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# Online learning in nursing students: Satisfaction and barriers

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## Abstract:

**BACKGROUND:** The nationwide coronavirus (COVID-19) pandemic and ensuing lockdown has enforced institutions crosswise India to provisionally close to inhibit the spread of the virus and started online learning for students. To measure the level of satisfaction of nursing students with online learning and to identify the barriers which restrict to online learning.

**MATERIALS AND METHODS:** The current study adopted quantitative research approach with an online survey research design and carried out during May–June 2020. Participants were selected through a web-based survey (Google form), in which 219 students enrolled. Self-structured questionnaire with the Likert scale was used to measure the level of satisfaction of nursing students with online learning and identify the barriers which restrict online learning. The descriptive and inferential statistics were used for the analysis in which 219 participants were enrolled in the study of data with IBM SPSS version 20.

**RESULTS:** Majority of student's participants 148 (67.57%) were extremely satisfied with online learning. The findings suggest that the highest barriers which restrict to online learning among nursing students is low voice and language clarity ( $2.16 \pm 0.593$ ), physical health barriers such as eye strain ( $2.43 \pm 0.613$ ), reliability and connectivity problem ( $2.26 \pm 0.534$ ). Among all demographic data, age is significantly associated with the level of satisfaction of online learning.

**CONCLUSIONS:** The study data indicated that maximum students were extremely satisfied the with online learning and among barriers which effect online learning is low voice and language clarity, reliability and connectivity problem, physical health barriers such as eye strain.

## Keywords:

Barriers, online learning, satisfaction, students

## Introduction

The nationwide coronavirus (COVID-19) pandemic and the resultant lockdown has enforced schools and colleges across India to temporarily shut to prevent the spread of the virus and this unprecedented change had created a big gap in the education system, the central and state government doing their best to provide support for online learning. Several institutions in the country are now initiated online classes to help students continue their education with ease from their homes.

This is creditable that how easily some educational institutions have switched to virtual classrooms, after undertaking licence of Zoom, Google Hangouts, Cisco webex, and Microsoft Teams.

The faculties are trained in the use audio video control and Q and A chat boards. It is easier to monitor online classes as only to click link and join in any online teaching class. As per time table in weekdays, students will attend classes virtually. As a usual day, the hours are occupied with activities, classes, and assignments. Rarely, there are difficulties due to network connection. The faculties and institutions are putting additional effort to occupy students

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in classes by revising timetables, shifting discussions online, giving live demonstration, and monitoring student's regularly.<sup>[1]</sup>

Online education, an outcome of the digital world has taught us many things at all the levels of education. The Institution each time considered online educational apps or digital learning as a supplemental tool and also may they had difficulty in mainstreaming it, due to nonunderstanding of its efficiency. However, the existing situation boost up us for implementation of technology, testing with online learning and measure its success.<sup>[2]</sup>

Online education could be a consistent solution to accommodate this problem. The government of India, for the first time, is allowing Indian universities to offer online degrees which previously were limited to foreign universities. Education is going to be digital in the foreseeable future and with the right infrastructure and policies in place, we would be better prepared to handle it.<sup>[3]</sup>

E-learning had become a significant method in education for its proficiency in providing education with lower costs, for ease of accessibility at anytime and anywhere, and for overcoming many traditional educational problems. E-learning is not equivalent to traditional classroom methods in regard to students' advance knowledge and performance. However, the impact of online learning methods on students' satisfaction, motivation, and self-assessment is greater when it is integrated with conventional methods. Students in health profession fields are required to gain and incorporate theoretical and clinical knowledge in a suitable environment to become competent health professionals. The importance of one-to-one supervision and hands-on training in such fields poses a challenge for E-learning curriculum.<sup>[4]</sup>

The effectiveness of online learning is influenced by many factors. Some factors create barriers for online learning, such as administrative issues, social interaction, academic skills, technical skills, learner motivation, time and support for studies, technical problems, cost and access to the internet. Other factors could result in low-quality online learning, for example, an ineffective design and arrangement of multimedia materials. The effective analysis of online and offline teaching in education, therefore, should depend on a comprehensive consideration of how they are used across groups. It should all be assessed including the learning goals, design properties of the learning materials, evaluation of learning outcomes, etc.<sup>[4]</sup> The study is important and beneficial for organizations implementing E-learning to realize and prevent E-learning failure in an organization. The purpose of this study is to measure the student

satisfaction and describe analyze key barriers that lead to E-learning failure in institutions during COVID-19. Moreover, to investigate and prioritize the most critical barriers in E-learning and it is necessary to be considered and aware by gathering data from students.

## Materials and Methods

### Study design and sample size

An online survey was conducted among undergraduate and postgraduate nursing students from May to June 2020 in Western Rajasthan, India. The study aimed to measure the level of satisfaction of nursing students with online learning and to identify the barriers which restrict to online learning. An overall sample of 219 participants enrolled and responded.

### Ethical consideration

Ethical clearance was obtained from the Institutional Ethics Committee wide letter no. AIIMS/IEC/2020-21/2058. Data were collected after getting formal permission from the concerned authorities. An online informed consent was taken from each student after explaining the purpose of the study.

