

## ORIGINAL ARTICLE

**CHALLENGES AND OPPORTUNITIES DURING COVID-19 PANDEMIC IN ONLINE NURSING EDUCATION: STUDENTS' AND TEACHERS' PERSPECTIVE AT INSTITUTE OF NURSING SCIENCES, KHYBER MEDICAL UNIVERSITY, PESHAWAR****Zia Ullah<sup>1\*</sup>, Sabiha Khanum<sup>1</sup>, Najma Naz<sup>1</sup>, Zia Ud Din<sup>2</sup>****ABSTRACT**

**Introduction:** The COVID-19 virus adversely affected social life, economy and educational services all over the world, universities and colleges are facing difficulties to provide good quality educational services to the students due to prolonged waves of COVID-19 and extensive periods of lockdown. This study was aimed to identify challenges and opportunities for nursing students and teachers in online nursing education during the COVID-19 pandemic.

**Material & Methods:** A descriptive cross-sectional study was conducted from May 2021 to June 2021; the focus of this study was teachers and students of the Institute of Nursing Sciences, Khyber Medical University. A convenience sampling technique was utilized for data collection. A validated tool adopted from previous studies was utilized for data collection. Data analysis was done with the help of SPSS version 24.

**Results:** A total of 236 participant (9 teachers and 227 students) participated in this study. The mean experience of teachers was  $3.89 \pm 1.36$  years with a minimum and maximum of 2 and 9 years respectively. More than half of the teachers (55.6%) worked from their offices in the university during lockdown. Among the students 68.3% were from generic BSN, 13.2% from Post RN BSN and 18.5% were from MSN of which 38.8%, 21.1%, 32.6%, 4.0%, and 3.5% were in semester 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> respectively. Most (67.0%) of the students attended the classes from their home town.

**Conclusion:** Most of the teachers and students belong to remote areas of the province, internet connectivity and electricity problems are the major issues faced by teachers and students which significantly affect their studies. A systematic solution is needed from policymakers especially from the ministry of education to overcome the situation and improve education standards during pandemics.

**Key Words:** challenges, Covid-19, nursing education, online education

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**INTRODUCTION**

Coronavirus caused thousands of mortalities globally, its control was a big challenge because of the number of the positive case,

hospitalizations and mortality was seen at peak.<sup>1</sup> The World Health Organization (WHO) declared COVID-19 as a pandemic in 2020

March.<sup>2</sup> The COVID-19 virus adversely affected social life, economy and educational services all over the world, universities and colleges. The institutions were facing difficulties to provide good quality educational services to the students due to prolonged waves of COVID-19 and extensive periods of lockdown.<sup>3</sup> In all the three waves, educational institutes were closed for a prolonged time to maintain social distancing and to reduce the risk of COVID-19 transmission.<sup>4</sup> This prolonged closure not only impacted the teachers, students and families but also produced diverse societal and economic consequences.<sup>5</sup>

Due to global emergence of COVID-19 urged significant variations in different educational modalities. The current situation produced many challenges for higher education teachers and students, especially nursing education which is traditionally based on theory and clinical practice (face-to-face learning).<sup>6</sup> Corona virus's disruptive effects have urged rapid transformation in traditional nursing education from physical (face to face) classes to online education.<sup>7</sup>

In response to universities closures, the Higher Education Commission (HEC) of Pakistan also recommended implementing an online education system for limiting the disruption in higher studies. Due to the implementation of online education nursing students were also restricted from their clinical duties, however, theory continued by taking online classes.

The same approach was also implemented by the Institute of Nursing Sciences, Khyber Medical University. This practice of distance learning was new for both nursing students and teachers. Most of the students of the Institute of Nursing Sciences belonged to remote areas and they were having limited access to the internet as well as electricity. So current study was aimed to identify challenges and opportunities for nursing students and teachers during the COVID-19 pandemic in online nursing education.

