Perception of nursing students towards online learning during COVID-19 pandemic

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Abstract

Introduction: During the COVID-19 pandemic, many academic institutions in Nepal and the world turned to online learning. The present study aimed to explore nursing students' perceptions of online learning.

Method: A cross-sectional analytical study was conducted to identify the perception of nursing students towards online learning in the School of Nursing and Midwifery, Patan Academy of Health Sciences (PAHS), Lalitpur, Nepal during October 2020. A total enumerative sampling technique was used to collect data. Ethical approval was taken from the Institutional Review Committee (IRC) of PAHS. Data were collected using a self-developed structured questionnaire via Google form. The collected data were entered into SPSS version 16. Descriptive statistics (frequency, percentage, mean and standard division) and Chi-square test was used to analyze the data.

Result: Out of 348 nursing students, it was found that 186(53.4%) of the nursing students had positive perceptions and 162(46.6%) of the students had negative perceptions towards online learning during the COVID-19 pandemic. The perception was associated with the academic year, access to the internet, the need for use of mobile data, and academic level.

Conclusion: The overall perception of nursing students is not satisfactory towards online learning. The academic institution should plan the online learning giving the priorities on the factors associated with negative perception so that students can learn effectively through virtual.

Keywords: COVID-19, online learning, perception

Introduction

COVID-19 has affected the education system globally forcing the closure of educational institutions and Nepal is not an exception.[1] Such closure accelerated the development of an online learning environment for continuity of learning. Online learning is education that takes place over the internet and alternative method to physical learning.[2]. This method is not a new mode of delivery for developed countries however it is not familiar both for students and faculties in most developing countries.[3] The transition has forced the faculties and students to maximize their existing technological capability.

Students' perception regarding online learning was found positive and useful in improving their understanding, independence, self-discipline, motivation to learn, and interactions with the teacher[4] and perceived that course design, learner motivation, time management, and comfort with online technologies have a positive impact on the success of online learning.[5]

A study conducted in India among 77 medical students showed that 75(95%) of them reflected online classes were relevant to their learning needs and clinical practice.[6] In Pakistan, students did not prefer online learning over face-to-face teaching were 296(77%) students had a negative perception.[7] Likewise, Indonesia had less preference for online learning than face-to-face learning.[8]

Students' perception is vital for introduction of online teaching-learning to keep the transmission of COVID-19 in check. This study aimed to explore the nursing students' perception of online learning during the pandemic.

Method

A cross-sectional analytical study was conducted to identify the perceptions and examine the factors associated with online learning among nursing students (Proficiency Certificate Level, Bachelor of Nursing Sciences, Bachelor of Science in nursing and Master of Nursing) of Patan Academy of Health Sciences (PAHS), School of Nursing and Midwifery, Nepal in October 2020. The total enumerative sampling technique was used to collect data.

Data was collected after the approval from Institutional Review Committee, PAHS (Ref: nrs2009221449), Nepal. A self-developed structured questionnaire was used in Google form (link) to collect the data. Content validity and face validity were assured before distribution of the questionnaire via a google form. The instruments used in this study are composed of two parts. Part I: was related to a structured questionnaire on socio-demographic information (2 items), academic information (2 items), computer and internet-related information (5 items). Part II: Perceptions towards online learning questions representing various areas (social presence, social interaction, collaborative learning, satisfaction, and online learning experience). It included 22 statements using five points Likert Scale (1= strongly disagree, 2= disagree, 3= uncertain, 4= agree, 5= strongly agree).[9] The score ranged from 22 to 110. The level of perception was computed by using the mean score and was categorized as a score above the mean= Positive perception and a score below the mean score= Negative perception.[7]

All the coordinators were approached for the students' email addresses. The information regarding the study was provided through Google meet by the principal investigator and co-investigators. The information sheet was provided in the Google form before the consent form. Students were informed about the method of filling the Google form. The approximate time to fill the questionnaire was 15-20 minutes. Students completed the Google form individually and requested to send it back within 2 w. A reminder e-mail was sent at the end of 1 w and 1 d before the end of the second week. The submission of the form was taken as consent and voluntary participation in the study. The data used in this study were anonymous to respect the privacy of the participants. Also, it was assured that there will not be any harm in their academic grade according to the response they provide.

The data were checked for completeness. Data were analyzed using Statistical Package of Social Science (SPSS) software version 16. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to assess socio-demographic information and other variables, and identify the level of perception of nursing students.

Chi-square test was used at a significance level of 5% to examine the association between socio-demographic information and perception of nursing students towards online learning during the COVID-19 pandemic.

