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Research Article

To Assess the Satisfaction and its Influencing Factors with Online Teaching and Learning Activities during COVID-19 Pandemic among Nursing Students

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Abstract

Background of Study: COVID-19 pandemic has forced universities across the world to suspend physical classroom and shift to online classes. To cover up the loss on education system, online teaching and learning activities have been started.

Objectives: The study was conducted to assess satisfaction, explore the influencing factors and to find the association of satisfaction with online Teaching, Learning, and Assessment (TLA) during COVID-19 pandemic among nursing students with selected socio-demographic characteristics.

Materials and Methods: A quantitative research approach, total enumerative sampling technique was used to select the sample, that is, 200. Data gathered using self-structured student satisfaction questionnaire and a checklist to find the influencing factors for satisfaction with online TLA during COVID-19 pandemic.

Results: Out of 200 subjects, 121 (60.5) were indecisive. Study revealed that online technology related factors, learning resources and materials, teacher learner interaction, individual factors, and teacher factors were influencing factors, out of which majority of the subjects, that is, 175 (87.5%) faced connectivity problems, 143 (71.5%) were satisfied with the arrangement of learning material in a logical and understandable manner. There was a significant association of father's education, type of connectivity having P = 0.031 and P = 0.043 with satisfaction of online TLA.

Conclusion: The study findings revealed that more than 50% of students were indecisive and online technology related factors, learning resources and materials, individual factors, teacher factors were the major influencing factors. Father's education and type of connectivity were found to be significantly associated with satisfaction of online TLA during COVID-19 pandemic.

Keywords: COVID-19 pandemic, influencing factors, nursing students, online teaching and learning activities, satisfaction

Introduction

"Online Education is like a rising tide, its going to lift all boats" Anand Agarwal

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The COVID-19 pandemic has affected the educational systems world-wide, leading to near total closure of schools, colleges and universities. According to UNESCO monitoring on July 7 2020, 110 Countries implemented closures and as a result of this about 61% learners affected worldwide. Many governments are implementing measures to limit the gatherings in public places. Such measures have disrupted the normal functioning of schools, colleges, and universities. COVID-19 pandemic has forced universities across the world indeed, to suspend physical classroom, and shift to online classes.[1,5]

Online teaching and learning activities are defined as "learning experiences in synchronous or asynchronous way by using

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different gadgets (e.g., mobile phones and laptops) with stable internet access. Online teaching and learning activities appear to be a viable solution to fill in the void for classroom education for a certain period of time while minimizing the chances of any infection to students until their classes resume. Moreover, it has also provided an opportunity for educators to come up with customized learning solutions for every student. In these environments, students can be anywhere (independent) to learn and interact with instructors and other students.[2]

Teaching learning activities have many advantages like it has no physical boundaries, it has more learning engagement experience rather than the traditional learning. Unlike attending classes in a school or college, online learning is easy to access and stable internet connection required. Flexibility is a major advantage of online teaching learning. Online class timings, especially those on ed-tech platforms are extremely flexible and can be adjusted according to the students' convenience. This flexibility also lessens the pressure on the student. As long as, the students meet deadlines and actively participate in the class.[3]

One of the biggest perks of online learning is that students can get access to a personalized learning experience. Every student has different needs and learning patterns and in a classroom environment, it is not possible to cater to each one of theirs. Online learning, however, offers a customized learning experience for every student. There are many students who are usually withdrawn in a class environment but, open up in the online classes.[4]

Online teaching and learning activities offer a very efficient way to deliver lessons. Wide range of audiences can use as reference such as videos, sharing of resource links, and serving assessment tests; moreover, lectures can be recorded and shared. They are far more affordable as compared to physical learning. Online teaching and learning activities primarily eliminate two major cost points real estate and transportation. The course or study material is all available online and students can access it as many times as they want. There are fewer chances of students missing out on classes, as they can access easily anytime from the comfort of their home, thus reducing absenteeism.[5]

Some of the research studies have shown that on an average, students retain 20–60% more material when learning online compared to only 8–10% in a classroom. This is mostly due to the student being able to learn faster online, E-learning requires 40–60% less time to learn than in traditional classroom setting because students can learn at their own pace.[6]

Online teaching and learning activities have significant strengths and offer unprecedented accessibility to quality education, there are many factors that influence the satisfaction of online teaching and learning activities for students. Before any online teaching and learning activity can hope to succeed, it must have students who are able to access the online learning environment. There are *n* number of technologies available for online education but sometimes they face a lot of difficulties. These difficulties are such as downloading errors, installation issues, shortage of gadget, computer literacy, security, login problems, and problems with audio and video. Sometimes students find online teaching learning activities to be boring, unengaging, no personal attention. Students feel that lack of communication, technical problems, and difficulties in understanding instructional goals are the major barriers for online learning. For the effective learning students' needs two-way interaction which is difficult to implement sometimes as online content is more theoretical, not let students to practice effectively.[7-9]

Maurya *et al*. conducted a cross sectional study on acceptability, attitude, and satisfaction of online teaching and learning activities among nursing students during COVID-19 lockdown with 193 nursing students of a nursing college. The study results revealed that 62.7% of the total study subjects were satisfied with online teaching and learning activities. This study results also showed that nursing students show adequate acceptability, positive attitudes, and higher satisfaction levels related to online learning.[9]