#### **MATERIAL AND METHODS**

A descriptive cross-sectional study was conducted from May 2021 to June 2021; the focus of this study was teachers and students of the Institute of Nursing Sciences, Khyber Medical University, Peshawar. A convenience sampling technique was utilized for data

collection. Nursing students and teachers who attended online classes during the COVID-19 pandemic were included in the study. Ethical permission was obtained from the ethical review board of Khyber Medical University. A validated tool adopted from previous studies was utilized for data collection.<sup>5</sup> Pilot testing of the questionnaire was done. Content validity of the questionnaire was 0.89, and internal consistency was 0.94 by using Cronbach's alpha coefficient. Written informed consent was obtained from the participants before data collection and confidentiality was assured. Data analysis was done with the help of Statistical Package for Social Sciences software (SPSS version 24). Descriptive statistics including frequencies, proportions and percentages were utilized for categorical variables. Mean and standard deviation were calculated for continuous variables.

#### **RESULTS**

Among 236 participants, 9 teachers participated in this study. Among the teachers 66.7 % were male and the majority (88.9%) of them were married. Furthermore, five among the total were lecturers, three were demonstrators and one assistant professor. The mean experience of teachers was  $3.89 \pm 1.36$  years with a minimum and maximum of 2 and 9 years, respectively. More than half of the teachers (55.6%) worked from their offices in the university during the lockdown (table-1). Table-2 summarizes the responses of teachers towards the benefits of online nursing education where the majority of the respondent (66.7%) did not agree to take classes from their homes. Furthermore, majority (88.9%) of the participants did not felt any difficulty while taking physical classes to face many students. All of the participants were glad to know the use of modernized technology for taking online classes. More than half (55.6%) of the respondents agreed with the statement that online classes saved traveling costs and they could perform their domestic activities easily as well.

Table-3 illustrates teacher's activities and problems regarding online classes. Majority (88.9%) of the teachers responded that they have internet access at home for online classes. 77.8% suffered from electricity problems during online classes. Majority (77.8%) of the respondents suffered due to poor internet

access or connectivity issue, they used their own internet data packages. Most (88.9%) of the respondents were fully knowledgeable regarding media use. More than half (55.6%) of the respondents were having gadgets at their homes for online classes. Majority (88.9%) of the teachers used their laptops and computers to deliver online classes. Students leaving and joining during online classes was also a problem for most of the teachers. During any problem in online class connectivity or other issues, all teachers (100%) were able to provide alternative notes, assignments and homework to the students. Majority (77.8%) of the teachers were anxious about students' queries, they were thinking that they will not be able to clear students' queries during online classes.

Overall, 227 (133 female, 94 male) students participated in this study. Majority (76.7%) of the students were single. Among the students 68.3% were from generic BSN, 13.2% from Post RN BSN and 18.5% were from MSN of which 38.8%, 21.1%, 32.6%, 4.0%, and 3.5% were in semester 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup>, respectively. Most (67.0%) of the students attended the classes from their home town (table-4).

Table-5 depicts the attitude of nursing students toward the benefits of online nursing education. Regarding online classes, majority (69.2%) of the students were not happy to attend classes from their homes. Only a small proportion (24.7%) of the students were satisfied with online classes because they were facing difficulties in physical contact sessions due to facing many people in the institute. Most (60.4%) of the students were glad to be updated with the use of digital technology for taking online classes. More than half (55.5%) of the students stated that online classes saved their time and they could easily perform a lot of other activities. Most (57.7%) of students stated that during online classes they can easily attend their classes as well as can take care of their families at the same time. Majority (67.4%) of the students responded that online classes save their traveling costs.

