

# Connecting Nursing Students with E-Learning: Challenges for Nursing Educators- A Way Forward?

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## ABSTRACT

**Background:** COVID 19 outbreak miens critical concern to global education system across the world. The closure of universities has left billions of students behind. Nursing educators and students relied on technology to continue learning online during the pandemic. However, online education is hampered by the lack of networks, power, infrastructure such as inaccessible and lack of digital skills. Aim: The aim of the study was to evaluate the impact of the COVID 19 outbreak on nursing education.

**Objectives:** 1. To assess the perception regarding impact of corona pandemic on nursing education, limitations of E-learning and required modifications among nursing educators. 2. To find out the association between perception of nursing educators with their socio-demographic variables. Material and methods: Data were collected through a Google form consisting of self-structured Likert scale on perceptions of nursing educators. The Subdomains of the perception were impact of COVID-19 outbreak on Nursing education, Limitations of e-learning and essential modifications required. The data collected were analyzed and interpreted. Result: of the study revealed that the corona outbreak has adversely impacted nursing education and urgent need to implement effective e-learning teaching learning strategies of nursing educators to understand their perception and issues they are facing during e-classes to foster teaching, student's satisfaction, and achievement of educational outcomes. Conclusion: The process of imparting education has seen a sea change during the threat of the COVID pandemic. Besides, technology is affecting every side of society and changing it regularly. Challenges in the E-learning context shows the requirement for up-gradation in institutional technology infrastructure and teacher's capacity building training to improve technological expertise.

**Keywords:** Corona Virus Pandemic

## INTRODUCTION

"I understand that it's hard for everyone, but one cannot give in to emotions... we'll have to draw lessons from the current crisis and now we'll have to work on overcoming it."-Boris Yeltsin

The lockdown imposed to contain Corona virus pandemic spread had some inescapable unfavourable outcome on every part of life including education delivery system. This pandemic has confronted the conventional methods of education. The nursing institution rapidly turn down scheduled clinical and classroom educational activities and were forced to reschedule curriculum activities. Through this period, an important depreciation in access to the classroom teaching for educators and students has been witnessed.

The sudden surge of shifting to digital platform from traditional classroom methods witnessing a boom in e-learning in medical education including nursing. Hence closure of educational institutions due to lockdown accelerate the requirement of the e-learning environments so that learning would not be disrupted. Information and Communication Technology (ICT) use in education is considerably increasing globally and developing countries are extensively applying e-learning in modern teaching and learning [1]. Changes in the health care system and their requirements are vastly creating a challenge to health care educators to revise their teaching strategies to cope in this highly digital environment and to form viable association among nursing students requirement and use of technologies [2,3].

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E-Learning is emerging as the new paradigm of modern education has the power to advance self-directed learning by stimulating students reach to information increasing easy approach and communication between student and educators put an end to geographical limitations and building a sense of self-confidence to use technology in learning [4-6]. Unanticipated boom in e-learning due to COVID-19 pandemic have not given ample time to get expertise in handling technology in teaching bringsome challenges such as frustration in students, great costs for establishing e- courses, technical gadgets cost , and the need for continue technical experts supports [7-10].

Moreover, absence of trditional classroom teaching method, students are at risk to exposer with feelings of isolation, hesitation and demising interest in the learning. These possible challenges likely to rise dissatisfaction among learners and educators while taking e-classes thus directing them to seek out alternative strategy to these challenges [11-13].

Nurse educators are facing challenges due to technical advancement and introduction of innovative changes in teaching learning strategies. (Reference) Particularly the introduction of mass-scale learning management systems has changed the face of education in nursing. Such technological revolution pushing nursing educators to acquire e-learningstrategies that are not only innovative sound but also creative.The unexpected closure of nursing institutioncampuses across India and elsewhere has call for the virtual delivery of nursing education. (Reference) Although there have been unavoidable Teaching problems, observers are surprising whether the future of nursing education mostly just turn to present.

### Need to understand Challenges

As a result of COVID-19 pandemic transaction from face to face classroom teaching-learning have been shifted to e-learning might difficult to compensate for the absence of traditional educational teaching strategy.

Many nursing educators do not find e-learning as an option of classroom teaching because of many limiting factors and barriers. German studies reported less than 5 percent of teaching faculty in German Speaking University use technology supported learning for their courses [14].

According to studies nursing educators are battling to mingle technological skills into nursing curricula for the reason that inappropriate preparation, slow adoption of e-learning as strategy

in teaching and learning and absence of technical support in implementing e- learning in nursing education.

### Objectives of the study are

- 1) To assess the challenges regarding impact of corona pandemic on nursing education among nursing educators.
- 2) To find out the association between challenges of nursing educators with their socio-demographic variables.

