practices and share their learning encounter about using online education.[8] Online learning also known as e- learning, is an internet based education where students learn in a fully virtual environment.[7] There are two types of online learning namely, synchronous and asynchronous learning. Synchronous learning means that even though learning happens through distance, the students will be virtually attending the classes at the same time with the instructor whereas, asynchronous learning is where students can learn at their own schedule within a certain time frame. We aim to study the perception on synchronous mode of learning among allied health students.[13]

METHODS

Ethical statement: The study was approved by Institutional Research Committee (IRC) of Manipal College of Health Professions. Ethical approval was obtained by the Kasturba Medical College and Kasturba Hospital Institutional Ethics Committee (IEC: 691/2020) and registered in the Clinical Trial Registry of India (CTRI/2020/12/030044). Informed consent was obtained from participants in first section of online questionnaire, after which the participants were directed to the study.

Study design: A descriptive cross sectional study (questionnaire based online survey) was conducted among the allied health profession students of Manipal College of Health Professions (MCHP), India

Settings: The study was conducted at the MCHP, Manipal Academy of Higher Education, Manipal, India. The online survey responses were collected in the month of January and February 2021. The questionnaires was shared with the batch coordinators through email and social media (WhatsApp).

Materials and subjects: Expert validated self-made questionnaire was prepared through Google forms and was circulated to participants using social media platform. The questionnaire was divided into six sections and all questions included were specific and suitable for each category and was graded using a five point Likert scale. All allied health profession undergraduate students undergoing synchronized academic training were included in the study.

Participants:

The study participants were allied health science undergraduates in the academic year 2020/2021 of MCHP, MAHE, Manipal. Participants who had synchronous online academic training as mode of training from past six months were enrolled in the study. The study questionnaire was circulated to the class representatives from all the courses via email or social media like WhatsApp. The study was restricted to one educational institution due to the differences in mode of education and allied health curriculum structure across educational institutions. Post graduate students were excluded as their curriculum varied and also, all the students from the department of study investigators were excluded to reduce bias.

Tools

A self-made questionnaire of 33- item structured in English were prepared, as there was no similar tool available in literature conducted with similar objective and similar study participants. Further, content validation was done through senior academic faculty, who used synchronised online teaching during pandemic and inputs from validators were inculcated to the questionnaire.

The questionnaire was created as google form and the link was circulated to the desired participants through the class representatives via Gmail and

WhatsApp. The anonymity, confidentiality and security of the responses was ensured. The link directed the participants to an initial section that provided all relevant information and by clicking a button informed consent was collected. Following this, the participant was directed to a section containing the study questionnaire. The demographics included age, the year/ semester of study, Course, number of hours spent in online training per day, the gadgets used for online training. The questionnaire had 6 sections, namely a) Ease and comfort. b) Content of class and hours. c) Learning environment. d) Internet connectivity. e) Communication/ interaction. f) Future perspectives, which had 11, 8, 4, 2, 3 and 5 items respectively. At the end there was a section if the participant had any other suggestions. Questionnaire was graded using a five point Likert Scale: 1) Strongly agree, 2) Agree, 3) Neutral, 4) Disagree, 5) Strongly disagree to specify their level of agreement to a statement.

Statistics: All statistical data was analysed using SPSSv.16.0 (India). Continuous variables were expressed as mean and standard deviation or median and interquartile range (IQR).
Categorical variables were expressed in frequency and percentage (n %).

RESULTS

A total of 100 responses were included in the study after data cleaning, checking for duplicates, and excluding incomplete data. Demographic details were collected from each participant and are displayed in table 1.