Result

In this present study, out of 428 nursing students, 348 participated which accounts 81% response rate. Among the 348 respondents, more than half 168(53.4%) respondents had positive perceptions and 162(46.5%) of the respondent had negative perceptions towards online learning during the Covid-19 pandemic, Figure 1.
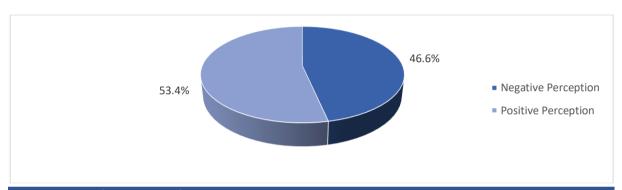

Figure 1. Level of perception of nursing students towards online learning

About 95(27.3%) were from the Proficiency Certificate Level, 232(66.7%) were from Bachelor and 6% were from Master's degree. Regarding assess of devices and the internet, about 109(31.3%) did not have their computer and 154(44%) had to use mobile data for the online class. Similarly, 300(86%) respondents had internet access and 104(30%) respondents responded that they did not have experience of using a computer before this online class, Table1. When we analyze the factors associated with perception, we found that academic level, academic year, internet accessibility, use of mobile data were significant factors. It was found that Proficiency Certificate Level (PCL) students had a higher positive perception than master level students and first-year students had a higher positive perception towards online learning. Similarly, those who had internet access and those who did not require using mobile data had higher positive perceptions. However, having my computer and previous experience

of using a computer before online class did not show significant association, Table 1.

We further analyzed each domain score and found that students had a higher score on satisfaction (mean=21.17±3.62) followed by collaborative learning (mean=14.19±2.12), online learning experience (mean=14.08±2.57), social interaction (mean=13.09±2.90), and the lower score was on the social presence (mean=11.31±1.80), Table 2.

Regarding student's perception towards online learning, about 263(75%) students agreed and strongly agreed that they had felt comfortable participating in online classes. However, 238(68%) students strongly disagreed, disagreed, and were neutral that online classes are an excellent means for social interaction. Similarly, 220(63%) students strongly disagreed and disagreed that online learning environments are better than face-to-face learning environments. In collaborative

learning, 285(82%) students agreed and strongly agreed that they felt a part of learning in their class. Similarly, 265(76%) students strongly agreed and agreed that they were satisfied to learn in the online classes. The majority of 289(83%) students had experienced that the interruption of internet and electricity halted the class very much, Table 3.

Table 1. Association between socio-demographic variables and perception level of nursing students towards online learning, N=348

Variables	Perception Level				Chi-square value	p value
	Positive		Negative			
	N	%	N	%		
Academic Level						
PCL	62	65.3	33	34.7		
BSN	70	52.2	64	47.8	9.54	0.02*
BNS	42	42.9	56	57.1		
MN	12	57.1	9	42.9		
Academic years						
First	73	69.5	32	30.5		
Second	51	46.8	58	53.2	15.95	0.001*
Third	45	47.9	49	52.1		
Fourth	17	42.5	23	57.5		
Internet accessibility						
Yes	168	56	132	44	5.59	0.01*
No	18	37.5	30	62.5		
Use of mobile data						
Yes	67	43.5	87	56.5	10.97	0.001*
No	119	61.3	75	38.7		
Having own computer						
Yes	131	54.8	108	45.2	0.57	0.45
No	55	50.5	54	49.5		
Experience in using computer						
Yes	126	51.4	119	48.6	1.35	0.24
No	60	58.3	43	41.7		

Note: *Significant at 5% level of significance

Table 2. Mean and Standard deviation of the domain of perception of nursing students towards online learning, N=348

Domain	Mean	Standard deviation
Social presence	11.31	1.80
Social interaction	13.09	2.90
Collaborative learning	14.19	2.12
Satisfaction	21.27	3.62
Online learning experience	14.08	2.57