## METHODOLOGY

### Study design and period

A cross sectional research design was implemented to assess the challenges faced by nursing educators while imparting education through E-classes during COVID-19 pandemic. For this a comprehensive web-based survey is prepared and circulated to a total 1370 nursing educators across India via email and messaging platform like messenger and What's app, out of which 28.18% (i.e. 386) responded. Survey data was circulated and received by using Google Forms software online.

### The survey data consists of

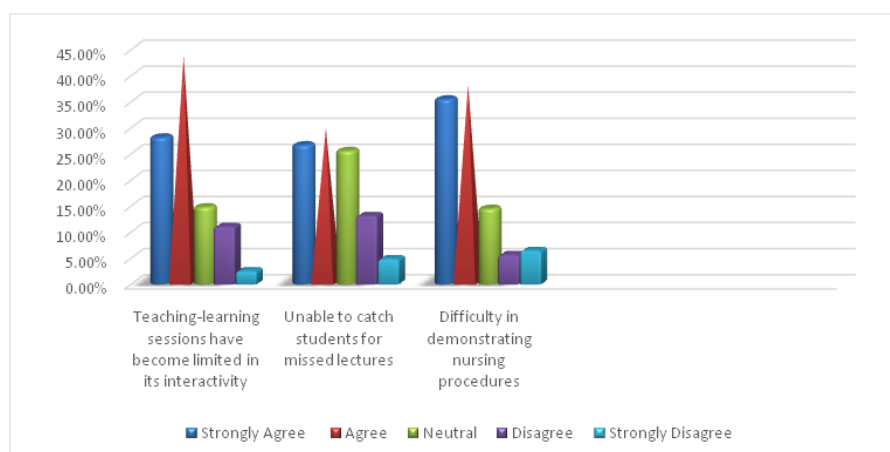
Part A - Socio-demographic profile of the participants which includes gender, age, qualification, designation, type of working institution, teaching experience, previous experience of taking classes by E-teaching and whether they have taken E-classes during COVID- 19 lockdown or not.

Part B- Challenges faced by nursing educators during E- classes which was split into 2 broad categories.

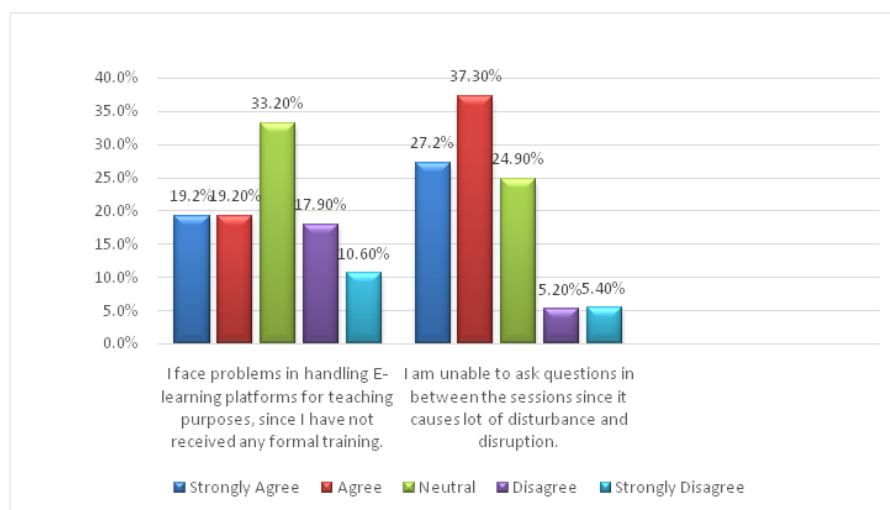
1) Challenges encountered during E-classes: Assessed by using 3 questions with likert scale answer that varies from strongly agree (1) to strongly disagree (5). Total score ranges from 3 to 15. Score 9 refers to overall neutral response. Lesser the score, more are the challenges encountered by nursing educators.

2) Frequency of encountered challenges: Assessed by using 2 questions with likert scale that varies from always (1) to never (5). Total score ranges from 2 to 10. Score 6 refers to overall neutral response.

The privacy of responders was maintained anonyms including their identity, to insure an unbiased opinion. For the purpose of statistical analysis Descriptive and Inferential statistics were used (Figures 1 & 2).



**Figure 1:** Bar graph representing Challenges encountered by nursing educators while catering nursing education through E-learning during this pandemic. n= 386.



**Figure 2:** Bar graph representing Frequency of Challenges encountered by nursing educators while catering nursing education through E-learning during this pandemic. n= 386.

## PROCEEDINGS

The study questionnaire was developed with three different stage discussions with senior nursing faculties from prestigious institutes of nursing education from cities like Chandigarh, Bangalore, Patna, and Ahmedabad with the help of a what's app group. The final tool was tested on 30 nursing faculties for trial and necessary changes were made after getting responses and feedback. The web-based questionnaire was open for two weeks. A mail id was attached with a link to assess any communication with responded if required. Data authenticity is a crucial component in the process of any research. To provide clarity and credibility, investigators (Two investigators) were engaged in interacted with participants, clarifying their doubt, web assistance, sending reminder messages to fill Performa, and allocating enough time to the web-based questionnaire.