Table 1. Distribution of Demographic Characteristics of Participants (n = 100)

Age (Mean ± SD) in years	20.12 ± 1.358
Gender (n %)	100 (100%)
Male	19 (19%)
Female	81 (80.2%)
Undergraduate (n %)	100 (100%)
Year (n %)	100 (100%)
1st Year	17 (17%)
2nd Year	25 (25%)
3rd Year	36 (36%)
4th Year	10 (10%)
Intern	12 (12%)
Course (n%)	100 (100%)
No. of hours spent per day (n %)	100 (100%)
1	-
2	8 (8%)
3	14 (14%)
4	25 (25%)
5	33 (33%)
6	20 (20%)
Personal Gadgets (n %)	100 (100%)
Mobile	58 (58%)
Laptop	39 (39%)
Tablet	3 (3%)
Computer	-

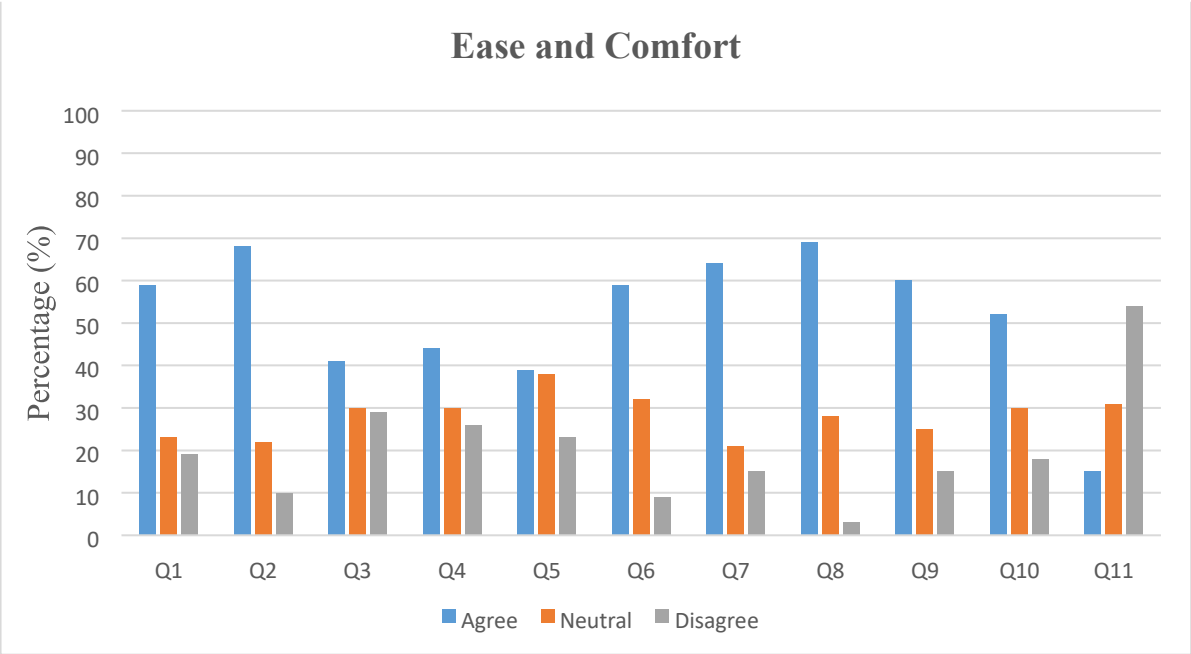

Figure 1. Bar graph representing the responses rate of participants on ease and comfort of online learning.

The questions assessing the ease and comfort of online learning are given in supplementary table 1. The response rate of students on ease and comfort of online learning (Figure 1) showed that more than 50% of the students agreed that online learning is an appropriate way of learning during the COVID 19 pandemic and finds it easier to manage an online learning platform. An exceeding amount of students (59%) had sufficient skills in using gadgets for online learning and had found online platforms were convenient in submitting assignments on time(64%). A greater number of students reported that online platforms were easy to use (69%), however, had difficulty in focusing online lectures during the lockdown period (60%). About 54% of the students disagreed on online learning providing better skill-based education than classroom learning.

