

Descriptive study of online learning during the COVID-19 pandemic: Perceptions of undergraduate health science students

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DOI: <https://doi.org/10.5281/zenodo.7791146>

Published Date: 01-April-2023

Abstract: Introduction: the aim of this study was to determine the perception of Allied Health Faculty undergraduate students towards online learning during the COVID-19 outbreak. Methods: A cross-sectional study was conducted with undergraduate students of the Faculty of Allied Health at the University of Peradeniya, Sri Lanka. A self-administered, four-part online questionnaire to assess demographic information; e-learning details; The insights and challenges from e-lessons were used for data collection. Results: A total of 518 responses were received from the five areas of radiology (32.8%), nursing (24.9%), medical laboratory science (18.2%), pharmacy (14.5%) and physical therapy (9.7%), resulting in a response rate of .764%. The majority prefer smartphones (73.2%) to go online and Zoom is the most used online communication platform (72.8%). The respondents' overall perception score ranged from 9 to 27 (Positive 18, Neutral ¼ 18, Negative 18) with a mean (SD) of 20.4 (4.0). Although the majority of (59.7%) agree that online learning is more comfortable to communicate than conventional learning in , most respondents (48.3%) perceive negative about the delivery of practical and clinical coursework online. Poor internet connection (67.0%) and lack of electronic devices (53.3%) is the biggest challenge encountered when learning online. Conclusion: The majority of students have a positive perception of online learning. Online learning appears to be an effective learning strategy as students have equal access to online facilities. Implications for Practice: Although medical staff college students faced some challenges, they demonstrated flexibility and acceptance of an online learning strategy during the pandemic. COVID-19. Therefore, a well-structured online learning program will benefit the students continuing to study during the pandemic.

Keywords: Allied health sciences Challenges, COVID-19, Online learning Perception, Undergraduate.

I. INTRODUCTION

The first case of COVID-19 disease in Sri Lanka was reported on January 27, 2020 and later, this pandemic gradually developed across the country. 283,512 confirmed COVID-19 cases in Sri Lanka and 3733 associated deaths were reported while 23,977 patients were under medical After the disease was identified in the country, the Sri Lankan This decision has

abruptly transformed the traditional learning platforms that favour remote online mode, especially in the higher education sector of Sri Lanka.^{6,7} However, this rapid and tools, including massive open online courses, learning management systems, and various types of video communication software.⁷ Hence, this online education presents numerous challenges and obstacles for both students and teachers. These challenges include a lack of clinical placements and assessments and learning gap. Conversely, online education has developed into an unexpected opportunity to achieve various benefits such as time-saving and Additionally, online learning offers flexibility These allied health sciences undergraduates receive theoretical education and clinical training at a practice.¹³ In the usual learning environment, the mode of the study of these students is face-to-face, and a virtual learning Hence, online learning is having a dramatic impact on these students as they cannot conduct their interactive in-class education and clinical The existing literature demonstrates that allied health undergraduates developed some stressful conditions due to this family issues and unequal access to online learning opportunities. Thus, it is significant to assess student perceptions of online education of undergraduates in the allied health sciences stream. Further, given the remote online learning opportunities, it is of continuing online education.¹⁶ Therefore, the objectives of this study were to explore the perceptions of allied health sciences undergraduates towards online learning during the COVID 19 pandemic and to identify the challenges associated with it. design and delivery of effective online education systems for allied health undergraduates.

II. METHODS

A cross-sectional descriptive study was conducted from May to June 2021 at the Faculty of Allied Health Sciences, Peradeniya University, Sri Lanka. It is the largest faculty dedicated to medical education in Sri Lanka. Ethical clearance was obtained from the Ethical Review Committee of the Faculty of Allied Health Sciences, University of Peradeniya. This study enrolled all undergraduate students (678) into the faculty and they were affiliated with the five allied health disciplines of radiology, physical therapy, medical laboratory science, and pharmacy. Nursing. After reviewing the literature, a self-administered online questionnaire was developed using Google Form survey management software (Google LLC, Mountain View, CA). Questionnaire consists of four subsections with a total of 25 questions. At the start of the questionnaire, a trailer explains the objectives, confidentiality of responses, voluntary participation, and the right to withdraw. All questions in the questionnaire are multiple-choice, except for the third part and the fourth part, questions using a three-level Likert scale (disagree ¼ 1, neutral ¼ 2, agree ¼ 3). The first part consisted of four questions about the demographic information of the participants. The second section focuses on specific tools and devices used by college students for online learning. The third section assessed 's perceptions of online learning, with an overall score of ranging from 0 to 27.