Limitations of online teaching learning can vary depending on the tutors, students, use of computers and to access online sites. Minimum level of knowledge related to use to computers and technology is required for successfully function of online teaching learning activities. Little or no face to face interaction is also a major influencing factor. Sometimes online method of education can be a highly effective alternative medium of education for the-mature, self-disciplined student and may be inappropriate learning environment for more dependent learners. The major key benefits of online teaching and learning activities include increased flexibility of time, increased flexibility of location, convenience, early access to updated content, and comfortable learning environment. Considering the overall situation during this pandemic there were some pros (flexibility, affordability, individualization) of online teaching learning that seem to outweigh the cons (less social interaction, require self discipline) of online teaching learning activities.[10,11]

Many research suggest that online teaching and learning has been shown to increase retention of information and takes less time, but there are various factors that can influence the satisfaction of students with online teaching and learning activities such as accessibility issues, inadequate training of the instructor or the student, absence of the interactive, and social components.

As the online teaching-learning activities have become more prevalent in India due to COVID-19 pandemic, it becomes particularly important to know whether it's actually helping the students achieve what they expect out of it and what can be the influencing factors related to satisfaction with online teaching and learning activities.

Materials and Methods

Research approach

A quantitative research approach was used to study the satisfaction and its influencing factors with online teaching and

learning activities during COVID-19 pandemic among nursing students of selected College of District Ludhiana, Punjab.

Research design

An exploratory research design was used to study the satisfaction and its influencing factors with online teaching and learning activities during COVID-19 pandemic among nursing students of selected College of District Ludhiana, Punjab.

Research setting

This study was conducted on the nursing students of DMCH, College of Nursing, Ludhiana, Punjab.

Target population

The target population for the study comprised of graduate and postgraduate students.

Sample size

The sample size of the study was taken as $n = 200$.

Sampling technique

Total enumerative sampling technique was used to select the sample for the study.

Inclusion and exclusion criteria inclusion criteria

The study subjects who were:

- Willing to participate in the study
- Attending online classes.

Exclusion criteria

The study subjects who were a part of this research project were excluded from the study.

Development of research tool

The most important and vital part of conducting research study was the development of the research tool. An extensive review of literature helped in preparing the research tool.

Description of tool

- Part A - Socio demographic Characteristics (e.g., age, gender, professional course, siblings, fathers' education, mothers' education, habitat, type of family, and socio-economic status)
- Part B-
  i. Structured Student Satisfaction Likert Scale.
  ii. Checklist to assess the factors influencing the satisfaction with online teaching and learning (e.g., online technology, learning resource and material, teacher learner interaction, individual factors, and teacher factors)

Validation of tool

Experts from nursing field were consulted regarding content validity of research tool. The tool was found to be valid for the study.

Reliability of tool(s)

Reliability of the tool used to assess the satisfaction and its influencing factors with online teaching and learning activities during COVID-19 pandemic among nursing students was determined by Cronbach's alpha method and was found to be 0.846. Hence, the tool was found to be highly reliable.

Results

- In socio-demographic characteristics, out of 200 study sample, majority of the students fall under the age group of 19–22 years, that is, 167 (83.5%). Majority were females, that is, 185 (92.5%)
- Maximum number of students belonged to B.Sc. (N), that is, 170 (85.0%)
- In siblings it was seen that most of the subjects, that is, 189 (94.5%) have siblings
- For father's education, it was observed that majority were graduated or above 128 (64.0%). For mother's education, maximum number belonged to graduate or above, that is,102 (51.0%)
- Most of the subjects belong to nuclear family, that is,146 (73.0%) and mostly were residing in rural habitat, that is, 117 (58.5%).
- In socio-economic status, majority came under lower middle class, that is,127 (63.5%).

Table 1 depicts distribution of subjects as per their socio demographic characteristics. It shows that out of 200,

Table 1: Distribution of nursing students as per socio-demographic characteristics $n = 200$

Socio-demographic characteristics	F (%)
Age (in years)	
19–26	193 (96.5)
27–34	07 (3.5)
Gender	
Male	15 (7.5)
Female	185 (92.5)
Professional course	
B.Sc.(N)	170 (85)
M.Sc.(N) and NPCC (N)	30 (15)
Father's education	
Matric	6 (13.0)
Secondary	46 (23.0)
Graduate or above	128 (64.0)
Father's occupation	
Not working	19 (9.5)
Working	181 (90.5)
Mother's education	
Illiterate	05 (2.5)
Matric	44 (22.0)
Secondary	49 (24.5)
Graduate or above	102 (51.0)
Mother's occupation	
Not working	113 (56.5)
Working	87 (43.5)
Habitat	
Rural	117 (58.5)
Urban	83 (41.5)
Socio-economic status (according to modified Kuppuswamy scale 2019)	
Upper middle class (II)	04 (2.0)
Middle class (III)	42 (21.0)
Lower middle class(IV)	127 (63.5)
Lower class (V)	27 (13.5)

Mean age (in years) ±SD= 21.55±2.594

193 (95.5%) subjects were in the age group of 19–26, Majority of subjects, that is, 185 (92.5%) were females and 15 (7.5%) of them were males followed by B.Sc. (N) 170 (85.0%), 30 (15%) M.Sc. (N) & NPCC.