Besides, data coding, the study data analysis, and result interpretations were carefully explained and reviewed by external nursing faculty who had vast experience in nursing education and researches.

## RESULTS

### Findings related to Socio demographic Data of nurse educators

Table 1 As per socio-demographic details, findings revealed that 73.1% nursing educators were females. 51% of the nursing educators belonged to (31-40) years of age group and 59.1% were post-graduates. Most of the nursing educators (46.6%) were working as clinical instructors/ Nursing tutors and 60.1% were serving under private institutions. A total of 39.6% nursing educators were having teaching experience of less than 4 years and 50.3% were having previous E- teaching experience. Most of the nursing educators (73.3%) have taken E-classes during lockdown because of COVID-19 pandemic.

### Findings related to Challenges of nurse educators

Table 2 findings revealed that nursing educators have encountered considerable number of challenges while catering nursing education through E-learning platform during lockdown of corona

**Table1:** Socio-demographic characteristics of Nursing Educators.n= 386.

Socio-demographic characteristics of Nursing Educators		Frequency	Percentage
Gender	Female	282	73.1
	Male	104	26.9
Age (In years)	21-30	152	39.4
	31-40	197	51
	41-50	26	6.7
	50 years and above	11	2.8
Qualification ( In Nursing)	Graduate	95	24.6
	Post-Graduate	228	59.1
	Doctorate (Including Pursuing Scholars)	63	16.3
Designation	Clinical Instructor/ Nursing Tutor	180	46.6
	Lecturer	104	26.9
	Professor	84	21.8
	Principal/ Administrator	18	4.7
Type of working Institution	Private	232	60.1
	Government	154	39.9
Teaching Experience (In years)	0-4 years	153	39.6
	5-9 years	141	36.5
	10-14 years	53	13.7
	15 years and more	39	10.1
Previous experience of E-teaching	Yes	194	50.3
	No	192	49.7
Taken E-classes during lockdown	Yes	283	73.3
	No	103	26.7

pandemic with a mean and SD of (6.7 ± 2.8).

Findings revealed degree of agreement shown by nursing educators regarding challenges encountered and its frequency. 28.2% and 43.3% nursing educators strongly agreed and agreed respectively that their teaching -learning sessions have become limited in interaction with students while using E-learning platforms during this lockdown. 26.7% and 29.5% nursing educators strongly agreed and agreed respectively that they are unable to catch students for their missed lectures. 37.8% nursing educators agreed and 35.5%

strongly agreed that they face difficulty in demonstrating nursing procedures through E-learning platforms due to limited resources.

Bar graph represents 19.2% nursing educators reported that they always face problems in handling E-learning platforms because they have not received any formal training to use it. 37.3% nursing educators reported that Very often they are not able to ask questions in between the sessions, since it causes lot of disturbance.

### Finding related to Association

Table 3 represents the association of mean scores of encountered challenges by nursing educators with gender, type of working institution, previous experience of E-teaching and taken E-classes during lockdown. Data revealed that encountered challenges were significantly associated with nursing educator's status of handling E-classes during lockdown. Nursing educators who have taken E-classes during this pandemic came across more challenges ( $6.4 \pm 2.7$ ) as compared to the educators who did not take virtual classes ( $7.1 \pm 2.9$ ) with a significant p-value of 0.02.

Table 4 represents the association of mean scores of encountered

**Table 2:** Clinical and behavioral characteristics of study participants at Debre Tabor General Hospital Northwest Ethiopia, 2020 (n=306).

Perceptions of Nursing educators	Mean $\pm$ SD	Range (Max-Min)	SE
Encountered challenges	$6.7 \pm 2.8$	12 (15-3)	0.14

**Table 3:** Represents the association of nursing educator's perceptions regarding encountered challenges with selected variables. n= 386.

Variables		Encounteredchallenges Mean ± SD	Mean diff (95% CI )	t-value	p-value
Gender	Female	6.5± 2.8	-0.31 (0.3 to -0.9)	0.98	0.32
	Male	6.8 ±2.7			
Type of working Institution	Private	6.7 ± 2.8	0.15 (0.72 to -0.4)	0.54	0.59
	Government	6.6 ±2.6			
Previous experience of E-teaching	Yes	6.68 ± 2.7	0.02 (0.58 to -0.52)	0.1	0.91
	No	6.65 ±2.8			
Taken E-classes during lockdown	Yes	6.4 ±2.7	-0.72 (-0.09 to -1.3)	0.47	0.02*
	No	7.1 ± 2.9			
Independent t test*p-value<0.05					

**Table 4:** Represents the association of nursing educator's perceptions regarding encountered challenges with selected variables. n= 386.

