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### RESEARCH ARTICLE

## VIRTUAL PLATFORM FOR NURSING EDUCATION DURING COVID-19 LOCKDOWN IN NEPAL: OPPORTUNITIES AND CHALLENGES

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### Abstract

Since the beginning of Lockdown on March of 2020 to combat COVID-19 Pandemic, virtual learning (online classes) has been blooming in Nepal. Nursing education has also gone online. This study was done to assess the challenges and opportunities of virtual learning among the nursing students and teachers of Pokhara University (Nepal) who were involved in virtual learning. A cross sectional descriptive study was done and total enumerative sampling (non response rate of 10%) was used to select the samples. Self administered questionnaire was used to collect the data. Data was collected via google forms. Descriptive statistics like frequency and percentage was used to analyze the data by using SPSS version 20. The mean age of respondents was 22.78 and majority were students, married and from urban area. 86.2% of respondents used wifi for internet access. Only 8.8% of the respondents strongly agreed that virtual learning was an excellent opportunity and promotes self learning (54.1%). Very few respondents (6.1%) disagreed that flexible times and only 1.1% strongly disagreed working from the home setting being an added advantage. Majority of them responded that virtual learning is not comfortable and quality of discussion are not satisfactory (37.6%). Majority of the respondents agreed that virtual learning is difficult to concentrate and communicate (21% strongly agreed and 37.6% agreed). There were respondents who did not have enough skill to use the technology (32%). Unreliable and unstable connection was a major challenge. Majority preferred real classroom to virtual learning. Learning practical subjects also was a major challenge in virtual learning. This study recommends that the practical/clinical aspects of nursing education has to be addressed properly by developing softwares that could help students to learn nursing skills as well. Also, making teachers and students comfortable with technology by giving trainings, and keeping their morale high is very important to ensure effective virtual learning.

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### Introduction:-

Coronavirus disease 2019 (COVID-19) now called as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was initially

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reported to the WHO on December 31, 2019 in Wuhan City, Hubei Province, China<sup>1</sup>. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency.<sup>2</sup> The first case of COVID-19 was confirmed in Nepal on 23 January 2020.<sup>3</sup>

To combat the global pandemic of Covid-19, the Government of Nepal declared a country wide lockdown on 24 March, 2020. The lockdown affected all the institutions, medical schools being no exception. Kindergartens, schools, colleges and universities in the country were planned to be closed from march 19,2020 until the end of Chaitra (April 12) but due to the rise in cases and extension of lockdown, the educational institutions are closed till date with no formal information on when it will be opened. So some schools, colleges and universities have started online classes using apps like Zoom, Microsoft Teams, and Google Meet to continue the curriculum.<sup>4</sup>

UNESCO (2020) estimates that nearly nine million (8,796,624) students in Nepal are affected due to school/university closures in response to the pandemic. Out of this number, 958, 127 (11%) are in pre-primary, 2,466,570 (28%) are in primary, 3,463,763 (39%) are in secondary and 404,718 (5%) are in tertiary education.

Nursing education, to be specific, has also been affected. Covid-19 has increased the demand of nurses in current scenario. Not only that, nurses well equipped with skills and knowledge will be in high demand to combat the after effects of covid-19. In response to COVID-19, Canadian Association of Schools of Nursing (CASN) has emphasized on maintaining high quality nursing education and not to delay the graduation of nursing students given the urgent health service needs. Furthermore, CASN has also mentioned that it will accept documented, innovative curricular changes that allow students to avoid delays in graduation and support health service delivery needs during the COVID-19 pandemic.<sup>5</sup>

Elsevier, a Dutch publishing and analytics company specializing in scientific, technical, and medical content, have developed online tools and resources like Simulation learning system (SLS) for patient-care experiences, practice tests and patient review in an online environment. It has also developed SimPractice with the aim to help nursing colleges adapt curriculum and deliver course materials during this pandemic.<sup>6</sup>

Many believe that the lockdown in Nepal has given us an opportunity for a paradigm shift. The movement that has started in the current scenario towards digitizing education materials is perhaps an excellent opportunity for digital learning. They are using online tools for video conferencing to facilitate virtual classes. The crisis has forced both teachers and students to adapt to digital platforms and learn how to use them.<sup>7</sup>