Out of 200 subjects, 128 (64.0%) fathers were graduated. While, 102 (51.0%) mothers were graduated and above. Majority 181 (90.5%) fathers of subjects were working and out of which 146 (80.7%) were going to work while few 35 (19.3%) were working from home. As per mother's occupation 87 (43.5%) mothers were working out of which 38 (43.7%) were going to work and 49 (56.3%) were working from home.

More than half of the subjects, that is, 117 (58.5%) belong to rural area and 83 (41.5%) were from urban area. According to modified Kuppuswamy scale (2019) 127 (63.5%) belonged to the lower middle class (IV).

Depicts the residential status of subjects in which 189 (94.5%) of the students were from Punjab, followed by 5 (2.5%) from Himachal Pradesh, 3 (1.5%) were from Jammu and Kashmir, and remaining 1 (0.5%) were from Haryana and Maharashtra, respectively.

Table 2 depicts the residential status of subjects in which 189 (94.5%) of the students were from Punjab, followed by 5 (2.5%) from Himachal Pradesh, 3 (1.5%) were from Jammu and Kashmir, and remaining 1 (0.5%) were from Haryana and Maharashtra, respectively.

Depicts that out of 200, 97 (48.5) subjects had attended previous online teaching and learning activities while 103 (51.5) subjects had no previous experience of online teaching and learning activities.

Table 3 depicts that out of 200, 97(48.5) subjects had attended previous online teaching and learning activities while 103 (51.5) subjects had no previous experience of online teaching and learning activities.

Depicts that more than half, that is, 140 (70%) of students have 1 sibling followed by 44 (22%) of them having 2 siblings and 5 (2.5) have 3 siblings.

Table 4 depicts that more than half, that is, 140 (70%) of students have 1 sibling followed by 44 (22%) of them having 2 siblings and 5 (2.5) have 3 siblings.

Depicts that more than half 156 (78%) of students were attending online classes on mobile phones followed by 39 (19.5%) were using laptops, 3 (1.5%) were using computers, and 2 (1%) were using tablet as a gadget to attend online teaching and learning activities.

Table 5 depicts that more than half 156 (78%) of students were attending online classes on mobile phones, followed by 39 (19.5%) were using laptops, 3 (1.5%) were using computers, and 2 (1%) were using tablet as a gadget to attend online teaching and learning activities.

Depicts that 141 (70.5%) of the students were using 4G connectivity, followed by 40 (20%) were using WI-FI, 14 (7%) were Using 3G, and 5 (2.5%) were using 2G connectivity to attend online teaching and learning activities.

Table 6 depicts that 141 (70.5%) of the students were using 4G connectivity followed by 40 (20%) were using WI-FI, 14 (7%) were using 3G, and 5 (2.5%) were using 2G connectivity to attend online teaching and learning activities.

Shows that out of 200, 15 (7.5%) students were quarantined while 185 (92.5%) were not quarantined due to any contact or travel history.

Table 7 shows that out of 200, 15 (7.5%) students were quarantined while 185 (92.5%) were not quarantined due to any contact or travel history.

Table 2: Distribution as per the Nursing students residing in different states *n*=200

States	F
Punjab	189 (94.5)
Chandigarh	1 (0.5)
Himachal	5 (2.5)
Jammu and Kashmir	3 (1.5)
Haryana	0

Table 3: Distribution as per the previously attended online teaching and learning activities by the nursing students *n*=200

Students attended previous online classes	F	%
Yes	97	48.5
No	103	51.5

Table 4: Distribution as per no. of siblings of nursing students attending online teaching and learning activities *n*=200

Number of siblings of Nursing students attending online teaching and learning activities	F	%
1	140	70
2	44	22
3	5	2.5

Table 5: Distribution as per gadgets used by the nursing students to attend online teaching and learning activities *n*=200

Gadgets	F	%
Mobile	156	78
Computer	3	1.5
Laptop	39	19.5
Tablet	2	1

Table 6: Distribution as per the type of connectivity used by the nursing students to attend online teaching and learning activities *n*=200

Type of connectivity	F	%
Wi-Fi	40	20
4G	141	70.5
3G	14	7
2G	5	2.5

Electricity problems were not faced by 107 (53.5%), that counts more than half of the total subjects. Majority of the subjects were using 4G connectivity during online teaching and learning activities, that is, 141 (70.5%).

Table 8 depicts that out of 200 less than half, that is, 93 (46.5%) were facing electricity problem while 107 (53.5%) were not facing any electricity problem.