Variables		Encountered challenges Mean ± SD	F-value	p-value
Age	21-30	6.3 ± 2.3	7.69	0.0001*
	31-40	6.5 ± 2.6		
	41-50	8.3 ± 4.1		
	50 years and above	9.1 ± 3.1		
Qualification	Graduate	6.6 ± 2.9	3.62	0.02*
	Post-Graduate	6.4 ± 2.5		
	Doctorate (Including Pursuing Scholars)	7.4 ± 3.2		
Designation	Clinical Instructor/ Nursing Tutor	6.5 ± 2.6	6.85	0.0001*
	Lecturer	7.1 ± 2.8		
	Professor	5.8± 2.5		
	Principal/ Administrator	8.6 ± 2.8		
Teaching Experience (In years)	0-4 years	5.9 ± 1.9	12.45	0.0001*
	5-9 years	6.8 ± 2.8		
	10-14 years	6.6 ± 3.6		
	15 years and more	8.8 ± 2.7		
ANOVA*p-value<0.05				

challenges by nursing educators with age, qualification, designation and teaching experience and found to be statistically significant with all these variables with a p-value of 0.0001. 0.02, 0.0001 and 0.0001 respectively. Nursing educators with age group between 21 to 30 years, who were post graduates, who were working as professors and had teaching experience of 0 to 4 years were found to have encountered more challenges as compared to their other sub-groups.

Table 5 represents the item-wise association of frequency of encountered challenges by nursing educators with gender, age, qualification, designation, type of working institution, previous experience of E-teaching and teaching experience in years. Except previous experience of E-teaching, Nursing educator's inability to ask questions in between the E teaching-learning sessions was found to be significantly associated with all other socio-demographic variables like gender, age, qualification, designation, type of working institution and teaching experience in years with a p-value of 0.01, 0.0001, 0.0001, 0.0001, 0.0001, 0.0001 respectively. None of the nursing educators who were working as principal/ administrator (0%) reported difficulty in asking questions in between the sessions as compared to 46.4% professors. Data also revealed that problems faced by nursing educators while handling E-platforms due to no formal training was also found to be significantly associated with gender, age, designation, type of working institution, previous experience of E-teaching and teaching experience in years with a p-value of 0.03, 0.0001, 0.0001, 0.0001, 0.03, 0.04 respectively.

21.6% female nursing educators reported that they often find E-platforms problematic as compared to 12.5% male educators. None of the nursing educators with age group 50 years and above and who were working as principal/ administrator reported that they always face problems in handling E-platforms as compared to 22.4% educators with age group of 21 to 30 years and 22.6%

educators who were working as professors. 25.9% of nursing educators working in private institutions reported that they always face problems as compared to 9.1% in government institutions.

Table 5 represents the item-wise association of encountered challenges by nursing educators with gender, age, qualification,

**Table 5:** Represents the association of challenges faced by nursing educators while teaching E-classes with selected variables. n=386.