The online learning has equally posed a challenge to the teachers and students. It is estimated that only 56% of people have access to internet (many with just limited access), only 8% families and 12 % schools have access both to internet and digital devices .virtual education, in particular the school education during COVID-19 school closures, is inadequate, fragmented and uncoordinated.<sup>8,9,10</sup>

One of the fundamental challenges that we face is the unprepared introduction of virtual learning, in context where there is a huge problem in the accessibility of internet and technology . For example, Nepal Telecom 4G service does not work in Sudal of Bhaktapur [neighboring district of Kathmandu- the capital city of Nepal. What is generally happening in our context is that we believe that online learning can be effective despite our curriculum not designed for online learning. The unprepared online delivery will have an impact on the quality of the programmes.<sup>11</sup>

#### **Rationale for the Study:**

In the field of health care education, knowledge, skill and attitude needs to be polished with equal importance to enhance quality and better decision making in practical settings. Nursing education, being no exception to this, focuses on clinical practice from the first year of college itself so that students can acquire knowledge, skill and attitude. Though the traditional teaching learning technique has changed (where teachers act as facilitators and students are active learners), we, in Nepal still follow a lot of traditional technique with a little bit of student driven teaching learning method.<sup>12</sup>

The Covid-19 Pandemic has forced all educational sector, including nursing education to opt for virtual learning. This study aims to find the opportunities that online learning has created and also explore the challenges that teachers and students in nursing are facing since nursing is a course where theory goes simultaneously with practical

work. The results of this study might help the concerned authority to make a change in curriculum so that it can maximally utilize the technology.

### Objectives:-

#### General objective

To find out the opportunities and challenges of virtual learning among nursing teachers and students during COVID-19 lockdown.