- In satisfaction with online Teaching, Learning, and Assessment (TLA), most of the students were uncertain regarding their ability to operate gadgets, the internet connectivity, the features available, and easy accessibility to online teaching with frequencies of 72 (36.0%), 63 (31.5%), 77 (38.7%), and 80 (40.0%), respectively. 68 (34.0%) were satisfied with the interaction between teacher and learner.
- In case of student satisfaction with individual factors, majority of the subjects were uncertain that online TLA are more indulging and interesting, enables the individuals to exchange ideas and comments, saves time of the learner, have encouraged the individual to share their viewpoints, ideas and concepts with others, fulfills the personal learning needs of the learner with frequencies of 65 (32.5%), 82 (41.0%), 51 (25.5%), 75 (37.5%), and 61 (30.5%), respectively.
- In student satisfaction with teaching factors, it was seen that majority of the students were satisfied with the effectiveness of online TLA, 92 (46.0%) were satisfied that online TLA depends upon teacher's knowledge, whereas 74 (37.0%) were not satisfied that effectiveness of online TLA depends on the learning resources and material provided.
- In case of the influencing factors, majority of the subjects i.e., 175 (87.5%) faced connectivity problems. It was seen that majority of the subjects, that is, 143 (71.5%) were satisfied with the arrangement of learning material in a logical and understandable manner.

Table 9 indicates the distribution of nursing students as per satisfaction with online teaching and learning activities.

Student satisfaction with online technology, majority, that is, 63 (31.5%) of subjects were uncertain regarding their internet frequent connectivity, followed by 72 (36.0%) with their ability to operate gadgets (Mobile/Laptop/Computer), 77 (38.7%) with the features available during online teaching and learning activities, and 80 (40%) with the easy accessibility to online teaching.

In context to student satisfaction with learning resource and materials, majority, that is, 75 (35.5%) were uncertain about the relevance of learning material provided online, followed by 74 (37.0%) with arrangement of learning material provided, 65 (32.5%) with information provided through A.V aids, 55 (27.5%) with flexibility of submission of assignments while 68 (34%) were not satisfied with clarity of voice and visibility.

Regarding student satisfaction with teacher learner interaction, majority, that is, 78 (23%) were uncertain about the opportunities to participate through discussions, followed by 72 (36.0%) with the learning process, 68 (34.0%) with the individualized attention by the teacher, and 58 (29.0%) with the improvement in interaction through regular feedback while 68 (34.0%) were satisfied with teacher interaction with learner.

Regarding student satisfaction with individualized factors, majority, that is, 82 (41.0%) were uncertain that it enables individual to exchange ideas and comments, followed by 75 (37.5%) that online teaching and learning activities have encouraged individual to share the view points and ideas with others, 65 (32.5%) that it is more indulging and interesting, 61 (30.5%) that it fulfills the personal learning needs of the learner, 51 (25.5%) that it saves the time of the learner.

Regarding student satisfaction with teaching factors, majority, that is, 92 (46.0%) subjects were satisfied with the teacher's knowledge, 83 (41.5%) were uncertain that effectiveness of online teaching learning activities depends on the use of Av aids, followed by 78 (39.0%) not sure that it is interactive and indulging way of teaching, 76 (38.0%) were uncertain that effectiveness of online teaching learning activities depends upon the explanation provided by the teacher, 72 (36.0%) were uncertain with the method of teaching adopted by the teachers while 74 (37.0%) were not satisfied that effectiveness of online teaching learning activities depends on the learning resources and materials provided.

Regarding students satisfaction with learning outcomes, majority, that is, 85 (42.5%) were not sure that online teaching learning activities improves the communication, followed by 82 (41.0%) that it fulfill learning objectives, 78 (39.0%) that it enhances the understanding of concepts, 70 (35.0%) that it clarify doubts related to teaching objectives, 68 (34.0%) were uncertain that it is stimulating and motivating.

Depicts the overall scoring of distribution of nursing students regarding satisfaction with online teaching and learning activities. Maximum number of students 121 (60.5%) were indecisive, 41 (20.5%) were unsatisfied, 35 (17.5%) were satisfied, and 03 (1.5%) were highly unsatisfied.

Table 10 depicts the overall scoring of distribution of nursing students regarding satisfaction with online teaching and

Table 7: Distribution as per any quarantine history of the nursing students *n*=200

Quarantine history	F	%
No	185	92.5
Yes	15	7.5

Table 8: Distribution as per any electricity problems faced by the nursing students *n*=200

Electricity problems	F	%
No	107	53.5
Yes	93	46.5

Table 9: Frequency distribution of nursing students as per satisfaction with online teaching and learning activities *n*=200