Table-6 illustrates activities and problems of nursing students regarding online classes. Around one half (43.6%) of the students were having internet access at their homes for online classes. Majority (63.9% and 70%) of the respondents got disturbed in online classes due

to electricity and internet problems respectively. Moreover, 80.2% of the respondents used data packages on daily basis to attend classes. Around one quarter (24.7%) of the respondents were not fully knowledgeable regarding media use (like class joining, recording lecture, mute –unmute and leaving the class, etc.). Around half (50.7%) of the students were unable to understand the full course during an online class. Only 42.7% of students were satisfied with the allocated time for the online class, likewise, 58.6% of the respondents felt that they did not get full attention from their teacher during an online class. Most (93.0%) of the participants used smartphones for attending online classes. Only 37.0% of the students were having good communication with their teachers at the time of the online lecture. Likewise, 19.4% of the students were not fully interested to join the online class even without any problem in joining. 73.6% of students got lecture materials and notes from the teacher even they were unable to join class due to some reasons. Moreover, 32.6% of students were unable to clarify their queries during the question/ answer session of the online class. Majority (62.1%) of the students got regular assignments from their teachers during online sessions. Likewise, 67.0% of the students were fully satisfied with the teacher's feedback on their assignments and homework. Around half (51.5%) of the students felt that they are suffering from vision problems and headaches due to continuous online classes. Moreover, most (70.5%) of the students were anxious due to internet connectivity issues/electricity problems and also majority (63.4%) of them were anxious because they were unable to understand the full course delivered by their teacher during online classes.

## DISCUSSION

The current study was conducted to determine challenges and opportunities for nursing students and teachers in online nursing education during the COVID-19 pandemic. Our study findings depicted different challenges and opportunities for both teachers and students during online classes. The findings of our study were consistent with earlier studies conducted in Nepal and Germany which revealed similar benefits and problems of online classes.<sup>5,8</sup>

The current study revealed that most of the teachers (66.7%) and students (69.2%) were not feeling satisfied with taking classes from their homes because it were less beneficial. A study conducted in India also revealed that the online mode of education is significantly less beneficial compared to physical classes.<sup>9</sup>

Besides the benefits of online education, all the teachers and most (60.4%) of the student were glad to be updated with the utilization of digital technology. These results were comparable to previous study findings, which have revealed that the use of digital technology and digital learning resources were having a positive impact on learning.<sup>10</sup>

Our findings indicated that most (77.8%) of the teachers and majority of students (70%) suffered from electricity problems or poor internet access. A study conducted in Indonesia depicted that for online classes, 30.4% of the participants searched for an area with stronger internet access to attend their classes.<sup>11</sup> The current study identified that some (11.1 %) of the teachers and around half (51.5) of the students felt symptoms of vision problems and headache due to online classes. A study conducted in India also showed that 86.5% of the respondents felt eye strain due to excessive use of computer and mobile screens in online classes.<sup>12</sup>

The current study findings revealed that 58.6 % of the students were thinking that they were not getting full attention from their teachers during online classes. These results were found comparable with findings of the previous study, which stated that most (47%) of the students thought that in online classes proper attention was not given compared to physical classes.<sup>13</sup>

Only few studies have been conducted on online nursing education in Pakistan during the COVID-19 pandemic. This is a pioneer study conducted in Institute of Nursing Sciences, Khyber Medical University, Peshawar to identify challenges and opportunities for nursing students and teachers in online nursing education during the COVID-19 pandemic. Due to limited resources and non-availability of fundings we conducted this study in a single nursing institute. Therefore, precautions must be taken before generalizing the results

## CONCLUSION

The current survey findings provided significant baseline information regarding

challenges and opportunities for nursing students and teachers in online nursing education during the COVID-19 pandemic. Overall similar challenges and opportunities were found for both teachers and students. Most of the teachers and students belonged to remote areas of the province, internet connectivity and electricity problems were the major issues faced by teachers and students which significantly affected their studies. As we know that the end of the COVID-19 pandemic is unpredictable and the probability of new strains of the virus is emerging. The need for a lockdown has produced stress and anxiety among nursing students and teachers. A systematic solution is needed from policymakers especially from the ministry of education to overcome the situation and improve education standards during pandemics.