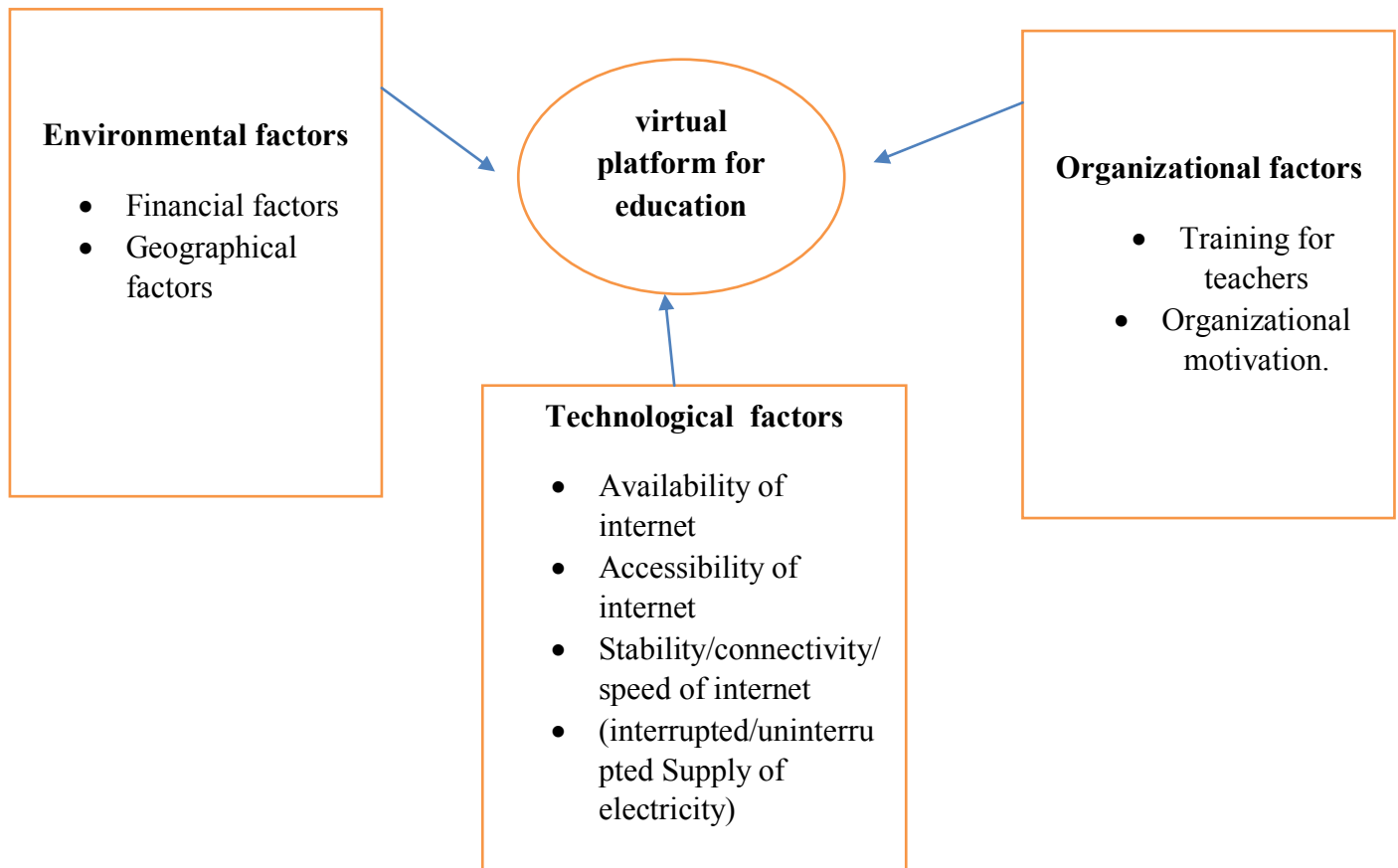
#### Specific objectives

1. To identify the opportunities that virtual learning created during COVID-19 lockdown among nursing teachers and nursing students.
2. To find out the challenges of virtual learning during COVID-19 lockdown among nursing teachers and nursing students.

#### Research questions/hypothesis

1. What are the opportunities that virtual learning has created?
2. What are the challenges of virtual learning?

#### Conceptual Framework



### Methodology:-

#### Research design:

Descriptive design was used for this study.

**Setting:**

Nursing colleges of Pokhara University (Nepal) was selected so that the findings of this study can actually be utilized to make this virtual learning a pleasant experience for both nursing teachers and students.

**Requirement of Respondents and Sample Size**

Nursing teachers and students of Pokhara University (Nepal) who were involved in virtual learning were selected as samples for the study. Total enumerative sampling technique was used with a non response rate of 10%. The sample size was 362.

**Inclusion criteria :**

Nursing teachers and nursing students of Pokhara University involved in virtual learning.

**Study variables :**

Opportunities and challenges of virtual learning.

**Data collection tools**

Self administered structured questionnaire was used to collect the data. Validity was maintained by consulting with the experts. Reliability of the tool was maintained by pre testing in 10% of samples. The tools were divided into three parts

1. Questions to determine the sociodemographic distribution of the respondents.
2. 5 point rating scale to assess the opportunities of virtual learning.
3. 5 point rating scale to assess the challenges of virtual learning.

Same questionnaire was used for both teachers and students. The questions (three to be specific) were only for students which has been mentioned in the questionnaire.

**Data collection procedure and data analysis:**

Nursing teachers and students of Pokhara University involved in virtual learning were identified. Written consent was taken from all the respondents via email (google form). Questionnaire was prepared as google forms and send to the respondents and deadline was given for submission of the questionnaire. Data was analyzed using descriptive statistics (frequency and percentage).

**Ethical Considerations**

Ethical approval for this study was obtained from the Nobel College, Kathmandu, Nepal. Written informed consent was obtained from the respondents via google forms. To ensure the confidentiality, all the identifying information was removed from all the record.

**Budget**

Self finance

**Results:-**

This sections deals with the analysis and interpretation of the data collected from the respondents. Data collected via google forms was extracted in Microsoft excel and then to SPSS version 20 and was analyzed using descriptive statistics.