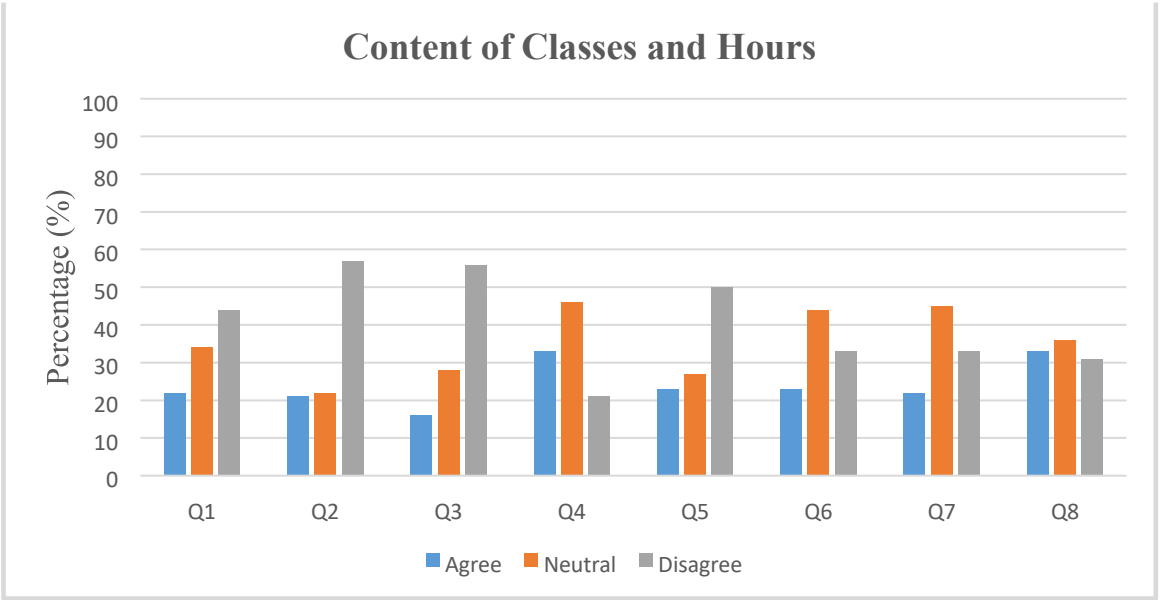

Figure 2. Bar graph representing the responses rate of participants on content of classes and hours of online learning.

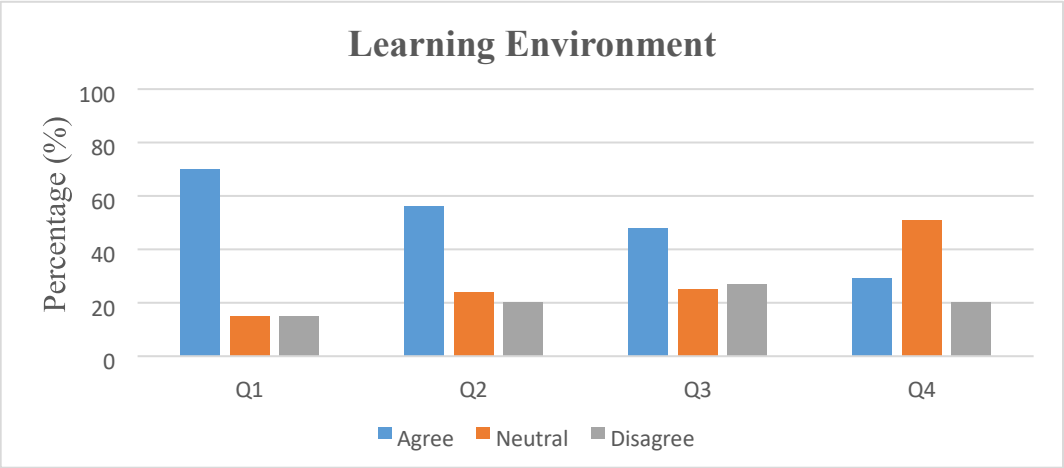

Figure 3. Bar graph representing the responses rate of participants on learning environment in online learning.