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Table-1: Demographic Characteristics of Teachers

		Frequency	Percentage
Gender	Male	6	66.7
	Female	3	33.3
Social status	Single	1	11.1
	Married	8	88.9
Designation	Demonstrator	3	33.3
	Lecturer	5	55.6
	Assistant Professor	1	11.1
Place of residence during online classes	Home Office	4	44.4
	Own office in the university	5	55.6

Table 2: Attitude of Teachers towards benefits of online classes

Statement	Responses	Frequency	Percentage
I enjoy taking a class from home than from school	Yes	3	33.3
	NO	6	66.7
	Don’t know	0	0
It was difficult to face many students in school, which now is easy for me because of online class	Yes	1	11.1
	NO	8	88.9
	Don’t know	0	0
I am glad to be updated with digital technology used for taking the class	Yes	9	100.0
	NO	0	0
	Don’t know	0	0
Online class saves time so I can do lots of my other works	Yes	3	33.3
	NO	5	55.6
	Don’t know	1	11.1
I am happy that I can involve in an online class as well as take care of my family at the same time	Yes	4	44.4
	NO	5	55.6
	Don’t know	0	0
Online class saves my travel cost, as I do not travel from home to college	Yes	4	44.4
	NO	5	55.6
	Don’t know	0	0



Table-3: Activities/Problems of Teachers regarding online classes

Statement		F	P
I have internet access for an online class at my home	Yes	8	88.9
	No	0	0
	Sometimes	1	11.1
I get disturbed for online class because of electricity problem	Yes	7	77.8
	No	1	11.1
	Sometimes	1	11.1
I get disturbed for online class because of internet problem	Yes	6	66.7
	No	1	11.1
	Sometimes	2	22.2
I use an internet data pack for the online class	Yes	7	77.8
	No	0	0
	Sometimes	2	22.2
I have full knowledge regarding media used for online education (like joining, recording, mute-unmute, leave, etc.)	Yes	8	88.9
	No	1	11.1
	Sometimes	0	0
I am happy with the time allocated (routine) for the online class.	Yes	6	66.7
	No	2	22.2
	Sometimes	1	11.1
I have gadgets available at my home for the online class	Yes	5	55.6
	No	4	44.4
	Sometimes	0	0
I use laptop/ computer for online class	Yes	8	88.9
	No	1	11.1
	Sometimes	0	0
I use mobile (cell phone) for my online class	Yes	4	44.4
	No	3	33.3
	Sometimes	2	22.2
I get disturbed during online class because of students leaving and joining in between my class	Yes	8	88.9
	No	1	11.1
	Sometimes	0	0
I get a response from students when I ask a question in between online class	Yes	1	11.1
	No	3	33.3
	Sometimes	5	55.6
I take attendance and all the students are involved in the online class	Yes	6	66.7
	No	2	22.2
	Sometimes	1	11.1
I can satisfy my student's queries regarding courses through the online class	Yes	6	66.7
	No	1	11.1
	Sometimes	2	22.2
I can fulfill daily objectives regarding courses through the online class	Yes	5	55.6
	No	2	22.2
	Sometimes	2	22.2
I can provide alternative notes to my students when they have a problem in joining an online class	Yes	9	100.0
	No	0	0
	Sometimes	0	0
I can have good communication with students during online class	Yes	7	77.8
	No	1	11.1
	Sometimes	1	11.1
I give assignments/ homework to my students after online class	Yes	9	100.0
	No	0	0
	Sometimes	0	0

I provide feedback to students regarding their assignment/ homework	Yes	8	88.9
	No	0	0
	Sometimes	1	11.1
I feel like I am suffering from an eye problem/ headache because of online class	Yes	1	11.1
	No	5	55.6
	Sometimes	3	33.3
I am anxious because of the internet/ electricity problem during online class	Yes	8	88.9
	No	1	11.1
	Sometimes	0	0
I am anxious that I am not able to clear student's queries regarding courses through the online class	Yes	2	22.2
	No	7	77.8
	Sometimes	0	0

Table-4: Demographic Characteristics of students

		Frequency	Percentage
Gender	Male	94	41.4
	Female	133	58.6
Social status	Single	174	76.7
	Married	53	23.3
Program	Generic BSN	155	68.3
	Post RN BSN	30	13.2
	MSN	42	18.5
Semester	1st	88	38.8
	2nd	48	21.1
	4th	74	32.6
	6th	9	4.0
	8th	8	3.5
Place of residence during online classes	Hostel	69	30.4
	Home Town	152	67.0
	No Answer	6	2.6

