Original Article

E-Learning Challenges among Nursing Students During COVID-19 Pandemic Period

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Abstract - The global spread of coronavirus disease 2019 (COVID-19) is triggering a range of public health responses. E-learning tools are playing a crucial role in technological, educational, and socio-economic challenges exist. The aim of this study was to assess the challenges of E-learning during the COVID-19 pandemic among nursing students in Nurses' Diploma School, Galle. This descriptive cross-sectional study was used among 273 nursing students. Data was collected through a pretested self-administrated questionnaire using stratified random sampling, and SPSS version 25 was used for data analysis. Out of the respondents, thirty-three point seven percentage (33.7%) of respondents were not interested in e-learning, thirty-seven percentage (37) % of respondents had no previous experience in e-learning. The majority of the respondents (65.9%) got disturbed during online classes, and the majority of students (70.7%) did not have a stable internet connection. More than half of the respondents (69.2%) got disturbed by their online classes because of connection loss. Most of the respondents (92.6%) faced difficulties in downloading sessions, and half of the respondents (44%) were not satisfied with a lecture to clarify doubts. The majority of respondents were suffering from health issues. However 15% of nursing students were not happy about e-learning. There is a significant association between the selected demographic variables of the respondents and challenges to e-learning. E-learning is a good opportunity for education, but in the context of developing countries l, it is not fully effective unless the factors affecting the e-learning process are considered.

Keywords - e-learning, Challenges, Nursing students, COVID 19.

1. Introduction

The disease Coronavirus 2019 (COVID-19) is an infectious disease related to acute severe respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 was first detected in December 2019 in the Wuhan of Hubei province in China and has expanded globally, starting the coronavirus pandemic 2019–20. It had an epidemiological relationship with a seafood market in Wuhan, China (1). The COVID-19 virus pandemic is a dangerous disease that has influenced person lives and, in many instances, threatens the infected people's lives. In additionally, this pandemic illness occurs a fast danger to the community functions of the world. Such influence comprises the loss of incoming ways and its impact on families, switching to the mode of academics because attendance type and communication type have been exchanged to online learning and have reported many changes in human lifestyles (2).

E-learning is the most rapidly developing learning method that is used as an alternative to continuing education (3). The impact of the e-learning method in nursing is mainly recorded in the domains of reactions of the nurse, knowledge, and nurse skills. The effect of e-learning methods on nurses in a delivering education basis endures unknown relating to how the education can be transformed to move practices and impact patients 'outcomes. Furthermore, methodological, theoretical, scientific, and practical-based developments are required in the rapidly growing section of e-learning in the education of nursing, principally in life learning perspectives (4).

In the qualitative descriptive study conducted for eleven students, 45.45% were junior and 45.55% were senior nursing students in the baccalaureate nursing programme at a university in the Pacific Northwest; they have been mentioned that due to COVID-19 pandemic, many challenges presented in a nursing education programme which are traditionally conducted in the face-to-face learning environment. That includes hand on experience on learning, they identified the challenges, academic relationship challenges, role stress and strain and resilience and preservice. (5). In Canada, research was conducted to outline the challenges of education during COVID-19 followers; it was a qualitative study, and 250 students of Athabasca University participated. This study outlines the challenges of education during COVID-19 as follows: learning the possible transmission of COVID-19 due to travel, if they are exposed to the clinical setting, they risk their family also. Therefore, online education is a good solution in this pandemic situation (6).

Descriptive cross-sectional research was conducted among 360 university students in Uganda to assess the awareness attitude, preferences, and challenges to e-learning. They have administrated the web-based questionnaire. This study shows that although the awareness of e-learning is high, attitudes are negative. High internet costs, poor internet connections, limited technical skills in the usage of e-learning platforms and challenges in accessing electricity are common barriers. (7). The study was conducted with 10 faculty students and 10 nursing students, and they were interviewed regarding e-learning. The students were satisfied with their online education experience (8).

Considering the Sri Lankan context, as a developing middle-income country, has various factors affecting nursing education (9). However, during the pandemic, most education institutes quickly shifted to online education. One study done in Sri Lanka with University students and found main findings reported that five online assessments were used to examine students' education performances under online learning, comprising presentations, examinations, quizzes, case studies, and submissions of reports through online.