The questions used to assess the content of classes and hours with online learning are provided in supplementary (table 2).The student's response on the content of classes and hours (Figure 2) revealed that 44% of students had difficulty in being attentive during an online class and 56 % of the students had trouble understanding the course content. Supplementary table 3 provides the questions used to assess the learning environment on online learning. The students responses regarding learning environment and online learning (Figure 3) found that about 70% of the students had a suitable home environment and had daily access to the internet (56%). Nevertheless, 48% of the students agreed that they get distracted by family members or other environmental sounds while attending online classes.

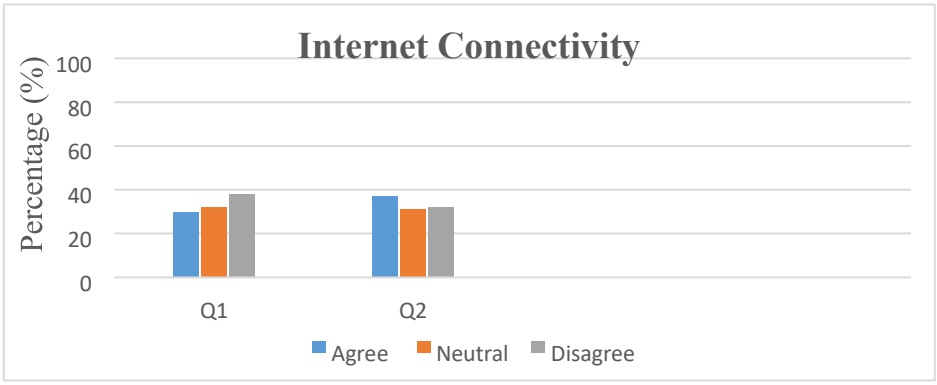

Figure 4. Bar graph representing the responses rate of participants on internet connectivity regarding online learning.

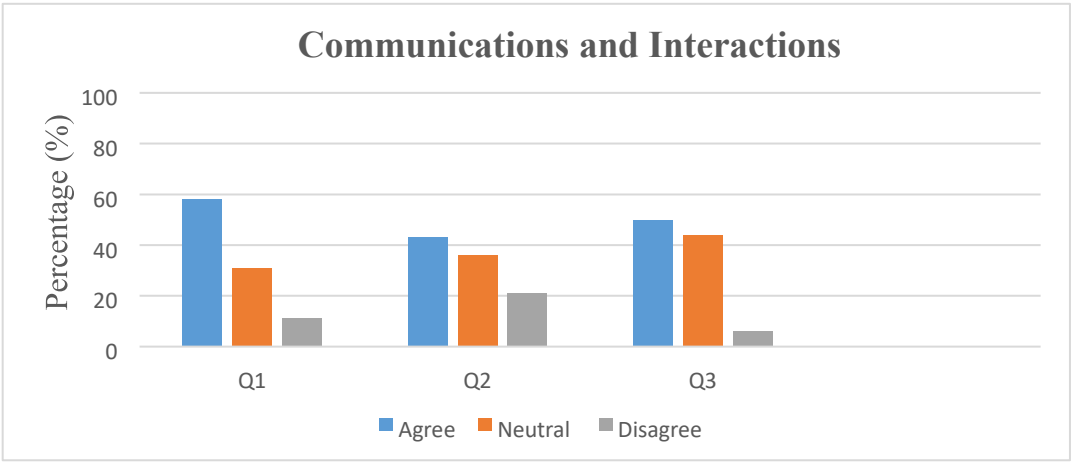

Figure 5. Bar graph representing the responses rate of participants on communications and interactions during online learning.