Table 3. Perception of nursing students towards online learning, N= 348

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Social presence					
1) I felt comfortable introducing myself in online classes.	1(0.3%)	19(5.5%)	76(21.8%)	198(56.9%)	54(15.5%)
2) I felt comfortable participating in online classes.	2(0.6%)	16(4.6%)	67(19.3%)	207(59.5%)	56(16.1%)
3) I felt that my point of view was acknowledged in the discussion.	7(2.0%)	26(7.5%)	80(23%)	207(59.5%)	28(8%)
2. Social interaction					
1) Online classes are an excellent means for social interaction.	21(6%)	85(24.4%)	132(37.9%)	97(27.9%)	13(3.7%)
2) I felt comfortable interacting with other students in the online class.	11(3.2%)	62(17.8%)	105(30.2%)	155(44.5%)	15(4.3%)
3) The amount of interaction with the teacher in the class was appropriate.	12(3.4%)	47(13.5%)	103(29.6%)	164(47.1%)	22(6.3%)
4) The quality of interaction with the teacher in class was appropriate.	11(3.2%)	46(13.2%)	98(28.2%)	170(48.9%)	23(6.6%)
3. Collaborative learning					
1) I felt that I am a part of learning in my class.	2(0.6%)	16(4.6%)	45(12.9%)	241(69.3%)	44(12.6%)
2) I actively exchanged ideas in my online classes.	4(1.1%)	42(12.1%)	98(28.2%)	186(53.4%)	18(5.2%)
3) I was able to develop problem-solving skills.	5(1.4%)	42(12.1%)	119(34.2%)	167(48%)	15(4.3%)
4) Group discussion in my online class was time-consuming.	8(2.3%)	73(21%)	89(25.6%)	130(37.4%)	48(13.8%)
4. Satisfaction					
1) I was able to learn in online classes.	4(1.1%)	14(4%)	65(18.7%)	232(66.7%)	33(9.5%)
2) I was stimulated to do additional reading on the topic discussed in the online class.	6(1.7%)	39(11.2%)	88(25.3%)	199(57.2%)	16(4.6%)
3) Discussion assisted me in understanding other points of view.	3(0.9%)	19(5.5%)	87(25%)	212(60.9%)	27(7.8%)
4) The online classes were a useful learning experience.	10(2.9%)	26(7.5%)	75(21.6%)	199(57.2%)	38(10.9%)
5) I am satisfied with my learning.	5(1.4%)	44(12.6%)	124(35.6%)	160(46%)	15(4.3%)
6) Overall, this online class met my learning expectations.	12(3.4%)	58(16.7%)	128(36.8%)	142(40.8%)	8(2.3%)
5. Online learning experience					
1) I put a great deal of effort to learn online to participate in class.	3(0.9%)	50(14.4%)	90(25.9%)	162(46.6%)	43(12.4%)
2) Taking online classes is a pleasant way to communicate with others.	8(2.3%)	69(19.8%)	123(35.3%)	132(37.9%)	16(4.6%)
3) I could easily express myself in online classes.	7(2%)	62(17.8%)	113(32.5%)	154(44.3%)	12(3.4%)
4) Online learning environments are better than face-to-face learning environments.	80(23%)	140(40.2%)	93(26.7%)	31(8.9%)	4(1.1%)
5) Interruption of internet and electricity halted class very much.	21(6%)	14(4%)	24(6.9%)	91(26.1%)	198(56.9%)

Discussion

In the present study, 186(53.4%) students had a positive perception towards online learning which was initiated during the COVID-19 pandemic situation. A study done in Poland among 804 respondents during the COVID-19 pandemic showed 589(73%) students had a positive perception regarding online learning[10], in Sri Lanka among 130 students during the COVID-19 pandemic showed 104(80%) students had a positive perception towards online learning.[11] Another study done in Nepal among 513 students during the COVID-19 pandemic showed 396(77%) students had a positive perception of online learning.[12] A study conducted in Egypt, among 350 students before the COVID-19 pandemic showed that 327(93.4%) students had satisfaction towards online learning[13], Though, positive perception of nursing students in this study is not as high as other studies conducted in different countries, it might be alternative teaching-learning methods to continue online learning as a part of the nursing school teaching-learning curriculum beyond the COVID-19 pandemic situation.

However, the present study also shows that 162(46.6%) had a negative perception of online learning during the COVID-19 pandemic. Similar findings from Kaski, Nepal among 133 students showed that 72(54.1%)[14], in Pakistan 296(77%)[7] and in India 273(62.2%) students had negative perception towards online learning.[15] All these studies were conducted during the COVID-19 pandemic period. Thus, although online learning was advantageous, flexible, and convenient during this pandemic situation, many students were not comfortable with it. However, learners' satisfaction is important for the positive perception of online learning.

In this study, the perception of nursing students towards online learning was associated with the academic level, academic year, internet accessibility, use of mobile data. This study is consistent with the study conducted in Chitwan, and Lumbini, Nepal where internet facilities and level of academics were associated with online learning.[16,17]

In this present study, the mean and SD of the nursing students' perception towards online learning on social presence was 11.31±1.80, social interaction 13.09±2.90, and satisfaction 21.27±3.62. This result is in contrast with the study done in Indonesia among 107 undergraduate students were mean and SD on social presence 31.51±5.55, social interaction 22.77±4.28, and satisfaction 41.63±7.62 on online learning.[3] However, the study conducted in Indonesia was before the COVID pandemic situation. Perception of online learning during pandemic situations might be different than online learning in a normal situation.