**Sociodemographic information of the respondents. n=362**

Sociodemographic variables	Frequency (percentage)
Age	Mean age 22.78
Education	
a. Bachelor	329(90.8)
b. Masters	33(9.2)
Occupation	
a. Teacher	35(9.7)
b. student	327(90.3)

Family type a. nuclear b. joint c. extended	274(75.7) 86(23.8) 2(0.6)
Marital status a. married b. unmarried c. others	66(18.2) 294(81.2) 2(0.6)
Resident a. urban b. rural	314(86.7) 48(13.3)
Internet accessibility a. Wi-Fi b. mobile data	312(86.2) 50(13.8)

Table 1 gives an overview of the background characteristics of the respondents. The mean age of the respondents was 22.78 and the majority 327 (90.3%) were students. Majority of the respondents 329 (90.8%) were bachelor level and belonged to nuclear family 274 (75.7%). 294 (81.2%) respondents were unmarried and 314(86.7%) resided in urban area. 312 (86.2%) had access to Wi- Fi.

Code no.	Statement	Responses				
		SA	A	N	D	SD
B1	I feel it's an excellent opportunity for digital learning.	32 (8.8)	136(37.6)	172(47.5)	22(6.1)	0
B2	Helps students who lack confidence in social settings to present themselves through writing	22(6.1)	174(48.1)	126(34.8)	38(10.5)	2(0.6)
B3	Promotes self-learning.	62(17.1)	196(54.1)	78(21.5)	22(6.1)	4(1.1)
B4	Flexible timing is an added advantage.	54(14.9)	190(52.5)	96(26.5)	22(6.1)	
B5	Working/studying from home is an added advantage	60(16.6)	172(47.5)	86(23.8)	40(11)	4(1.1)
B6	Virtual classrooms are more comfortable than real classrooms	16(4.4)	80(22.1)	72(19.9)	156(43.1)	38(10.5)
B7	Recorded lectures have decreased my stress on classes being missed(only for students)	58(16)	190(52.5)	60(16.6)	22(6.1)	10(2.8)
B8	I can review classes as many time I want through recorded lectures(only for students)	72(19.9)	214(59.1)	26(7.2)	18(5)	6(1.7)
B9	Teachers can learn from students who are technically more literate making learning a two- way process	36(9.9)	188(51.9)	114(31.5)	22(6.1)	2(0.6)
B10	This is the best opportunity to evaluate students' creativity and critical thinking through their assignments, presentations, open-books exams	36(9.9)	146(40.3)	96(26.5)	72(19.9)	12(3.3)
B11	I felt that the quality of class discussion were high in the virtual class session.	20(5.5)	68(18.8)	110(30.4)	136(37.6)	28(7.7)
B12	It reduced my travel time to the campus to attend a face to face	92(25.4)	196(54.1)	52(14.4)	16(4.4)	6(1.7)

	class.					
B13	Great flexibility for the students and the ability to train thousands of people all over the globe at the same time.	68(18.8)	198(54.7)	74(20.4)	22(6.1)	0

**Table 2:-** opportunities of virtual learning.

Table 2 illustrates the responses towards opportunities of virtual learning. 37.6% of respondents agreed to the virtual learning being an excellent opportunity. Majority i.e 174(48.1%) participants agreed that it is helpful to the students who have low self-confidence to present their answers in social settings. Almost half 196 (54.1%) of the participants agreed that the virtual learning promotes self-learning . Majority 190 (52.5%) respondents agreed that flexible times and 172 (47.5%) agreed that working from the home setting as an added advantage. Maximum participants i.e. 156 (43.1%) disagreed that comfort and 136 (37.6%) disagreed that quality of discussion are more in real classroom. Furthermore, more than half of the participants 190 (52.5%) agreed that recorded lectures had decreased stress on being absent . 214 (59.1%) agreed that it helped in reviewing class and 196 (54.1%) agreed that virtual learning saved time to travel campus. Out of the total, 188 (51.9%) participants agreed that virtual learning is a two-way process,198 (54.7%) agreed that thousands of people can be trained globally at the same time and 146 (40.3%) agreed that it is also the best opportunity to evaluate student's creativity and critical thinking.