The questions used to assess the internet connectivity are given in supplementary table 4. The response obtained from students (Figure 4) reported that around 38% of the students disagreed on having high-quality network connectivity while attending online classes. However, nearly 30% of the students agreed that they had a better quality of network for attending online classes. The questions to assess the communications and interactions on online learning are given in supplementary table 5. The response regarding communications and interactions among students (Figure 5) revealed that prime number of health care students agreed (58%) on the aspect of minimal communication and interaction during online learning.

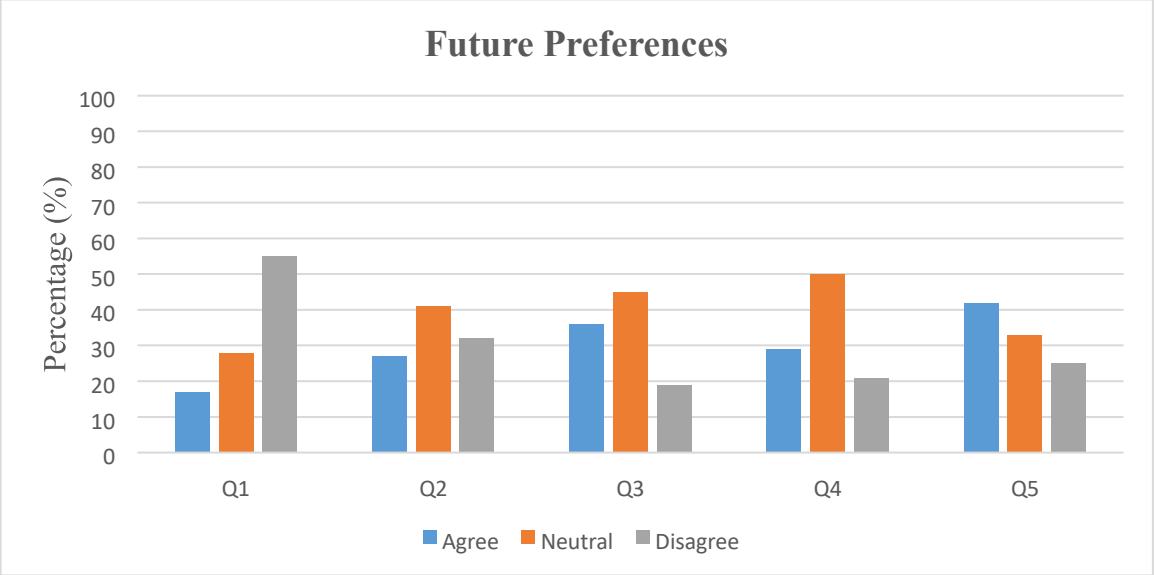

Figure 6. Bar graph representing the responses rate of participants on future preferences of students towards online learning.

Future preferences of students on online learning was also assessed (supplementary table 6). The responses for future preferences of the allied health profession students (Figure 6) disclosed that significant number of students have disagreed (55%) on the certainty of online learning providing a better quality of education. But a greater number of the students accept that education through online is more cost-effective than classroom learning (42%).

DISCUSSION

This questionnaire-based survey included 100 allied health profession undergraduate students and perceptions on online learning were evaluated in terms of various associated factors such as ease and comfort, environment, internet connectivity and future preferences. Based on our study, students find online learning as a successful way of learning during the
COVID 19 pandemic stating that online platforms were easy to manage. These results could have been observed due to the familiarity the students have in operating electronic gadgets. Similar results were found in studies (Mukhtar et al, 2020; Baczek et al, 2020), which stated that online learning is an effective way of learning and students find it amusing and easy to manage during the pandemic. [3, 10]. In our study, we found that students are having sufficient skills in using online platforms and online learning had offered a better and effective way for the submission of assignments. But contradicting findings were reported in a study (Muflih et al, 2020) where online learning helped the students with easy submission of assignments,
however, students were having difficulty in using online tools for learning.[7]
According to our study, the majority of the students had trouble focusing and have stated that they were less attentive during an online class. Similar results were found in studies (Dhawan et al, 2020; Rajab et al, 2020; wang et al, 2020) which reported that the concentration levels of the students were decreased and most of the students had anxiety and stress issues
while attending online classes. [4, 11, 12] Learning in a classroom setup along with the classmates keep the students more focused as the primary goal is to learn, but at a home setup being in a comfortable space along with family members does not give the vibe of being in a classroom, due to which there can be lack of attention to classes conducted online. Another major finding in our study was regarding the skill acquired through online learning. Our study had pointed out that online learning could not