The study recorded pieces of statistical and qualitative evidence that virtual examinations, quizzes, and submission of reports have a noticeable influence on university students' academic performances (10). However, The shift from traditional face-to-face learning methods to online learning has brought challenges to both teachers and students in all fields. E-learning tools are playing a crucial role during the pandemic, but in developing countries like Sri Lanka, various challenges exist. Therefore, The current study focuses on the challenges of e-learning among Nursing Students during the COVID-19 pandemic situation in the Nursing Diploma School, Galle.

2. Purpose of the Study
2.1. General Objective
To assess challenges to e-learning among nursing students during the COVID-19 pandemic in Nurses' Training School, Galle.

2.2. Specific Objectives
To assess the social challenges to e-learning among nursing students during the COVID-19 pandemic. To assess technological challenges to e-learning among nursing students during the COVID–19 pandemic. To assess educational challenges to e-learning among nursing students during the COVID-19 pandemic.

3. Methodology
3.1. Study Design
A descriptive cross-sectional study was used to assess challenges to e-learning.

3.2. Study Population
Second- and third-year nursing students who have continued the Diploma in General Nursing in Nursing Diploma School, Galle, online during the COVID-19 pandemic.

3.3. Sampling Method
The sampling method was Stratified Random Sampling. Data was collected from second-year and third-year nursing students. There were 300 second-year students and 350 third-year students. The ratio of second-year nursing students to third-year nursing students was 6:7.

3.4. Sample Size
The sample size was calculated using the Yamane formula. Total no of nursing students = 273 (second year students: Third Year Students =126: 147) was participated to the study

3.5. Measurements
A pretested self-administrated questionnaire developed by the researchers based on scientific literature was used as a data collection tool. The questionnaire consists of four sections, as shown below. Section 1 – Socio-demographic data, Section 2 – Social challenges to E-Learning, Section 3 - Technological challenges to E-Learning, Section 4 - Educational challenges to E-Learning.

3.6. Data collection
Permission was obtained from the principal of the Nurses' Training School, Galle. The questionnaire was given in English language. Informed written consent was obtained from all the participants after giving instructions on the secrecy of the data. They were given adequate time [15 to 20 min] to complete the questionnaire. Finally, the completed questionnaire was collected.

3.7. Data Analysis
Data were analyzed using descriptive statistics such as frequencies and percentages and inferential statistics such as chi-square. Statistical Package for the Social Sciences (SPSS) version 25 was used as the data analysis tool.

3.8. Ethical Consideration
Ethical approval was obtained from the Ethics Review Committee of the KIU. Then, the approval was obtained from the principal of the Nursing Diploma School, Galle. All the relevant information about the study was explained via the information sheet. Informed written consent was obtained from all the participants prior to the study. The consent could be withdrawn at any point in the study without any consequences.

Questions were given in the English language. Participants were given adequate time, approximately 15 min- 20 min, to complete the questionnaire. To maintain the anonymity of data, the names and registration numbers of the nursing students were not obtained in the data collection procedure.

All the data collected was treated as private and confidential. Data were used for research purposes and publications regarding this research by using only the sum of collected data. Data were stored for three years on password secure, which could be accessible to the investigator and supervisor. The findings were disseminated.
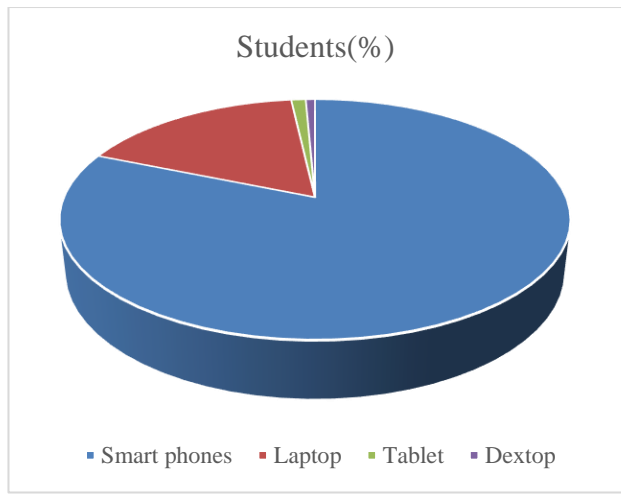
Fig. 1 Devices used in e-learning