**Table 3:-** challenges of virtual learning.

Code no.	Statement	Response				
		SA	A	N	D	SD
C1	I find it difficult to concentrate when learning/teaching online	76(21)	136(37.6)	86(23.8)	58(16)	6(1.7)
C2	Lack of Face to Face Interaction makes it less effective.	88(24.3)	184(50.8)	58(16)	28(7.7)	4(1.1)
C3	I find it difficult to communicate effectively Online	52(14.4)	188(51.9)	74(20.4)	46(12.7)	2(8)
C4	I prefer more personal interaction.	54(14.9)	198(54.7)	78(21.5)	30(8.3)	2(0.6)
C5	I have the necessary skills for using an e-learning system.	18(5)	140(38.7)	170(47)	32(8.8)	2(0.6)
C6	I am able to search for information on the Internet.	64(17.7)	236(65.2)	40(11)	10(2.8)	12(3.3)
C7	No gesture, no body language, and delivering lectures sitting idly in a chair makes the teaching learning process unproductive.	68(18.8)	162(44.8)	82(22.7)	48(13.3)	2(0.6)
C8	Lack of two-way communication makes it difficult to analyze the effectiveness of the class.	98(27.1)	198(54.7)	50(13.8)	8(2.2)	8(2.2)
C9	I always have a reliable Internet access.	18(5)	60(16.6)	90(24.9)	116(32)	78(21.5)
C10	Unstable internet speed creates problem in smooth learning.	200(55.2)	126(34.8)	8(2.2)	4(1.1)	24(6.6)
C11	Studying/teaching a nursing degree online is not my preferred option and I can't wait to be back on campus.	128(35.4)	150(41.4)	68(18.8)	12(3.3)	4(1.1)
C12	I have to spend a significant (more than that in real classroom setting) amount of time in teaching/learning.	22(6.1)	112(30.9)	142(39.2)	70(19.3)	16(4.4)
C13	I have a strong support from my family members in e-learning in terms of providing conducive environment.	106(29.3)	178(49.2)	52(14.4)	22(6.1)	4(1.1)
C14	I can't attend all the classes as I cannot afford the mobile data	48(13.3)	86(23.8)	104(28.7)	110(30.4)	14(3.9)
C15	Virtual demonstration of nursing procedure is	166(45.9)	142(39.2)	50(13.8)	4(1.1)	0

	difficult to understand/teach.					
C16	I fear about my academic performance which would be evaluated based on attendance (only for students)	148(40.9)	134(37)	40(11)	4(1.1)	6(1.7)
C17	I am not confident to use the technology.	18(5)	66(18.2)	112(30.9)	138(38.1)	28(7.7)
C18	The most glaring being lack of opportunities for hands on learning in subject such as Biostatistics, Midwifery, Foundation of nursing.	104(28.7)	156(43.1)	100(27.6)	2(0.6)	0
C19	I cannot practice for practical subjects such as midwifery (only for students)	156(43.1)	132(36.5)	32(8.8)	6(1.7)	0
C20	i feel lack of motivation.	66(18.2)	120(33.1)	92(25.4)	78(21.5)	6(1.7)

Responses to the challenges of virtual learning are represented in table 3. Nearly half i.e. 136 (37.6%) of the participants agreed that virtual learning is difficult to concentrate and 188 (51.9%) agreed that it is difficult to communicate. 198 (54.7%) participants preferred personal interaction. Only 140(38.7%) agreed to having necessary skills for e learning. However, majority 236(65.2%) agreed that they are able to search information online, whereas 12 (3.3%) strongly disagreed to it. 162 (44.8%) of respondents agreed and 68(18.8%) strongly agreed to virtual learning being unproductive. 198 (54.7%) agreed that its difficult to analyze the effectiveness of class. 78 (21.5%) respondents strongly disagreed to having a reliable internet connection, whereas majority i.e. 200(55.2%) strongly agreed to having unstable internet. 128(35.4%) of respondents didn't prefer virtual learning as a preferred option. 112 (30.9%) agreed to have to spend a significant amount of time in teaching/learning. Majority 178(49.2%) agreed to having a strong support from family/friends for elearning, whereas 4(1.1%) strongly disagreed to it. 48(13.3%) strongly agreed that virtual learning is expensive for them as they have to buy mobile data. Majority i.e. 166(45.9%) strongly agreed that its difficult to understand the nursing procedures demonstrated virtually. Majority of the students feared about the attendance. Though majority 138 (38.1%) could confidently use technology, 18(5%) respondents were not confident in technology. 156 (43.1%) of respondents agreed that lack of hands on learning as hindrance. Majority 156(43.1%) of students strongly agreed to lack of practice for practical subjects. Majority 120 (33.1%) of respondents felt lack of motivation.