Variables		Inability to ask questions in between the E-sessions Frequency (Percentage)					p-value
		Always	Very Often	Sometimes	Rarely	Never	
Gender	Female	76 (27.0)	116 (41.1)	58 (20.6)	15 (5.3)	17 (6.0)	0.01*
	Male	29 (27.9)	28 (26.9)	38 (36.5)	5 (4.8)	4 (3.9)	
	21-30	39 (25.6)	46 (30.3)	55 (36.2)	3 (2)	9 (5.9)	
Age (In years)	31-40	59 (30)	82 (41.6)	31 (15.7)	17 (8.6)	8 (4.1)	0.0001*
	41-50	5 (19.2)	12 (46.2)	5 (19.2)	0 (0)	4 (15.4)	
	50 years and above	2 (18.2)	4 (36.4)	5 (45.4)	0 (0)	0 (0)	
Qualification ( In Nursing)	Graduate	24 (25.3)	38 (40)	11 (11.6)	13 (13.6)	9 (9.5)	0.0001*
	Post-Graduate	64 (28.1)	84 (36.8)	70 (30.7)	6 (2.6)	4 (1.8)	
	Doctorate (Including Pursuing Scholars)	17 (27)	22 (34.9)	15 (23.8)	1 (1.6)	8 (12.7)	
Designation	Clinical Instructor/ Nursing Tutor	47 (26.1)	61 (33.9)	47 (26.1)	16 (8.9)	9 (5.0)	0.0001*
	Lecturer	19 (18.3)	53 (51.0)	27 (26.0)	1 (1.0)	4 (3.7)	
	Professor	39 (46.4)	22 (26.2)	16 (19.0)	2 (2.4)	5 (6.0)	
	Principal/ Administrator	0 (0)	8 (44.4)	6 (33.3)	1 (5.6)	3 (16.7)	
Type of working Institution	Private	66 (28.4)	88 (37.9)	42 (18.1)	15 (6.5)	21 (9.1)	0.0001*
	Government	39 (25.3)	56 (36.4)	54 (35.1)	5 (3.2)	0 (0.0)	
Previous experience of E-teaching	Yes	59 (30.4)	69 (35.6)	46 (23.7)	8 (4.1)	12 (6.2)	0.51
	No	46 (24.0)	75 (39.1)	50 (26.0)	12 (6.3)	9 (4.7)	
Teaching Experience (In years)	0-4 years	44 (28.8)	57 (37.3)	41 (26.8)	7 (4.6)	4 (2.6)	0.0001*
	5-9 years	36 (25.5)	56 (39.7)	39 (27.7)	5 (3.5)	5 (3.5)	
	10-14 years	23 (43.4)	14 (26.4)	0 (0)	7 (13.2)	9 (17)	
	15 years and more	2 (5.1)	17 (43.6)	16 (41.0)	1 (2.6)	3 (7.7)	
		Problems in handling E-learning platforms due to no formal training.					
Gender	Female	49 (17.4)	61 (21.6)	86 (30.5)	60 (21.3)	26 (9.2)	0.003*
	Male	25 (24.0)	13 (12.5)	42 (40.4)	9 (8.7)	15 (14.4)	
Age (In years)	21-30	34 (22.4)	16 (10.5)	62 (40.8)	24 (15.8)	16 (10.5)	0.0001*
	31-40	36 (18.3)	51 (25.9)	60 (30.5)	34 (17.3)	16 (8.0)	
	41-50	4 (15.4)	3 (11.5)	4 (15.4)	6 (23.1)	9 (34.6)	
	50 years and above	0 (0.0)	4 (36.4)	2 (18.2)	5 (45.5)	0 (0.0)	
Qualification ( In Nursing)	Graduate	19 (20.0)	27 (28.4)	27 (28.4)	16 (16.8)	6 (6.3)	0.07
	Post-Graduate	43 (18.9)	35 (15.4)	86 (37.7)	37 (16.2)	27 (11.8)	
Designation	Doctorate (Including Pursuing Scholars)	12 (19.0)	12 (19.0)	15 (23.8)	16 (25.4)	8 (12.7)	0.0001*
	Clinical Instructor/ Nursing Tutor	32 (17.8)	40 (22.2)	71 (39.4)	29 (16.1)	8 (4.4)	
	Lecturer	23 (22.1)	15 (14.4)	27 (26.0)	27 (26.0)	12 (11.5)	
	Professor	19 (22.6)	15 (17.9)	24 (28.6)	13 (15.5)	13 (15.5)	
	Principal/ Administrator	0 (0.0)	4 (22.2)	6 (33.3)	0 (0.0)	8 (44.4)	
Type of working Institution	Private	60 (25.9)	51 (22.0)	52 (22.4)	40 (17.2)	29 (12.5)	0.0001*
	Government	14 (9.1)	23 (14.9)	76 (49.4)	29 (18.8)	12 (7.8)	
Previous experience of E-teaching	Yes	38 (19.6)	25 (12.9)	69 (35.6)	38 (19.6)	24 (12.4)	0.03*
	No	36 (18.8)	49 (25.5)	59 (30.7)	31 (16.1)	17 (8.9)	
Teaching Experience (In years)	0-4 years	29 (19.0)	32 (20.9)	61 (39.9)	20 (13.1)	11 (7.2)	0.04*
	5-9 years	28 (19.9)	23 (16.3)	46 (32.6)	28 (19.9)	16 (11.3)	
	10-14 years	13 (24.5)	11 (20.8)	8 (15.1)	15 (28.3)	6 (11.3)	
	15 years and more	4 (10.3)	8 (20.5)	13 (33.3)	6 (15.4)	8 (20.5)	
χ2 – chi square test.*p-value<0.05							

$\chi^2$  - chi square test, \*p-value<0.05



**Table 6:**Represents the association of challenges faced by nursing educators while teaching E-classes with selected variables. n= 386.