4. Results

A total of 273 second-year and third-year nursing students were included in this study. Table 1 depicts the socio-demographic data. Among 273 nurses, 62.2%) were from rural areas. The majority of them (83.9%) were from the nuclear family. And most of their (44%) monthly income was between Rs.50000- 75000. Here, 81.3% of the respondents used smartphones, and 0.7% of respondents used desktops for their online classes daily (Figure 1). Researchers asked for some other information about E-learning from nursing students. There, 47.5% of respondents said that they spend 30-39 hours on online classes in a week. (Figure 2).

Table 2 highlights social challenges to E-learning among nursing students, with 33.7% of respondents not interested in E-learning. Among them 37% of had no previous experience in E-learning. A few respondents (2.2%) did not get family support for their studies. Around one-quarter of respondents (28.2%) had no separate room for studies. Moreover, 14.5% of respondents live in noisy-crowded environments. And 37.4% of respondents were not motivated by studies. The majority of the respondents (65.9%) got disturbed during online classes because of social media distractions such as WhatsApp, Facebook, Instagram, and YouTube.

Table 3 highlights technological challenges regarding E-learning, where the majority of students (70.7%) did not have a stable internet connection. Among them, 7% of respondents had good computer skills. More than half of the respondents (69.2%) got disturbed by their online classes because of connection loss. 16.5% of respondents were unable to complete their assignments without any technical difficulties. The majority of the respondents (92.6%) faced difficulties in downloading teaching sessions.

Table 4 shows the educational challenges of respondents. There, 16.8% of respondents could not understand subjects clearly through online modes. Around one-quarter of the respondents (25.3%) had poor attention

to lectures in online classes. Moreover, around half of the respondents (44%) did not satisfy the level of interaction with the lecture to clarify doubts.

The majority of respondents were suffering from health issues because of E-learning. Identified health issues are headache (40%), back pain (33.3%), gastritis (6.6%), and vision problems(20%). The majority of respondents said E-learning is less effective than face-to-face learning. Moreover, 15% of nursing students were not happy about E-learning.

Table 1. Socio-demographic data

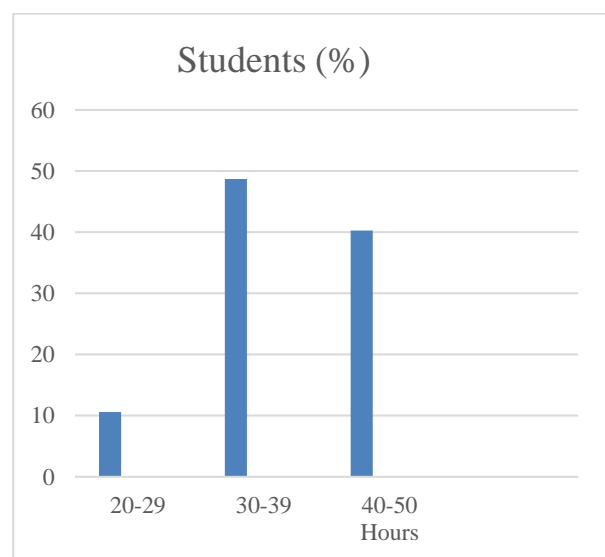| Characteristics	Frequency	Percentage
Gender		
Male	28	10.3%
Female	245	89.7%
Age		
25-30years	211	77.3%
22-25 years	58	22.7%
Nationality	100	
Sinhala	0	100%
Tamil	0	
Muslim	0	
Other		
Residence		
Urban	106	38.8%
Rural	167	61.2%
Monthly income (LKR)		
<30000	9	3.3%
30000- 49999	61	22.3%
50000 – 74999	120	44%
75000 – 100000	48	17.6%
>100000	12	4.4%
Family Type		
Nuclear family	229	83.9%
Extended family	44	16.1%