Table-5: Attitude of Nursing Students towards benefits of online classes

Statement	Responses	Frequency	Percentage
I enjoy taking a class from home than in Institute	Yes	63	27.8
	NO	157	69.2
	Don't know	7	3.1
It was difficult to face many people in the institute, which now is easy for me because of online class	Yes	56	24.7
	NO	159	70.0
	Don't know	12	5.3
I am glad to be updated with digital technology used for taking the class	Yes	137	60.4
	NO	81	35.7
	Don't know	9	4.0
Online class saves time so I can do lots of my other works	Yes	126	55.5
	NO	92	40.5
	Don't know	9	4.0
I am happy that I can involve in an online class as well as take care of my family at the same time	Yes	131	57.7
	NO	88	38.8
	Don't know	8	3.5
Online class saves my travel cost, as I do not travel from home to school	Yes	153	67.4
	NO	67	29.5
	Don't know	7	3.1

Table-6: Activities/Problems of Nursing Students regarding online classes

Statement		F	P
I have internet access for my online class at my home	Yes	99	43.6
	No	82	36.1
	Sometimes	46	20.3
I get disturbed during my online class because of electricity problem	Yes	145	63.9
	No	45	19.8
	Sometimes	37	16.3
I get disturbed during my online class because of an internet problem	Yes	159	70.0
	No	24	10.6
	Sometimes	44	19.4
I use an internet data pack for my online class	Yes	182	80.2
	No	20	8.8
	Sometimes	25	11.0
I have full knowledge regarding media used for online education (like joining, recording, mute-unmute, leave, etc.)	Yes	155	68.3
	No	56	24.7
	Sometimes	16	7.0
I am able understand the full course (content) provided by the teacher during online class without any queries	Yes	61	26.9
	No	115	50.7
	Sometimes	51	22.5
I am happy with the time allocated (routine) for the online class.	Yes	97	42.7
	No	101	44.5
	Sometimes	29	12.8
I feel like I am not getting full attention from the teacher in the online class	Yes	133	58.6
	No	64	28.2
	Sometimes	30	13.2
I have gadgets available at my home for my online class	Yes	88	38.8
	No	117	51.5
	Sometimes	22	9.7
I use a laptop/computer for my online class	Yes	35	15.4
	No	170	74.9
	Sometimes	22	9.7
I use mobile (cell phone) for my online class	Yes	211	93.0
	No	4	1.8
	Sometimes	12	5.3
I can have good communication with my teacher during my online class	Yes	84	37.0
	No	92	40.5
	Sometimes	51	22.5
I am not interested to join my online class even if I do not have any problem joining	Yes	44	19.4
	No	157	69.2
	Sometimes	26	11.5
I get notes/lecture materials from teachers even when I am not able to join my online class	Yes	167	73.6
	No	37	16.3
	Sometimes	23	10.1
I can clarify my queries through question/answer session of online class	Yes	114	50.2
	No	74	32.6
	Sometimes	39	17.2
I get regular assignments/ homework from the teacher after online class	Yes	141	62.1
	No	57	25.1
	Sometimes	29	12.8
I do not have any problem doing homework/assignments after online class	Yes	95	41.9
	No	81	35.7
	Sometimes	51	22.5



I am happy that my teacher is providing feedback for my homework/assignment	Yes	152	67.0
	No	49	21.6
	Sometimes	26	11.5
I feel like I am suffering from an eye problem/headache because of my online class	Yes	117	51.5
	No	75	33.0
	Sometimes	35	15.4
I am anxious because of the internet/electricity problem during my online class	Yes	160	70.5
	No	29	12.8
	Sometimes	38	16.7
I am anxious because I cannot understand the full course (content) provided by the teacher in my online class	Yes	144	63.4
	No	47	20.7
	Sometimes	36	15.9