### Data collection measures

A self-structured questionnaire was used for data collection, which was validated by experts and was found reliable. The assessment questionnaire was found to be 80% reliable with Cronbach's  $\alpha = 0.81$ . Questionnaire consisted three sections: (a) Demographic profile (age, gender, course, technology that students own, technology (access to internet), area of living, previous experience of online learning, effectiveness of online learning, etc.); (b) Questionnaire to measure the level of satisfaction about online learning. It has a list of 15 items with 5-point Likert scale that ranged from "strongly agree" to "strongly disagree" with the range of scores for this scale was 15–75. (c) Questionnaire to identify the barriers with respect to online learning. It has a list of 20 items with always, sometime, and never response options in three subscales, namely administrative barriers (5 items), individuals barriers (9 items), and technological barriers (6 items). The maximum possible score is 60, and the minimum possible score is 20.

### Statistical analysis

Descriptive and inferential statistics were used for the analysis of data with IBM SPSS version 20 (Released 2011. Switzerland; IBM corp) as per the study objectives and hypothesis. In the descriptive analysis, calculations were done by using frequency, percentage, mean, and standard deviation and for inferential statistics, Chi-square was used to find the association of satisfaction of online learning and barriers with sociodemographic variables.

## Results

Table 1 explains about the demographic characteristics of the study participants. Majority of students participants were 149 (68.03%) were aged 21–24 years. Almost all study participants 217 (99.1%) were female and only 02 (0.9%) were male. The maximum number of participants were pursuing B. Sc. Nursing course 200 (91.3%) and only few participants were pursuing M. Sc. Nursing course 19 (8.7%). Significant number of participants 206 (94.1%) were having access to Internet by cellular (mobile). Maximum participant 200 (91.35%) were using smart phone for online learning and only few participant 19 (8.70) were using laptop. As far area of living 135 (61.6%) participants was living in the rural area and less than half 84 (38.4%) were living in the urban area. Furthermore, it is found that 181 (82.6%) of participant had no previous experience of online learning and only few participant 38 (17.4%) had previous experience of online learning.

Table 2 explains about the level of satisfaction of students with online learning, maximum student's participants

**Table 1: Frequency and percentage distribution of demographic variables (n=219)**

Variables	Frequency, n (%)
Age (years)	
<20	60 (27.39)
21–24	149 (68.03)
Above 25	10 (4.56)
Gender	
Male	2 (0.9)
Female	217 (99.1)
Course	
B.Sc. nursing	200 (91.3)
M.Sc. nursing	19 (8.7)
Technology (access to internet)	
Broadband internet	2 (0.9)
Wi-Fi	11 (5)
Cellular (mobile) internet	206 (94.1)
Technology that students own	
Laptop	19 (8.70)
Smartphone	200 (91.3)
Area of living	
Urban	84 (38.4)
Rural	135 (61.6)
Previous experience of online learning teaching	
Yes	38 (17.4)
No	181 (82.6)

**Table 2: Level of satisfaction of students with online learning**

Level of satisfaction	Frequency (%)
Extremely satisfied	148 (67.57)
Satisfied	71 (32.42)

148 (67.57%) were extremely satisfied, less than half 71 (32.42%) were satisfied. None of the students was found dissatisfied.

Table 3 explains that barriers with online learning, in regard to administrative barriers, it is found that, low voice and language clarity was highest barriers ( $2.16 \pm 0.593$ ) followed by big class size (more number of students) ( $1.92 \pm 0.837$ ) among student participants and online materials delivered on time ( $1.47 \pm 0.561$ ) was lowest barrier and in individual barriers, physical health barriers such as eye strain was highest barriers ( $2.43 \pm 0.613$ ) followed by the lack of communication among students and teacher ( $2.11 \pm 0.677$ ) and lack support from family, friends, and organization ( $1.48 \pm 0.645$ ) was lowest barriers. In regard to technological barriers, reliability and connectivity problem ( $2.26 \pm 0.534$ ) was highest barriers followed by online learning environment is not inherently motivating ( $2.20 \pm 0.634$ ), Lack of resources (multimedia/compatible cellular phones) ( $1.89 \pm 0.718$ ) was lowest barriers.

Table 4 depicts the association of level of satisfaction with selected demographic data of participant age, gender, course, and technology that students own, technology (access to internet), area of living, previous experience of online learning, effectiveness of online learning, etc. It was found that none of the demographic data is associated with the level of satisfaction of online learning ( $P > 0.05$ ).