Fig. 2 Hours spend on online classes in a week

Table 2. Social Challenges to E-learning

Characteristics	Frequency	Percentage
Interested in E-learning		
Yes	181	66.3%
No	92	33.7%
Has experience in E-learning		
Yes	172	63%
No	101	37%
Get family support for studies		
Yes	267	97.8%
No	06	2.2%
Have a separate room for studies		
Yes	196	71.8%
No	77	28.2%
Live in a noisy- crowded environment		
Yes	39	14.3%
No	233	85.3%
Motivated in studies		
Yes	171	62.6%
No	102	37.4%
Experienced in online distractions		
Yes	180	65.9%
No	91	37.4%
Social media distractions		
WhatsApp	70	25.6%
Facebook	93	34.1%
Instagram	15	5.6%
YouTube	02	0.7%
No distractions	91	37.4%

Table 3. Technological challenges to E-learning

Characteristics	Frequency	Percentage
Computer skills		
Low	19	7%
Moderate	138	50.5%
Good	112	41%
Excellent	3	1%
Have a stable internet connection		
Yes	45	16.5%
No	193	70.7%
Sometimes Connection loss during the class time last week		
No connection loss	84	30.8%
One time	50	18.3%
Two times	137	50.2%
More than two times	2	0.7%
Experienced technical difficulties in completing the assignment		
Yes	45	16.5%
No	193	70.7%
Sometimes	35	12.8%
Difficulties in downloading teaching sessions		
Yes	20	7.3%
No	153	56
Sometimes	100	36.6%

Table 4. Educational Challenges to E-learning

Characteristic	Frequency	Percentage
Can understand subjects through online modes		
Yes	227	83.2%
No	46	16.8%
Attention to teacher in online learning		
Poor	69	25.3%
Good	188	68.9%
Best	16	5.9%
Satisfy the level of interaction with the teacher to clarify doubts.		
Yes	153	56%
No	120	44%
Rate of effectiveness of traditional face-to-face learning in terms of increasing knowledge		
Not at all effective	15	5.5%
Slightly effective	29	10.6%
Moderate effective	107	39.2%
Very effective	96	35.2%
Extremely effective	26	9.5%
Health issues suffering because of online classes		
Headache	120	40%
Backache	100	33.3%
Gastritis	20	6.6%
Eye problems	60	20%
Other	0	0%
Suffering from health issues		
Never	10	3.7%
Rarely	77	28.2%
Sometimes	164	60.1%
Often	13	4.8%
Always	9	3.3%
Feeling about E-learning		
Poor	14	5.1%
Below average	29	10.6%
Average	141	51.6%
Good	82	30%
Excellent	7	2.6%

5. Discussion

The study explored the challenges of e-learning among nursing students during the current pandemic. Data were collected, highlighting three major challenges. There were social, educational, technological, and educational challenges. Under the social challenges, the study revealed that the majority of the students had no previous experience

in e-learning. Another common challenge was that respondents were disturbed during online classes because of social media distractions, and the main examples are WhatsApp, Facebook, Instagram, and YouTube. The majority of students lived in a calm, peaceful environment, but the rest of the 14.3% had noisy, crowded environments that disturbed their learning sessions.

The major technological challenge identified in this study was Internet connectivity issues. Internet access is a fundamental requirement for successful interactive studies. Notably, the majority of the students (70.7%) did not have a stable internet connection during their online classes. 69.2% got disturbed for their online classes due to internet connection losses. Results showed that 96.2% of respondents faced difficulties in downloading teaching sessions. Other significant technical challenges included the majority of these students not having good computer skills. The rest of the 16.5% of the study population experienced technical difficulties in completing assignments online. These major technological challenges lead to a lack of motivation for e-learning and a lack of satisfaction about e-learning among students. The findings of the current study reported that of students with less interest in e-learning, 33.7% faced some barriers and physical discomforts. However, previous studies reported some results: 156 students (73.93%) preferred e-learning to some extent, and (63.98%) 135 students experienced e-class that was not as effective as the physical teaching method. The majority of the students felt disturbed by online classes related to internet and electricity issues [11]. Similar results were reported that 77.4% of students had a negatively affected perception towards online learning [12]. Another study reported different results from similar studies, stating that the majority of the students reported positive attitudes regarding e-learning [13].