Variables		Inability to ask questions in between the E-sessions Frequency (Percentage)					p-value
		Always	Very Often	Sometimes	Rarely	Never	
Gender	Female	79 (28)	117 (41.5)	43 (15.2)	34 (12.1)	9 (3.2)	0.5
	Male	30 (28.8)	50 (48.1)	14 (13.5)	9 (8.7)	1 (1.0)	
	21-30	40 (26.3)	77 (50.7)	23 (15.1)	6 (3.9)	6 (3.9)	
Age (In years)	31-40	62 (31.5)	86 (43.7)	22 (11.2)	27 (13.7)	0 (0)	0.0001*
	41-50	7 (26.9)	2 (7.7)	8 (30.8)	5 (19.2)	4 (15.4)	
	50 years and above	0 (0)	2 (18.2)	4 (36.4)	5 (45.5)	0 (0)	
Qualification ( In Nursing)	Graduate	24 (25.3)	39 (41.1)	22 (23.2)	4 (4.2)	6 (6.3)	0.0001*
	Post-Graduate	69 (30.3)	107 (46.9)	27 (11.8)	21 (9.2)	4 (1.8)	
	Doctorate (Including Pursuing Scholars)	16 (25.4)	21 (33.3)	8 (12.7)	18 (28.6)	0 (0)	
Designation	Clinical Instructor/ Nursing Tutor	40 (22.2)	91 (50.6)	40 (22.2)	4 (2.2)	5 (2.8)	0.0001*
	Lecturer	32 (30.8)	42 (40.4)	9 (8.7)	16 (15.4)	5 (4.8)	
	Professor	36 (42.9)	29 (34.5)	4 (4.8)	15 (17.9)	0 (0)	
	Principal/ Administrator	1 (5.6)	5 (27.8)	4 (22.2)	8 (44.4)	0 (0)	
Type of working Institution	Private	65 (28)	94 (40.5)	37 (15.9)	26 (11.2)	10 (4.3)	0.08
	Government	44 (28.6)	73 (47.4)	20 (13)	17 (11)	0 (0)	
Previous experience of E-teaching	Yes	49 (25.3)	96 (49.5)	15 (7.7)	29 (14.9)	5 (2.6)	0.0001*
	No	60 (31.3)	71 (37.0)	42 (21.9)	14 (7.3)	5 (2.6)	
Teaching Experience (In years)	0-4 years	37 (24.2)	85 (55.6)	27 (17.6)	4 (2.5)	0 (0)	0.0001*
	5-9 years	49 (34.8)	54 (38.3)	16 (11.3)	16 (11.3)	6 (4.3)	
	10-14 years	20 (37.7)	22 (41.5)	2 (3.8)	5 (9.4)	4 (7.5)	
	15 years and more	3 (7.7)	6 (15.4)	12 (30.8)	18 (46.2)	0 (0)	
		Difficulty in demonstrating nursing procedures due to limited resources					p-value
Gender	Female	109 (38.7)	100 (35.5)	36 (12.8)	18 (6.4)	19 (6.7)	0.1
	Male	28 (26.9)	46 (44.2)	20 (19.2)	4 (3.8)	6 (5.8)	
Age (In years)	21-30	68 (44.7)	60 (39.5)	15 (9.9)	4 (2.6)	5 (3.3)	0.0001*
	31-40	60 (30.5)	73 (37.1)	35 (17.8)	13 (6.6)	16 (8.1)	
	41-50	7 (26.9)	10 (38.5)	5 (19.2)	0 (0)	4 (15.4)	
	50 years and above	2 (18.2)	3 (27.3)	1 (9.1)	5 (45.5)	0 (0)	
Qualification ( In Nursing)	Graduate	48 (50.5)	24 (25.3)	8 (8.4)	5 (5.3)	10 (10.5)	0.0001*
	Post-Graduate	77 (33.8)	89 (39.0)	43 (18.9)	4 (1.8)	15 (6.6)	
Designation	Doctorate (Including Pursuing Scholars)	12 (19)	33 (52.4)	5 (7.9)	13 (20.6)	0 (0)	0.0001*
	Clinical Instructor/ Nursing Tutor	78 (43.3)	66 (36.7)	11 (6.1)	9 (5)	16 (8.9)	
	Lecturer	23 (22.1)	40 (38.5)	27 (26)	5 (4.8)	9 (8.7)	
	Professor	33 (39.3)	29 (34.5)	17 (20.2)	5 (6)	0 (0)	
	Principal/ Administrator	3 (16.7)	11 (61.1)	1 (5.6)	3 (16.7)	0 (0)	
Type of working Institution	Private	86 (37.1)	85 (36.6)	28 (12.1)	13 (5.6)	20 (8.6)	0.12
	Government	51 (33.1)	61 (39.6)	28 (18.2)	9 (5.8)	5 (3.2)	
Previous experience of E-teaching	Yes	65 (33.5)	80 (41.2)	28 (14.4)	17 (8.8)	4 (2.1)	0.001*
	No	72 (37.5)	66 (34.4)	28 (14.6)	5 (2.6)	21 (10.9)	
Teaching Experience (In years)	0-4 years	78 (51)	54 (35.3)	12 (7.8)	4 (2.6)	5 (3.3)	0.0001*
	5-9 years	37 (26.2)	55 (39.0)	33 (23.4)	0 (0)	16 (11.3)	
	10-14 years	17 (32.1)	22 (41.5)	0 (0)	10 (18.9)	4 (7.5)	
	15 years and more	5 (12.8)	15 (38.5)	11 (28.2)	8 (20.5)	0 (0)	