adequately provide skill-based education, this could be due to the lack of hands on practise on certain skills that could not be provided through online class and similar results were reported in previous study done in medical students, where students were lacking direct exposure to real patients, which was limiting them from acquiring clinical skills. [3] Having hands on experience for skill learning has been associated with effective retention of cognitive and psychomotor knowledge, therefore online training for skill training may not be as effective unless it is aided with innovative technology such as immersive learning.

In our study, we also found out that students had a suitable home environment and internet access for attending online classes. Contradicting results were found in a study (Kapasia et al, 2020) where students had faced problems regarding a favourable home environment and students who stayed in the rural and remote areas had poor internet connectivity, where many students were not able to join in online classes.[1] Based on our study, the communication and interactions were limited during online learning. Similar results were found in a study that described "online learning as boring and unengaging", but our results also showed that students were satisfied with online content delivery and teaching methods. [4]

Our study expressed the outlook of allied health profession students on the continuation of online learning in the future and found the perception of students, which suggested that online learning will not be able to provide a better quality of education than classroom learning and cannot develop finer skill ability required for health science students. Based on our study, students intend to go back to the conventional method of learning after the pandemic.

Limitations

The study had several limitations. First, the study was conducted in the initial phase of the pandemic, where introduction of online learning was novel to the students. Second, the study was conducted in an independent institution where a majority of the students was financially stable. Third, it was a single-centred study conducted only among the allied health profession students of an institution and only undergraduate students were included in the study. Hence, we were not able to assess the perception of post-graduate students. Despite all these limitations, the study provides adequate data regarding the perception of students towards synchronized online learning during the pandemic.

Conclusion

Online learning is effective and a preferred way of learning during a pandemic. But it is also essential to focus on the development of psychomotor clinical skills along with the theoretical knowledge acquired through online learning. Further survey performed in the current scenario where online learning platform is well adjusted might reveal variable results.

ORCID (Open Researcher and Contributor ID):
Greeshma Molly George: https://orcid.org/0000-0002-5255-5767
Pratibha Todur: https://orcid.org/0000-0003-0967-2252
Madhura Reddy: https://orcid.org/0000-0003-4689-7557
Tomin J Thachil: https://orcid.org/0000-0001-8936-5265

CONFLICT OF INTEREST: No potential conflict of interest relevant to this article was reported.

APPENDIX:

Questionnaire:

Table 1. Questions on ease and comfort of allied health students towards online learning

1. I prefer online education over traditional classroom learning during COVID 19 pandemic.
2. I think online learning is an apt way of learning during the pandemic
3. I think I can manage online learning platforms with ease
4. I think online learning is feasible on a daily basis
5. I find online exams challenging
6. I have satisfactory skills while using a gadget with regard to online classes and assignments
7. I am able to submit assignments in a less time-consuming way using an online platform
8. I think the online platforms suggested by the faculty are easy to use
9. I am experiencing difficulties in focusing while attending online classes during the lockdown period
10. I am able to adjust with the timings when attending online classes.
11. I think practical sessions via online platform provides skill-based learning than traditional practical classes

Table 2. Questions on content of classes and hours of allied health students towards online learning

1. I understand the academic content better during online classes
2. I am more attentive during an online lecture than in traditional classroom learning
3. I think online learning is more convenient in understanding the course content than learning in the classroom
4. I think the course content delivered through the online platform is adequate
5. I think online classes can provide more information than classroom learning
6. I think that I can stay organized better in an online class compared to traditional classroom learning
7. I think online classes are apt in building critical thinking skills in student communities for discussions and other project works.
8. I think online classes serve the purpose of my education as a health professional during the current pandemic

Table 3. Questions on learning environment of allied health students towards online learning

1. My home environment provides suitable space for attending online classes
2. I am having daily access to the internet for my studies
3. I get distracted by family members or any other environmental factors (sound, light e.tc.) while attending online classes.
4. I think that online learning can create a sense of isolation within me.