Items	Responses				
	Strongly Agree (5) f (%)	Agree (4) f (%)	Uncertain (3) f (%)	Disagree (2) f (%)	Strongly Disagree (1) f (%)
1. Student satisfaction with online technology					
I am satisfied with:					
My ability to operate gadgets (Mobile/Laptop/Computer)	23 (11.5)	50 (25.0)	72 (36.0)	27 (13.5)	28 (14.0)
The internet connectivity	17 (8.5)	34 (17.0)	63 (31.5)	57 (28.5)	29 (14.5)
The features available during online and learning activities.	12 (6.0)	49 (24.6)	77 (38.7)	33 (16.6)	28 (14.1)
The easy accessibility to online teaching.	21 (10.5)	43 (21.5)	80 (40.0)	39 (19.5)	17 (8.5)
2. Student satisfaction with learning resources and material					
I am satisfied:					
With the arrangement of learning material provided online	10 (5.0)	56 (28.0)	74 (37.0)	36 (18.0)	24 (12.0)
That the learning material provided is relevant to my study	19 (9.5)	66 (33.0)	75 (35.5)	29 (14.5)	11 (5.5)
With the information provided through A.V. Aids	15 (7.5)	57 (28.5)	65 (32.5)	43 (21.5)	20 (10.0)
With the clarity of voice and visibility of learning material	09 (4.5)	25 (12.5)	55 (27.5)	68 (34.0)	43 (21.5)
With the flexibility of submission of assignments at any time of the day	48 (24.0)	55 (27.5)	31 (15.5)	35 (17.5)	31 (15.5)
3. Student satisfaction with teacher learner interaction					
I am satisfied that online teaching and learning activities facilitates:					
The interaction between the teacher and learner	35 (17.5)	68 (34.0)	60 (30.0)	22 (11.0)	15 (7.5)
The teacher to pay individualized attention.	09 (4.5)	43 (21.5)	68 (34.0)	47 (23.5)	33 (16.5)
More opportunities to participate through discussion	21 (10.5)	55 (27.5)	78 (39.0)	33 (16.5)	13 (6.5)
The improvement in interaction through regular feedback	30 (15.0)	57 (28.5)	58 (29.0)	36(18.0)	19 (9.5)
The learning process and makes the individual feel less distant	16 (8.0)	67 (33.5)	72 (36.0)	35 (17.5)	10 (5.0)
4. Student satisfaction with learner factors					
I am satisfied that online teaching and learning activities:					
Are more indulging and interesting	09 (4.5)	35 (17.5)	65 (32.5)	58 (29.0)	33 (16.5)
Enables the individual to exchange ideas and comments	12 (6.0)	43 (21.5)	82 (41.0)	46 (23.0)	17 (8.5)
Saves the time of the learner	24 (12.0)	36 (18.0)	51 (25.5)	41 (20.5)	48 (24.0)
Have encouraged individual to share their viewpoints, ideas and concepts with other students	15 (7.5)	41 (20.5)	75 (37.5)	49 (24.5)	20 (10.0)
Fulfills the personal learning needs of the learner	09 (4.5)	34 (17.0)	61 (30.5)	59 (29.5)	37 (18.5)
5. Student satisfaction with teaching factors					
I am satisfied that effectiveness of online teaching and learning activities depends on:					
The teacher's knowledge	92 (46.0)	63 (31.5)	35 (17.5)	07 (3.5)	03 (1.5)
The method of teaching adopted by the teacher (active/passive)	24 (12.0)	56 (28.0)	72 (36.0)	44 (22.0)	04 (2.0)
The interactive and indulging way of teaching	18 (9.0)	44 (22.0)	78 (39.0)	41 (20.5)	19 (9.5)
The learning resources and material provided	15 (7.5)	46 (23.0)	43 (21.5)	**74 (37.0)**	22 (11.0)
The use of A.V Aids	15 (7.5)	41 (20.5)	83 (41.5)	41 (20.5)	20 (10.0)
The explanations provided by the teachers	16 (8.0)	55 (27.5)	76 (38.0)	32 (16.0)	21 (10.5)
6. Student satisfaction with individual factors					
Are you satisfied:					
That online teaching and learning activities are more interesting.	9 (4.5)	35 (17.5)	65 (32.5)	58 (29.0)	33 (16.5)
That online discussion enables individual to exchange ideas and comments.	12 (6.0)	43 (21.5)	82 (41.0)	46 (23.0)	17 (8.5)
That online teaching and learning activities saves the time	24 (12.0)	36 (18.0)	51 (25.5)	41 (20.5)	48 (24.0)
That online teaching and learning activities have encouraged individual to share their viewpoint ideas and concepts with other students	15 (7.5)	41 (20.5)	75 (37.5)	49 (24.5)	20 (10.0)
That personal learning needs as an individual are met in online environment	9 (4.5)	34 (17.0)	61 (30.5)	59 (29.5)	37 (18.5)
7.Student satisfaction with learning outcomes					
I am satisfied that online teaching and learning activities:					
Fulfill learning objectives	07 (3.5)	47 (23.5)	82 (41.0)	40 (20.0)	24 (12.0)
Enhances the understanding of concepts	05 (2.5)	40 (20.0)	78 (39.0)	46 (23.0)	31 (15.50
Clarify doubts related to teaching objectives	05 (2.5)	45 (22.5)	70 (35.0)	54 (27.0)	26 (13.0)
Improves communication	10 (5.0)	33 (16.5)	85 (42.5)	47 (23.5)	25 (2.5)
Are stimulating/motivating	14 (7.0)	31 (15.5)	68 (34.0)	56 (28.0)	31 (15.5)

learning activities. Maximum number of students 121 (60.5%) was indecisive, 41 (20.5%) was unsatisfied, 35 (17.5%) was satisfied, and 03 (1.5%) was highly unsatisfied.