In this study, 239(68.6%) students had their computer whereas 109(31%) did not have their own computer. A similar finding from Libya reported 2526(75.7%) students had own laptop.[18] This result is different from the study conducted in India where 170(43.7%) students had used laptops for the online classes.[15] About 70% of students had their own computer for an online class in this study suggests that the continuation of online classes beyond the pandemic situation might be possible.

In this study, 154(44%) nursing students had to use mobile data for the online classes. This result is different from the study conducted in Chitwan, Nepal where 62(14.3%) students used data package.[16]

This study presents 300(86%) nursing students who had internet access to run online classes. Those students who did not have access to the internet for online classes used mobile data and some of them used cyber internet for the class. This result is similar to the study conducted in Chitwan, Nepal that 372(85.5%) students had internet access.[16]

In the current study, about 90% of students showed neutral to strongly disagree response to the statement "online learning environments are better than face to face

learning environment", Table 4. The disagreement to this statement among nursing students in Kaski, Nepal was 70%[14] which shows students in our study were comfortable in traditional environment.

In this study 199(57.2%) and 38(10.9%) of the students agreed and strongly agreed with the statement "online classes were useful learning experience" which is in contrast with the study done in Kaski, Nepal among 133 students in which 21(15.8%) and only 1(0.8%) students agreed and strongly agreed.[14] Likewise, in another study conducted in Kathmandu, Nepal among 318 students, 143(44.9%) and 8(2.5%) agreed and strongly agreed on the statement "online classes were useful learning experience", respectively.[19]

In this study, 289(83%) of the students agreed that the interruption of the internet and electricity halted the class. Similarly, 252(72%) students from Egypt agreed that internet disrupted online classes.[12] Another study in Nepal showed that 640(63.2%) students experienced disturbance due to electricity problems.[20] The effectiveness of online teaching is influenced by the quality of internet service and regular electricity supply. The academic institution should consider availability of internet, electricity, personal device (computer), and students' knowledge to use devices for online classes.

Limitations of the study may be an online survey and possible response bias. Participants were from a nursing college in Kathmandu valley with facilities different than other parts of the country, hence the findings may not be applicable for all the students.

Conclusion

Based on the findings of the study, about half of the nursing students had a positive perception of online learning during the COVID-19 pandemic. The perception was associated with the year of education, internet access, the need of using mobile data, and academic level.

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Author Contribution
Concept, design, planning: BRK, BP, KMP; Data collection and analysis: BRK, BP, KMP; Draft manuscript: BRK, BP, SS; Revision of draft, Final manuscript and Accountability: All.

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Supplement

Questionnaire

Part I: Please tick on appropriate response that best describes you.

1. Area of current residence
   a. Province 1   b. Province 2   c. Bagmati Province   d. Gandaki Province
   e. Province 5   f. Karnali Province   g. Sudurpaschim Province

2. In which district do you reside currently?.......................

3. Academic Level
   a. PCL   b. BSN   c. BNS   d. MN

4. Current academic year
   a. First   b. Second   c. Third   d. Fourth

5. What do you use for your online classes? you can choose more than one option.
   a. Mobile phone   b. Computer

6. Are you using your own computer/laptop?
   a. Yes   b. No

7. Do you have internet access at your home?

a. Yes   b. No

8. Do you use mobile data for online classes?
   a. Yes   b. No

9. Have you been using computer before starting online classes?
   a. Yes   b. No

Part II: Perception towards online learning: There is no right and wrong answer for each question. Please indicate your best possible response on it.

Statement	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
Social presence					
I felt comfortable introducing myself in online classes.					
I felt comfortable participating in online classes.					
I felt that my point of view was acknowledged in the discussion.					
Social interaction					
Online classes are an excellent means for social interaction.					
I felt comfortable interacting with other students in the online class.					
The amount of interaction with the teacher in the class was appropriate.					
The quality of interaction with teacher in the class was appropriate.					
Collaborative learning					
I felt that I am a part of learning in my class.					
I actively exchanged ideas in my online classes.					
I was able to develop problem solving skills.					
Group discussion in my online class was time consuming.					
Satisfaction					
I was able to learn in the online class.					
I was stimulated to do additional reading on topic discussed in the online class.					
Discussion assisted me in understanding other points of view.					
The online classes were useful learning experience.					
I am satisfied with my learning.					
Overall, this online class met my learning expectations.					
Online learning experience					
I put a great deal of effort to learn online in order to participate in the class.					
Taking online classes is a pleasant way to communicate with others.					
I could easily express myself in online classes.					
Online learning environment are better than face to face learning environment.					
The interruption of internet and electricity halted the class very much.					