### Discussion:-

This section deals with the discussion of the results obtained after the analysis of the data. This study was conducted to find out the opportunities and challenges of virtual learning during the covid-19 lockdown. Data was collected from 362 (nonresponse rate of 10%) nursing students and teachers of Pokhara University who were involved in virtual learning.

### Characteristics of demographic variables:

Characteristics of the demographic variables described in terms of their frequency and percentage distribution of the respondents by age, education, occupation, marital status, family type, resident and internet accessibility.

The mean age of the respondents was 22.78 years and the majority were students and belonged to nuclear family 274 (75.7%). 294 (81.2%) respondents were unmarried and 314(86.7%) resided in urban area. 312 (86.2%) had access to Wi-Fi.

### Opportunities of virtual learning.

37.6% of respondents agreed to the virtual learning being an excellent opportunity. Majority i.e 174(48.1%) respondents agreed that it is helpful to the students who have low self-confidence to present their answers in social settings. 196 (54.1%) of the respondents agreed that the virtual learning promotes self-learning. Very few respondents disagreed that flexible times and working from the home setting being an added advantage. Majority of them responded that virtual learning is not comfortable and quality of discussion are not satisfactory. Furthermore, more than half of the participants 190 (52.5%) agreed that recorded lectures had decreased stress on being absent. 214 (59.1%) agreed that it helped in reviewing class and 196 (54.1%) agreed that virtual learning saved time to travel campus. Majority of respondents agreed that teachers and students can learn from each other in virtual learning and that thousands of people can be trained globally at the same time. They also agreed that it is also the best opportunity to evaluate student's creativity and critical thinking.

### Challenges of Virtual Learning

Majority of the respondents agreed that virtual learning is difficult to concentrate and communicate and majority preferred personal interaction. Only 140(38.7%) agreed to having necessary skills for e learning. However, majority of the respondents are able to search information online, whereas 12 (3.3%) strongly disagreed to it. Majority of the respondents found virtual learning to being unproductive and agreed that its difficult to analyze the effectiveness of class. Though majority of respondents had reliable internet connection, majority of them agreed to having unstable internet. 128(35.4%) of respondents didn't prefer virtual learning as a preferred option. Majority found it as time consuming. Few respondents did not have enough support from her family/friends for elearning. Virtual learning is expensive for some of the respondents as they have to buy mobile data. Majority strongly agreed that its difficult to understand the nursing procedures demonstrated virtually. Yuet Ming and colleagues have proposed three steps to teach nursing students about hand hygiene; plan tasks, select the resources and effective delivery. They also have emphasized that the students needs to be self disciplined and teachers need to provide appropriate guidelines to students in order to make virtual learning effective. This approach of teaching hand hygiene can be extended to teach other nursing skills as well.<sup>13</sup>In this study, majority of respondents have agreed to have felt lack of motivation and fear about the attendance. Though majority could confidently use technology, few respondents agreed that lack of hands on learning as hindrance. We need to take appropriate measures to make them comfortable with technology and also increase their motivation.

### Conclusion:-

Educational sector in Nepal, including nursing education has gone online during the COVID-19 Lockdown. This study was done to find out the opportunities and challenges of virtual learning. The results showed that majority of respondents see this virtual learning as a good opportunity as it promotes self learning. Flexible timing and working/studying from home during this pandemic has been an added advantage that virtual learning has brought. But unreliable and unstable internet, lack of face to face interaction has posed as a challenge. Practical subjects and learning nursing skills has also been difficult through virtual learning. Simulation softwares that would help to teach/learn nursing skills should be introduced to make virtual learning more effective. Motivating the students and teachers is also very important to ensure the effectiveness of virtual learning.

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