- Influencing factors of satisfaction with online teaching and learning activities. In context to online technology, the most influencing factor is connectivity problem 175 (87.5%).
- In context to learning resources and material, according to subjects the most influencing factor is arrangement of learning material in a logical and understandable manner 143 (71.5).
- In context to teacher learner interaction, according to subjects, discussions play important role 179 (89.5).
- In context to individual factors, according to students, eye strain 186 (93.0) is the most influencing factor followed

Table 10: Distribution of nursing students as per level of satisfaction with online teaching and learning activities *n*=200

S. No	Level of satisfaction	Score	F (%)	Mean±SD
1	Highly unsatisfied	<45	03 (1.5)	41.0±3.4
2	Unsatisfied	45–75	41 (20.5)	63.1±8.3
3	Indecisive	75–105	121 (60.5)	91.4±8.7
4	Satisfied	105–135	35 (17.5)	117±8.8

Mean±SD=84.2±8.95, Minimum Score=30, Maximum score=150

by headache 177 (88.5), distraction from surroundings 172 (86.0), back pain 178 (89%), laziness/tiredness 183 (91.5%), and boring online teaching and learning activities 173 (86.5%).

- In context to teacher factors, according to students, major influencing factor is summarization of topic 130 (65.0).

Table 11 indicates the various influencing factors of satisfaction with online teaching and learning activities. In context to online technology, the most influencing factor is connectivity problem 175 (87.5%).

In context to learning resources and material, according to subjects the most influencing factor is arrangement of learning material in a logical and understandable manner 143 (71.5).

In context to teacher learner interaction, according to subjects, discussions play important role 179 (89.5).

In context to individual factors, according to students, eye strain 186 (93.0) is the most influencing factor followed by headache 177 (88.5), distraction from surroundings 172 (86.0), back pain 178 (89%), laziness/tiredness 183 (91.5%), and boring online teaching and learning activities 173 (86.5%).

In context to teacher factors, according to students, major influencing factor is summarization of topic 130 (65.0).

Father's education and type of connectivity were found to be significantly associated with association of satisfaction with online TLA having $P = 0.031$ and $P = 0.043$, respectively.

Table 12 depicts the association of satisfaction with online teaching and learning activities with selected socio-demographic characteristics. Hence, it can be concluded that father's education and type of connectivity was statistically significant for satisfaction with online teaching and learning activities and with other socio-demographic characteristics it was found to be statically non-significant.

Table 11: Frequency distribution table showing various influencing factors of satisfaction with online teaching and learning activities *n*=200

Factors	F (%)
Online technology	
Technical glitches	166 (83.0)
Connectivity problem	175 (87.5)
Inappropriate gadgets/devices	77 (38.5)
Fewer skills to operate gadgets/devices	67 (33.5)
Learning resource and material	
Arrangement of learning material in a logical and understandable manner	143 (71.5)
Effective use of AV Aids	123 (61.5)
Relevancy of learning material provided	135 (67.5)
Teacher learner interaction	
Discussions play important role	179 (89.5)
Active interaction	137 (68.5)
Creative skills	124 (62.0)
Discipline	116 (58.0)
Individual factors	
Distraction from surroundings	172 (86.0)
Headache	177 (88.5)
Eye strain	186 (93.0)
Back pain	178 (89.0)
Laziness/tiredness	183 (91.5)
Boring online teaching and learning activities	173 (86.5)
More engagement in online teaching and learning activities	125 (62.5)
Teacher factors	
Creative teaching skills	119 (59.5)
Proper attention to each student	74 (37.0)
Timely response and feedback	113 (56.5)
Summarization of topic	130 (65.0)
Proper clarification regarding topic	179 (65.0)

Discussion

To assess satisfaction with online teaching and learning activities during COVID-19 pandemic among nursing students.

A research study was conducted on 200 subjects who were attending online teaching and learning activities. Their level of satisfaction with online teaching and learning activities was assessed and the results revealed that maximum number of students 121 (60.5%) was indecisive about the satisfaction with online teaching and learning activities during COVID-19 pandemic.

Similar study was conducted by Lall and Singh (2020), on 200 subjects. It revealed that majority of students (148) were highly satisfied with online education.[12]

The study results were contradicted by Abbasi *et al*. (2020) which concluded that out of 382 students 294 students did not prefer online teaching over face-to-face teaching during the lockdown situation.[14]

Similar study by Sathishkumar *et al*. (2020) was conducted on 175 undergraduate students. The results contradicted the above findings by showing that 78.1% of the study subjects prefer classroom learning over online teaching and learning activities.[13]

To explore the influencing factors for satisfaction with online teaching and learning activities during COVID-19 pandemic among nursing students.