$\chi^2$  – chi square test,\*p-value<0.05

designation, type of working institution, previous experience of E-teaching and teaching experience in years. Except gender and type of working institution, Nursing educator's limited interactivity during E teaching-learning sessions was found to be significantly associated with all other socio-demographic variables like age, qualification, designation, previous experience of E-teaching and

teaching experience in years with a p-value of 0.0001, 0.0001, 0.0001, 0.0001, 0.0001 respectively. Difficulty in demonstrating nursing procedures through E-platforms was also found to be significantly associated with age, qualification, designation, previous experience of E-teaching and teaching experience in years with a p-value of 0.0001, 0.0001, 0.0001, 0.0001, 0.0001 respectively. 38.7% female

educators strongly agreed that it is difficult for them to demonstrate procedures through E-platforms as compared to 26.7% male educators.

Table 7 represents association of nursing educator's inability to catch students for their missed lectures with selected variables and it was found to be significantly associated with gender, age, qualification, designation, previous experience of E-teaching and teaching experience with a p-value of 0.0001, 0.0001, 0.0001, 0.0001, 0.006, 0.0001 respectively. 30.5% female educators strongly agreed that they are unable to catch students on E-platforms for their missed lectures as compared to 16.3% male educators.

## DISCUSSION

This study aimed to assess the challenges faced by nursing educators during the corona pandemic. March 2020 will be famous in abruptly shutting down the nursing education system in India. This closure created pressure among nursing educators to create innovative teaching-learning opportunities to continue standard nursing education.

At this unprecedented time of this pandemic, the need to prepare future nurses has never been as acute as it now. The intense impact of the COVID pandemic may permanently change the way of nursing education.

The sudden announcement of lockdown resultant in logistic and health concerns in response to COVID-19 preventive restriction. Nursing institutions

faculties left with no choice but quickly transitioned to online

and e-learning methods of teaching-learning to maintain regular academics of nursing students.

E-learning approaches in the absence of traditional teaching methods can be very solitary and didactic when students are supposed to watch videos, read documents online, or click through web-based presentations—that's dull. One of the difficult forms of learning is to sit passively and listen, it serves no motive well, especially for those who are residing in the remote area with issues of connectivity.

Educators have to balance their personal life as well as professional load and find innovative ways of teaching-learning. They have transformed their traditional way of teaching to modern ways of teaching by involving an e-teaching approach that they had not much heard before. Presently video-conferencing apps are throwing institutions a lifeline. The educators will have started to innovate and experiment with these online tools and may want to continue online pedagogies as a result of a pandemic situation. The result of our study shows many of the nursing educators faced difficulty in switching from in-person to remote instruction. The educators are quickly perceiving that distant teaching-learning is just a baby step experiment in the long journey to offering online education that has been conceived as such, which includes effective student engagement tools and teacher training.

In the absence of classroom teaching, it becomes more important to empower student nurses with the regular theory and clinical skills experiences to face any situation during clinical area posting with confidence. Thankfully we are in the century of digitalization, we could impart and continue nursing education while sitting far from our students through direct web-based e-learning and webinars.

**Table 7:** Represents the association of challenges faced by nursing educators while teaching E-classes with selected variables. n= 386.

Variables		Inability to catch students for missed lectures Frequency (Percentage)					p-value
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Gender	Female	86 (30.5)	79 (28)	77 (27.3)	26 (9.2)	14 (5)	0.0001*
	Male	17 (16.3)	35 (33.7)	22 (21.2)	25 (24)	5 (4.8)	
Age (In years)	21-30	32 (21.1)	50 (32.9)	50 (32.9)	15 (9.9)	5 (3.3)	0.0001*
	31-40	62 (31.5)	63 (32)	36 (18.3)	31 (15.7)	5 (2.5)	
	41-50	7 (26.9)	1 (3.8)	9 (34.6)	0 (0)	9 (34.6)	
	50 years and above	2 (18.2)	0 (0)	4 (36.4)	5 (45.5)	0 (0)	
Qualification (In Nursing)	Graduate	29 (30.5)	19 (20)	31 (32.6)	11 (11.6)	5 (5.3)	0.0001*
	Post-Graduate	57 (25)	85 (37.3)	55 (24.1)	22 (9.6)	9 (3.9)	
	Doctorate (Including Pursuing Scholars)	17 (27)	10 (15.9)	13 (20.6)	18 (28.6)	5 (7.9)	
Designation	Clinical Instructor/ Nursing Tutor	48 (26.7)	54 (30.0)	45 (25)	23 (12.8)	10 (5.6)	0.0001*
	Lecturer	24 (23.1)	24 (23.1)	33 (31.7)	19 (18.3)	4 (3.8)	
	Professor	30 (35.7)	31 (36.9)	17 (20.2)	6 (7.1)	0 (0)	
	Principal/ Administrator	1 (5.6)	5 (27.8)	4 (22.2)	3 (16.7)	5 (27.8)	
Type of working Institution	Private	66 (28.4)	65 (28)	58 (25)	34 (14.7)	9 (3.9)	0.5
	Government	37 (24)	49 (31.8)	41 (26.6)	17 (11)	10 (6.5)	
Previous experience of E-teaching	Yes	47 (24.2)	59 (30.4)	49 (25.3)	35 (18)	4 (2.1)	0.006
	No	56 (29.2)	55 (28.6)	50 (26)	16 (8.3)	15 (7.8)	
Teaching Experience (In years)	0-4 years	41 (26.8)	49 (32)	44 (28.8)	19 (12.4)	0 (0)	0.0001*
	5-9 years	36 (25.5)	47 (33.3)	34 (24.1)	14 (9.9)	10 (7.1)	
	10-14 years	21 (39.6)	15 (28.3)	3 (5.7)	10 (18.9)	4 (7.5)	
	15 years and more	5 (12.8)	3 (7.7)	18 (46.2)	8 (20.5)	5 (12.8)	