Table 4. Questions on internet connectivity of allied health students towards online learning

1. I am experiencing high-quality network connectivity during online education.
2. I have sufficient internet facilities and network coverage to attend online classes

Table 5. Questions on communications and interactions of allied health students towards online learning

1. I think my communications and interactions are limited during online learning.
2. I am satisfied with the student-teacher interaction during online lectures.
3. I am satisfied with the methods used by the faculty in delivering the course content.

Table 6. Questions on future preferences of allied health students towards online learning

1. I think online learning can provide a better quality of education than classroom learning
2. I think learning via an online platform helps me in improving my technical skills.
3. I feel that online education provides me with greater flexibility regarding time and learning pace.
4. I think online education allows for a customized learning experience.
5. I think online education is more cost-effective than traditional education.

AUTHOR'S CONTRIBUTION:

Literature search, Data collection, Study design, Analysis of data, Manuscript preparation: GM
Literature search, Study design, Manuscript preparation, Review of manuscript: PT MR TT

REFERENCES:

1. Kapasia N, Paul P, Roy A, Saha J, Zaveri A, Mallick R, Barman B, Das P, Chouhan P. Impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic in West Bengal, India. Child Youth Serv Rev. 2020;1;116:105194.
2. Yusoff MS, Hadie SN, Mohamad I, Draman N, Al-Aarifin IM, Rahman WF, Pa MN, Yaacob NA. Sustainable medical teaching and learning during the COVID-19 pandemic: Surviving the new normal. Malays J Med Sci. 2020;30;27(3):137-142.
3. Bączek M, Zagańczyk-Bączek M, Szpringer M, Jaroszyński A, Wożakowska-Kapłon B. Students' perception of online learning during the COVID-19 pandemic: a survey study of

Polish medical students. Medicine. 2021;19;100(7).
4. Dhawan S. Online learning: A panacea in the time of COVID-19 crisis. Journal of Educational Technology Systems. 2020;1;49(1):5-22.
5. Adedoyin OB, Soykan E. Covid-19 pandemic and online learning: the challenges and opportunities. Interactive Learning Environments. 2020;2;1-3.
6. Shah, D. Online education: should we take it seriously? Climacteric, 2015;19; 19(1):3–6.
7. Muflih S, Abuhammad S, Karasneh R, Al-Azzam S, Alzoubi KH, Muflih M. Online Education for Undergraduate Health Professional Education during the COVID-19 Pandemic: Attitudes, Barriers, and Ethical Issues. Res Sq. 2020 Jul 16.
8. Khalili H. Online interprofessional education during and post the COVID-19 pandemic: a commentary. J Interprof Care. 2020;16;34(5):687-90.
9. Back DA, Behringer F, Harms T, Plener J, Sostmann K, Peters H. Survey of e-learning implementation and faculty support strategies in a cluster of mid-European medical schools. BMC Med Educ. 2015;1;15(1):145.
10. Mukhtar K, Javed K, Arooj M, Sethi A. Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era. Pak J Med Sci. 2020 May;36(COVID19-S4):S27-S31.
11. Rajab MH, Gazal AM, Alkattan K. Challenges to online medical education during the COVID-19 pandemic. Cureus. 2020;2;12(7).
12. Wang X, Hegde S, Son C, Keller B, Smith A, Sasangohar F. Investigating mental health of US college students during the COVID-19 pandemic: cross-sectional survey study. J Med Internet Res. 2020;17;22(9):e22817.