The present study revealed that online technology related factors (e.g., connectivity problems), learning resources and materials related factors (e.g., Arrangement of learning material in a logical and understandable manner), teacher learner interaction factors (e.g., discussions), individual factors

Table 12: Association of satisfaction with online teaching and learning activities and selected socio-demographic characteristics *n*=200

Characteristics	Mean±SD	F/t	*P*-value
Age (in years)		1.271	0.285^{NS}
19–22	89.78±20.06		
23–26	86.42±18.06		
27–30	82.40±14.31		
31–34	111.50±10.60		
Gender		0.118	0.124^{NS}
Male	88.80±26.48		
Female	89.42±19.16		
Professional course		1.949	0.145^{NS}
M.Sc. (N)	101.20±14.23		
B.Sc. (N)	89.49±19.56		
NPCC	79.37±23.63		
Siblings			
Yes	89.21±19.79	0.499	0.756^{NS}
Father's education		3.520	0.031*
Matric	81.15±20.66		
Secondary	87.39±20.30		
Graduate or above	91.76±18.92		
Father's occupation			0.441^{NS}
Working	91.15±17.94	0.412	
Not working	89.19±19.9	0.449	
Mother's Education	90.75±11.32	0.157	0.925^{NS}
Illiterate	90.42±22.11		
Matric Secondary	87.79±19.59		
Graduate or above	89.62±19.10		
Mother's Occupation			0.158^{NS}
Not working	89.73±21.00	0.098	
Working	89.45±17.46	0.100	
Socio-economic status (according to modified Kuppuswamy scale 2019)			
Upper middle class (II)	98.25±19.70	0.956	0.414^{NS}
Middle class (III)	87.28±18.90		
Lower middle class (IV)	88.81±20.18		
Lower class (V)	94.00±18.71		
Type of connectivity used to attend online TLA		2.760	0.043*
2G	95.80±13.84		
3G	78.14±24.49		
4G	88.77±19.17		
Wi-Fi	94.65±19.07		
Device used during online TLA		0.601	0.615NS
Mobile	88.87±20.17		
Compute	79.33±12.50		
Laptop	92.33±18.48		
Tablet	86.00±16.97		
Facing electricity problems			0.294^{NS}
Yes	90.07±19.17	0.815	
No	88.77±20.25	1.290	
Quarantined due to any contact or travel history			0.54^{NS}
Yes	88.73±17.42	0.132	
No	89.43±19.93	0.148	

NS: Non-significant $P>0.05$. df (*t*-test)=176.598, *=significant $P<0.05$ df (ANNOVA)=196

(e.g., Eye strain), and teacher factors (e.g., proper clarification regarding topic) are the major influencing factors for the satisfaction with online teaching and learning activities.

The above findings were supported by Subedi *et al*. (2020) on 1116 nursing students of Nepal revealing that subjects suffered from disturbances during online classes because of internet and electricity problem.[15]

Similar study conducted by Bao (2020) on 44,700 university students concluded that there were five major influencing factors with satisfaction to online teaching and learning activities, namely, relevant material, effective teaching method, sufficient support, high quality participation, and contingency plan.[16]

Another supported the study by Johnston *et al*. (2005) by concluding that contact and interaction with the instructor, flexibility, self-efficacy for technology, and extroverted personality type seem to be the major influencing factors related to satisfaction with virtual classroom.[19,20]

Another study by Nagar (2020) supported the above findings by revealing that effectiveness of e-learning in India depend on the availability of suitable device, familiarity with the use of technology and required infrastructural facilities whereas network/internet issues are also a major challenge in online sessions in India.[17,18]

To find the association of satisfaction with online teaching and learning activities during COVID-19 pandemic among nursing students with selected socio-demographic characteristics.

The present study revealed that there was significant association of satisfaction with online teaching and learning activities with father's education and type of connectivity (P = 0.031 and P = 0.043), respectively. Similar study conducted by Islam *et al*. (2011) on effect of demographic factors on E-learning concluded that the level of education, program of study, age, and gender was found to be significant in the effectiveness of e-learning. However, there is no significant effect of race and marital status on the effectiveness e-learning system.

Another study by Bhutia and Shradha (2020) supported the above findings by revealing that type of connectivity was found to be statistically significant with the satisfaction of online education.[21,22] Similar study conducted by Kuo *et al*., (2013) on 291 students revealed that learner-instructor interaction, learner-content interaction, and internet self-efficacy were significant in online learning settings, while learner-learner interaction and self-regulated learning did not predict student satisfaction and gender and class level significantly influenced learner-learner interaction.[23,24] Another conducted by Islam A, Abdul Rahim A, Hasina M (2011) on 80 students contradicted the above findings by concluding that there was no significant association of sociodemographic characteristics with satisfaction to online TLA.[25]

Conclusion

The study findings revealed that more than 50% of students were indecisive. The major influencing factors found, that is, online technology related factors (e.g., connectivity problems), learning resources and materials (e.g., Arrangement of learning material in a logical and understandable manner, teacher learner interaction (e.g., discussions), individual factors (e.g., eye strain), and teacher factors (e.g., proper clarification regarding topic). There was significant association of father's education and type of connectivity with satisfaction of online teaching and learning activities during COVID-19 pandemic.

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Conflicts of interest

There are no conflicts of interest.