Educational challenges included in this study were the majority of respondents had poor attention to the teacher in online classes, and 44% of respondents did not satisfy the level of interaction with the teacher to clarify doubts.16.8% of respondents were unable to understand the subject through online modes. The majority of the students have health issues when using digital screens for a long period. A study reported the impact of e-learning during the COVID-19 pandemic among nursing students and teachers in Nepal. one of the critical challenges similar to this study is that more than half of the students of the student population (63.6%) got disturbed by their online classes because of the Internet problem. Likewise, almost half of the teachers in the above study (48.1%) were disturbed when conducting their teaching sessions because of Internet problems [14]. The current study presents more than half of the respondents (69.6%) got disturbed by their online classes due to connection losses. Also, the majority of the respondents faced difficulties in downloading teaching sessions. (96.2%). In contrast, past study results among undergraduate nursing students during covid- the 19 pandemic in India showed major barriers perceived during online classes were health issues like fatigue, eye pain, and

headaches resulting from prolonged usage of digital screens [15]. in the country, current study findings explore that the greatest challenges were technical issues, and findings show that the majority of students still prefer face-to-face learning methods.

6. Conclusion

The present study concludes that technological challenges were the most prevalent challenges to e-learning. Technological challenges include internet connectivity using smartphones and laptops. The majority of them do not have stable, strong internet connections. The study revealed that the majority of respondents were not interested in e-learning because of the social challenges of e-learning. Another common challenge was that respondents were disturbed during the e-learning system because of social media distractions such as WhatsApp, Facebook, Instagram, and YouTube. Educational challenges include a study where respondents paid poor attention to lecturers in e-learning. The majority of respondents were suffering from health issues such as headaches, back pain, gastritis, and vision problems. The current study findings' greatest challenges were technological issues. Researchers recommended extracting the technology challenges of e-learning for further research.

Recommendation

Nursing schools that take on and adopt e-learning during and beyond the COVID-19 pandemic must be cognizant of the possible challenges to e-learning. Nursing educators and students must discover routes to reduce the reported barriers to grab the evolving opportunities of online learning. Moreover, while these barriers endure challenges, nursing educational schools must settle the defect of online learning, gain the required measures to enhance directions, be prepared to move e-learning modalities and attempt to create e-learning in the pandemic times of still relent more positive and fecund online learning experiences.

Awareness should also be given to the constant educational assessment of nursing students' e-learning experiences and focus regarding online learning on an e-learning platform as the nursing education systems consist of coping with the health pandemic situations.

Recommendations to adequately support students through advanced preparation, pre-course assessment of IT skills, continuous support and feedback must be addressed. To address accessibility issues, internet operators should ensure that internet connectivity is strong and also reduce the cost of internet bundles. The government should assist students in getting laptops and tablets that can help to prevent social distractions. Another sensible method would have been launching students to e-learning prior to the pandemic situation.

This situation has given some e-learning experience for nursing students. E-learning cannot be driven by technology alone; its successful incorporation into nurse education

needs to be underpinned by an understanding of both its value and limitations, which is supported by a sound knowledge of both students and tutors. In addition to that, it is important to focus on many things related to the characteristics of the learner, such as the characteristics of the student's background knowledge and methods of motivation for nursing students, as one of the influences of pedagogy. Although the current study focused on challenges to e-learning through this study, there are benefits as well. Therefore, the current study recommends conducting research to highlight the benefits of e-learning. Finally, the study suggested that blended learning, an approach to education that combines online educational materials and opportunities for interaction online with traditional place-based classroom methods, will be more effective.

Limitation

The majority of the students in the study group were Sinhala students, and it does not represent all ethnic groups in the country, which is a limitation. Also, this study was limited to only the nurse's training school, Galle. Therefore, nursing students in other areas of the country were not included; thus, the result cannot be generalized. With the subsiding of the Covid-19 pandemic, e-learning was converted to face-to-face learning. Therefore, the study had to collect the data from the period of face-to-face learning. Because of that, it can be a recall bias.

Acknowledgement

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