A higher score reflects a positive perception. The last section is designed to identify challenges in online education. Prior to administration of the questionnaire, the validity of the content was reviewed by two faculty experts and any necessary adjustments were made based on their responses. Experts were selected by based on two criteria: they had been a faculty member or senior in the department for at least 5 years and had taught online for at least one year during the pandemic. predictive validation was determined by administering an initial questionnaire to two randomly selected undergraduate students in each discipline, of whom were subsequently excluded from the final study. The questionnaire with an open invitation was sent via e-mail to all undergraduate students of the department. Statement of consent was obtained from each participant at the time of registration. To ensure the highest possible response rate, a reminder was sent to all students after the questionnaire continued for two weeks. The Statistical Package for the Social Sciences (SPSS) was used for data analysis, and questions with incomplete information were excluded. Descriptive analysis was presented in as a frequency table. The t test and analysis of variance (ANOVA) were used to evaluate the significant difference ($p < 0.05$) between the different groups.

III. RESULTS

Demographic information

A total of 518 completed questionnaires were returned (57 incomplete questionnaires and 103 non-respondents), representing a response rate of 76.4%. More than two-thirds (69.3%) of the respondents were female and more than half (60.4%) belonged to the age group 19e24 years. A large number of respondents (32.8%) were from radiography. Comparatively, there was a higher response rate (36.5%) from the first-year undergraduates.

Details of online learning activities

The details of the online learning activities. The majority (73.2%) attended online learning sessions using smartphones. Moreover, Zoom is the most frequently used online communication platform (70.9%), followed by Moodle (26.3%). Further, the majority of respondents (72.4%) stated that they had only attended theoretical lessons. When considering the type of online learning strategies used by respondents, fairly symmetrical responses were received for both live online classes (47.3%) and offline uploaded lectures (46.9%)

Perception towards online learning

Overall respondents' perception of online The majority (71.0%) perceive online learning as positive. Most respondents agreed that online learning is more comfortable to communicate than Further, more than half of the undergraduates (61.8%) agreed that online learning is more flexible and could save believed that online learning was convenient and allowed students But only 21.2% agreed that the motivation of students to study is higher when learning online. the lowest mean value for the overall perception of online learning overall perception based on the age .

IV. DISCUSSION

The COVID-19 pandemic has resulted in a formidable academic disaster around the world, particularly in low and middle-income countries. Strategies and thereby adapt to the online teaching and learning environment. 7,10,18 The allied health science degree basic information relevant to the online learning of allied health sciences undergraduates that may be used in the future in developing an effective online learning environment. As indicated in the results, positive insights into the implementation of online learning were received. undergraduates in this study believed that online learning was convenient, time-saving and less time-consuming to deliver courses, many undergraduates agreed that traditional education is Further, many undergraduates indicated that student motivation is higher in traditional face-to-face learning than in online learning. in online learning. Online learning is an individual act and it can make students feel like they are learning all alone. 19 In addition, students who have limited or no access to online resources may face discrimination, but all students have equal access to face-toface education. studies, undergraduates' perceptions of online learning differed across disciplines around the world.

According to this study, perception, but they still demonstrated positive perception.

According to literature,20,21 most undergraduates have fairly positive perceptions towards online learning, including this study. According to the results, the majority of online learning is findings among undergraduates in various disciplines. 20,23 Smartphones are devices that can disseminate knowledge inexpensively reason for the higher accessibility of online learning activities more focused on clinical-based education. also limited features in a smartphone to facilitate a good learning usefulness of online learning. Lanka Education and Research Network (LEARN). 7 This made Zoom and Moodle free digital platforms for all undergraduates in Sri This study reveals that undergraduates are currently getting are the most frequently used communication platform of the study This finding is supportive with available results indicated in the previous studies25,26 conducted in Sri Lanka with undergraduates in different disciplines. into the online environment has presented teachers and students was one of the main reasons for limited online access for many highlight the need of providing interactive online learning activities. The curriculum of the allied health disciplines consisted of show that few practical lessons have been conducted through online communication platforms. navigation of practical lessons through online modes.

Availability of virtual learning and teaching facilities to promote skills-based online education. 18 These results also highlight the requirement of implementing interactive online learning sessions Further, implementation of online education requires a change in content delivery, communication, and assessments. 27 Therefore, it is vital to preparedness and maximize the benefits of online education. This study has several limitations. allied health faculties in Sri Lanka, this study only focused on one Furthermore, this study does not consider students who need additional attention during the transition to the online learning Therefore, the generalizability of this study may be limited. no study has focused exclusively on the perception of allied health sciences undergraduates toward online learning during the COVID19 pandemic in the world. Many studies have only focused on one professional group of undergraduates. study to assess the perceptions of undergraduates towards online learning among different allied health science professions.

V. CONCLUSION

Online learning appears to be an efficient learning strategy that can save time, enable courses to be completed quickly, and, in particular, control the COVID-19 pandemic among students during continuing education. However, this appears to be less productive because of the numerous challenges involved. The most intriguing challenges identified in this study are unequal access and the less availability of online learning facilities, less interactive sessions between students and teachers, and the inability to complete clinical training. Therefore, it is essential to take remedial actions to identify and address the challenges involved in online learning in order to maximize its benefits in various disciplines that practice skill-based education.

Conflict of interest statement

The authors declare that they have no competing interests.

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