## Discussion

In the present study, more than half participant 149 (68.03%) were 21–24 years old, which is similar findings have been reported for other related studies in which average age 24.6 years.<sup>[5]</sup> Moreover, in one more study, it is found that almost 83% of the students are between 17 and 30 years of age.<sup>[6]</sup> Further, in the present study, 99.1% were female, these findings resemble which found that most of participant were females (64.8%) in online learning.<sup>[6]</sup>

In the current study, it is found that 148 (67.57%) participants are extremely satisfied with online learning which is similar to a study done by Yazdannik *et al.* which concluded that the satisfaction scores before intervention in both e-learning and traditional groups were not statistically significant, whereas there was a significant difference between two groups after 2 weeks after the intervention ( $P = 0/015$ ).<sup>[7]</sup>

Sammarraie *et al.* found in case study that online students are more affected by the factors of communication which is similar to the present study findings that the

**Table 3: Barriers with online learning**

Barriers	Mean±SD	Rank
<b>Administrative barriers (6)</b>		
Online materials delivered on time	1.47±0.561	6
Instructors competency is less about online teaching	1.89±0.521	3
Big class size (more number of students)	1.92±0.837	2
Lack of timely feedback from instructor	1.70±0.674	4
Lower quality materials through online	1.60±0.698	5
Low voice and language clarity	2.16±0.593	1
<b>Individual barriers (8)</b>		
Resistance of change (fear of computer and technology)	1.80±0.685	6
Less capability and skills	1.86±0.632	4
Less self-motivation	1.82±0.633	5
Concerns of privacy or confidentiality online	1.98±0.722	3
Physical health barriers such as eye strain	2.43±0.613	1
Lack of communication among students and teacher	2.11±0.677	2
Afraid of feeling isolated	1.69±0.692	7
Lack support from family, friends and organization	1.48±0.645	8
<b>Technological barriers (6)</b>		
Reliability and connectivity problem	2.26±0.534	1
Lack of technical support	2.12±0.535	3
Unfamiliar with online learning technical tools	1.91±0.699	5
Online learning environment is not inherently motivating	2.20±0.634	2
Lack of resources (multimedia/compatible cellular phones)	1.89±0.718	6
More time needed in online classes then conventional classes	2.01±0.772	4

SD=Standard deviation

**Table 4: Association of level of satisfaction with selected demographic variables**

Variables	Level of satisfaction		df	$\chi^2, P$
	Extremely satisfied	Satisfied		
Age				
<20	45	15	2	2.209, 0.33
21–24	96	53		
Above 25	7	3		
Gender				
Male	2	0	1	0.968,
Female	146	71		0.325
Course				
B.Sc. nursing	133	67	1	1.227,
M.Sc. nursing	15	4		0.268
Technology (access to internet)				
Broadband Internet	2	0	2	3.488,
Wi-Fi	5	6		0.175
Cellular (mobile) internet	141	65		
Technology that students own				
Laptop	16	3	1	2.626,
Smartphone	132	68		0.105
Area of living				
Urban	54	30	1	0.675,
Rural	94	41		0.411
Previous experience of online learning teaching				
Yes	27	11	1	0.253,
No	121	60		0.615

\*P value is calculated at 0.05 level of significance

lack of communication among students and teacher (2.11 ± 0.677).<sup>[8]</sup>

In this study, maximum student's participants (86%) were said teacher is supportive and responsive to my



questions, which is similar to the highly satisfied by the available instructor support.<sup>[9]</sup>

In the current study, little less than half student's participants (43%) were agree that online teaching method allow flexibility with my schedule, but in another study, it is found that (88%) of student participant felt that being able to have a flexible schedule to complete the course at their own pace.

In the current study, maximum student's participants 148 (67.57%) were extremely satisfied with the online learning, this findings resemble to another study done by Zaheer M *et al.* which reveals that students are highly satisfied by the e-learning education provided by the university. Instructor support yielded highest mean score (3.76) and tutorial support received lowest mean score (3.50); on a 05 point Likert scale these scores are appreciative.<sup>[9]</sup>

In the present study, maximum student's participants were having highest barriers that is low voice and language clarity, physical health barriers such as eye strain, reliability, and connectivity problem, but in another integrative review time constraint, poor technical skills, inadequate infrastructure, absence of institutional strategies, and support and negative attitudes of all involved.<sup>[10]</sup>

In the present study, result finding is similar to a study done by Cole *et al.* which concluded that, 106 students or 22.5% of the total responding said that they were "very satisfied." One hundred and seventy-one (36.2%) said that they were "satisfied." One hundred and twenty-six (26.7%) were "neutral." Fifty-one (10.8%) said that they were "dissatisfied." Eighteen (3.8%) respondents were "very dissatisfied" with their experience with fully online courses.<sup>[11]</sup>

### Limitations

The present study was limited to Western Rajasthan, it constitute only barriers and satisfaction of online learning. Furthermore, Study was limited to nursing students only. And It was single centric study.

### Conclusions

The present study findings show that majority of nursing students are extremely satisfied with online learning and maximum participants were using smart phone, for online learning. Our results also highlighted that in the present study significant number of students participants were mentioned that teacher is supportive and responsive to their questions during online classes. In the current study, it is found that majority of student's participants were having highest barriers that is low voice and language clarity, physical health barriers such as eye strain, reliability, and connectivity problem.

### Recommendations

On the basis of the findings of present study, it is recommended that this study should be conducted on larger samples. In addition, conducting a focus group with selected students might provide richer set of data. A focus group can allow the researcher to explore more nuanced question about various tools and outline class experiences.

In the present study, the student's participants are from single institution only; it is recommended that in further studies multiple institution can be taken for the study.

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### Conflicts of interest

There are no conflicts of interest.

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