$\chi^2$  - chi square test, \*p-value<0.05

Initiating technology integration in education is not exclusive efforts of teachers and their students, but a multi-disciplinary task also interdependent on other agencies and individuals, including instructional design and technical support, faculty peers who have also created online courses and institutional setup. These changes have also increased the workload of many faculty who were not expecting technology to be central to their careers.

Despite technological advancement and involvement of information technology in nursing education, appropriate and authentic online evaluation tools for student's assessment are impaired. 2

Challenges are also including limited resources in nursing institutions like high-quality internet access, e-library set up, and technical support for nursing educators to handle gadgets and live streaming of classes. 1 Many participants from our study faced a difficult time using technological devices and web-based learning apps the first time as they had no formal training for computer operating. Difficulty in immediate real-time interaction between students and educators was also mentioned by study participants, and thus need to design the way for easy feedback on questions and assessment.

The major concern of sudden shifting from traditional learning to e-learning is the integration of technology and human touch as educators also share about with their students.

Study responders were in favor of the statement that their teaching-learning sessions have become limited in interaction with students while using e-learning platforms due to missing one to one human interaction.

Nursing educators can understand the power of interaction and concern between teacher and students, the teaching-learning process is a returned relationship in which their involvement is crucial to form learning meaningful. Sadly caring found within educator- student alliance is influenced by the restrictions present in the technology-based education due to distant presence. 4

According to the American Nurses Association, (2010) technology has been playing a central part of the nursing curriculum globally. 3

Daneshgar & Parikh, showed the importance of educators supply nursing students with up-to-date knowledge to implement during patients care in clinical settings. 7

Study participants have faced difficulty in demonstrating nursing procedures through E-learning platforms. Nursing faculty have required to have an active role in knowledge creation and continuous learning process.

In traditional education method if students had query and question they debated with their peers and classmates or teachers, discuss it with an open mind, and appraise the response from different outlook to search new knowledge. 6

The majority of study participants accepted that in the absence of classroom contact, they find it difficult to ask questions from students during e-classes and this was disrupting flow and rhythm of classes.

Nursing education, being a social institution serving the needs of society and nation is pivotal for the health care system to provide continuity in care. It should be up to date and must continuously evolve to meet the challenges of the fast-changing educational requirements of nursing specialty.

The call for the transformation of nursing education is imperative.

This article discusses the transformation of nursing education into technology-based teaching-learning and challenges faced by nursing educators. During Lockdown many experts considered nursing education, a pioneer in the finest use of technology in educational purposes. Nursing education face three main challenges. The first challenge is providing technical training to operate gadgets and computers to nursing educators. The second challenge is to create an interest in the use of technology among students and educators. The last challenge is preparing a work force of nursing students to be future-ready to technology in practice and education that will help to bridge the gap between the traditional educational methods and technology-based learning.

## CONCLUSION

There is no clarity regarding how long the pandemic restriction will persist and likely this social distancing environment is going too accepted as a "new normal". The challenge is in providing uninterrupted nursing education for students under these never seen circumstances.

The study findings reveal that the pandemic has influenced the nursing education and all stakeholders and pressurized them to be prepared digitally literate to perform with the current scenario. There is a keen hope to emerge a brand new education system post-pandemic. Nursing educators must be digitally competent to rescue their job with higher skills.

## Recommendations

- Nursing educators should be provided with virtual training for learning teaching learning software's
- Nursing educators should be provided with camera friendly a workshops and training
- There must be a revision of syllabus with impose some portion of syllabus should be offered online through some authenticated platforms
- There must be a provision for funding for public education

## ETHICAL CONSIDERATION

Inform consent was obtained from the sample who have participated in research study in electronic form. Confidentiality of all sample's information is maintained properly.

## CONFLICT OF INTEREST

None

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None

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