References

1. Cennimo JD, Coronavirus Disease 2019 (COVID-19). Noval Coronavirus Research Centre; 2020. Available from: https//www.article/2500114 [Last accessed on 2020 Jan 03].
2. Dhawan S. Online learning: A panacea in the time of COVID-19 crisis. J Educ Technol Syst 2020;49:5-22.
3. Kasrekar D, Tapaswi WG. Impact of COVID-19 on Education System in India; 2020. Available from: https://www.latestlaws.com/articles/impact-of-covid-19-on-education-system-in-India [Last accessed on 2020 Feb 08].
4. Poth DR. Personalized Learning Experience: Why? And How? The Journal Features Eddmodo: Free, Safe Social Networking; 2018. Available from: https://www.gettingsmart.com/2018/03/personalized-learning-experiences-why-and-how [Last accessed on 2020 Feb 08].
5. Pinto R. E-learning: The Advantages and Challenges; 2020. Available from: https://www.gettingsmart.com/2018/03/personalized-learning-experiences-why-and-how [Last accessed on 2020 Jan 10].
6. Li C, Lalani F. The COVID-19 Pandemic has Changed Education Forever. This is How. World Economic Forum COVID Action Platform; 2020. Available from: https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning [Last accessed on 2020 Feb 21].
7. UNESCO. Adverse Consequences of School Closures; 2020. Available from: https://www.en.unesco.org/covid19/educationresponse/consequences [Last accessed on 2020 Aug 11].
8. Dhawan S. Online Learning: A Panacea in the Time of COVID-19 Crisis. SAGE Journals; 2020. Available from: https://www.journals.sagepub.com/doi/full/10.1177/0047239520934018 [Last accessed on 2020 Aug 11].
9. Maurya R, Nayok SB, Sathyanarayana MT, Akshatha HS. Acceptability, attitude, and satisfaction of online learning among nursing students during COVID-19 lockdown: A cross sectional study. Int J Indian Psychol 2020;8:69-76.
10. Ion. Strengths and Weaknesses of Online Learning. Illinois Online Network; 2020. Available from: https://www.uis.edu/ion/resources/tutorials/online-education-overview/strengths-and-weaknesses [Last accessed on 2020 Apr 09].
11. Mclntyre S, Mirriahi MS, Bates T. Why is Online Teaching Important? 2020. Available from: https://www.sites.google.com/a/hawaii.edu/new-de-faculty-orientation/Step-1 [Last accessed on 2020 Aug 27].
12. Lall S, Singh N. Covid-19: Unmasking the new face of education. Int J Res Pharm Sci 2020;11:48-53.
13. Sathishkumar V, Radha R, Mahalakshmi K, Saravanakumar AR. E-learning during lockdown of Covid-19 pandemic: A global perspective. Int J Control Autom 2020;13:1088-99.
14. Abbasi S, Ayoob T, Malik A, Memon SI. Perception of students regarding E-learning during Covid-19 at a private medical college. Pak J Med Sci 2020;36:S57-61.
15. Subedi S, Nayaju S, Subedi S, Shah SK, Shah JM. Impact of E-learning during COVID-19 pandemic among nursing students and teachers of Nepal. Int J Sci Healthc Res 2020;5:68-76.
16. Bao W. COVID-19 and online teaching in higher education: A case study of Peking university. Wiley Online Libr 2020;2:113-5.
17. Nagar S. Student's Perception Towards E-Learning and Effectiveness of Online Sessions Amid COVID-19 in India. Available from: https://www.fergusson.edu/upload/document/86850 [Last accessed on 2020 Aug 27].
18. Nagar S, Aguilera-Hermida AP. College students' use and acceptance of emergency online learning due to COVID-19. Int J Educ Res Open 2020;1:100011.
19. Nguyen VA. A Case Study on Examining the Students' Satisfaction with Online Learning Activities in Blended Learning Course: A Case Study; 2016. p. 3155-69. Available from: https://www.researchgate.net/publication/310953706.Examining_students'_satisfaction_with_online_learning_activities_in_blended_learning_course_a_case_study [Last accessed on 2020 Aug 29].
20. Johnston J, Killon J, Oomen J. Students' satisfaction in the virtual classroom. Int J Allied Health Sci Pract 2005;3:1-7.
21. Bolliger DU. Key Factors for Determining Student Satisfaction in Online Courses. Int E Learn 2004;3:61-7.
22. Bhutia DC, Shradha RC. Online Classes: Are Students Coping with the Virtual-Learning Reality. Available from: https://www.thesikkimchronicle.com/online-classes-are-students-coping-with-the-virtual-learning-reality [Last accessed on 2020 Sep 04].
23. Muthuprasad T, Aiswarya S, Adity KS. Student's Perception and Preference for Online Education in India During COVID-19 Pandemic. Social Sciences and Humanities Open; 2020. Available from: https://www.papers.ssrn.com/sol3/papers.cfm?abstract_id=35960 [Last accessed on 2020 Sep 04].
24. Kuo YC, Walker AE, Belland BR, Schroder KE. Predictive study of student satisfaction in online education programs. Int Rev Res Open Distrib Learn 2013;14:16-39.
25. Islam A, Rahim AA, Hasina M, Tan CL. Effect of demographic factors on e-learning effectiveness in a higher learning institution in Malaysia. Int Educ Stud 2011;4. Availablefrom:https://www.researchgate.net/publication/50211354_Effect_of_demographic_factors_on_elearning effectiveness in_a_higher_learning_institution_in_ Malaysia [Last accessed on 2020 Sep 05].

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