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Nursing Students' Experience and Perception towards Online Education during Covid-19 Pandemic in Nepal

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ABSTRACT

Background: The COVID-19 pandemic forced educational institutions worldwide to adapt swiftly. This study explored nursing students' experiences and perceptions towards online education during the pandemic in Nepal.

Method: Using a cross-sectional descriptive design, data were collected from 416 nursing students across the country using nonprobability convenient sampling technique via a google form questionnaire. Ethical approval was obtained from NHRC and for the data analysis, descriptive analysis was done by using appropriate statistical tools and SPSS version 20.

Result: Key findings on online class experience, 93.5% participated in live online classes, 62.3% preferred a blend of subjective and objective evaluation methods and 58.9% favored pre- and post-classroom assignments. Similarly, regarding benefits of online education 25.0% strongly agreed that technical skills (email, internet, apps) improved, 53.1% recognized teachers' facilitative role in student learning and 45.2% believed online classes reduced psychological stress. There were challenges on theory classes and clinical practicum where 38.8% acknowledged skill gaps for effective online teaching and 44.0% strongly agreed on curriculum redesign respectively.

Conclusion: Online learning is crucial for a variety of reasons, including time savings and learning flexibility. Despite these, constrained technology infrastructures, connectivity issues and clinical practicum continued to be obstacles. Effective online education requires increased internet access, faculty and student digital training, and the support of regulatory authorities.

Key words: online education, nursing students, experience, perception, COVID-19, pandemic.

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INTRODUCTION

The global COVID-19 pandemic led to widespread school closures, impacting over 90% of students globally. In Nepal, the government introduced a digital education system during the lockdown. Initially, only schools in China and a few affected nations closed in February 2020. The shift to online learning posed challenges, including maintaining communication and social presence.[1] Schools in over 190 countries closed, affecting 1.57 billion students. Governments experimented with remote learning through platforms, television, and radio. UNESCO data shows 100 countries haven't set reopening dates, 65 planned partial or full reopening, and 32 concluded the academic year online.[2] E-learning became crucial for healthcare education during the lockdown. With schools closed and public gatherings restricted, parents worried about their children's education.[3] The pandemic disrupted nursing education, limiting face-to-face learning and clinical experiences.[4] Over two-thirds of academic leaders viewed online learning as vital for long-term strategy. Challenges included physical separation, timely communication, student perception, and self-regulated learning skills.[5-7] To ensure continuity, MOEST, UNESCO, and ACORAB, Nepal launched a distance learning campaign using internet, TV, and FM radio.[8]

METHODS

A cross-sectional descriptive study design was used to identify the experiences and perceptions of nursing students at a specific point in time,[9] useful for assessing prevalence. The study population was Bachelor and Master's nursing students studying their classes online (at least 1 month) from all seven provinces of Nepal following non-probability convenience sampling which was conducted from August 1 to 31, 2020. Ethical clearance was obtained from the Ethical Review Board

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of Nepal Health Research Council (Ref. No-499/2020). Written consent was acquired electronically. Participants could withdraw at any time without repercussions, with anonymity and confidentiality maintained through coding and secure storage of data. The sample size of 416 was calculated using the Cochran's formula, accounting for a 95% confidence level, 50% prevalence rate, 5% precision, and 8% non-response rate. Data was collected via a semi-structured questionnaire including 5 point likert scale (Google form) pretested with 10% of the sample. Instrument content validity was established by extensive literature review, consulting with co-authors, statistician, and subject experts. Data were transferred from Excel to SPSS version 20 for analysis using descriptive statistics (frequency, percentage, mean, range, standard deviation).

RESULTS

Regarding the socio-demographi characteristics, all the respondents (100.0%) were female. Similarly, more than half (58.7%) belonged to 21-25 years age group (Mean ± SD =23.35 ± 3.796), higher proportion (47.4%) were Bachelors of Science in Nursing (B.Sc. N) and one third (33.2%) were represented from Bagmati Province (Table 1).

Table 1. Socio-demographic characteristics of the respondents. (n=416)

Characteristics	Frequency (%)
Age (in completed years)	
≤ 20	89 (21.4)
21- 25	244(58.7)
>26	83(20.0)
(Mean ± SD= 23.35± 3.796)	
Level of education	
Bachelor of Nursing Science (B.N.S.)	182(43.8)
Bachelor of Science in Nursing (B.Sc. N)	197(47.4)
Master of Nursing (M.N.)	20(4.8)
Master of Science in Nursing (M.Sc.N)	17(4.1)
Current living (Province)	
Koshi	112(26.9)
Madesh Pradesh	28(6.7)
Bagmati	138(33.2)
Gandaki	80(19.2)
Lumbini	36(8.7)
Karnali	5(1.2)
Sudur Paschim	17(4.1)

Regarding online education, only one third of the respondents (36.3%) were using institutional licensed software, regarding devices and apps, most of respondents were using mobile phone (88.5%), Broadband / Wi-Fi (80.5%), Zoom Apps (95.0%) and social media apps like Messenger/Viber (90.9%) (Table 2).

Table 2. Physical set up (preparedness status) for online education. (n=416)

Variables	Frequency (%)
Use of Institutional Licensed Software for online	
Yes	151(63.7)
No	265(36.3)
Device used (Multiple Response)	
Laptop	301(72.4)
Mobile	368(88.5)
Tablet	27(6.5)
Desktop	10(2.4)
Medium of communication (Multiple Response)	
Mobile Data Pack	219(52.6)
Broad band/Wi-Fi	335(80.5)
ADSL	53(12.7)
APPs used for class (Multiple Response)	
Zoom Apps	395(95.0)
Google meet/Classroom	30(7.2)
Microsoft team	69(16.6)
Mode of connection with teacher(Multiple Response)	
Posting in University/ Institute website	26(6.3)
Instant messages/ Phone calls	101(24.3)
E-mail	162(38.9)
Social media apps like messenger/viber/ WhatsApp, etc.	378(90.9)

Table 3 shows that regarding the past experience about online education, the majority (81.2%) of the respondents had not any experience of online education before COVID-19 pandemic. Concerning the teaching learning activities, respondents had experienced live online class (93.5%). Moreover, respondents had preferred both subjective and objectives of evaluation (62.3%); and both pre- and post-classroom assignment (58.9%).

Table 4 shows the most important benefit perceived by student about online class is enhancement of technical skills followed by convenience in travel and cost. However, students hardly believe that online class can help in access or networking with experts followed by the belief that "Teaching learning activities are straightforward, easy and convenience in online plat-

Table 3. Respondents' experience of teaching learning Activities during online class. (n=416)	
Variables	**Frequency (%)**
Experiences of online education before COVID-19	
No	338(81.2)
Yes	78(18.8)
Method of interaction(Multiple Response)	
Live online Class	389(93.5)
Using Learning Management System (Like Moodle)	47(11.3)
Recorded Class video	46(11.1)
e-Learning Packages	19(4.6)
Mobile Learning	16(3.8)
Teaching learning material(Multiple Response)	
Sufficient reading materials (hands out) uploaded at students' email	311(74.8)
Video Recorded classes that is uploaded at students' email	65(15.6)
Handouts uploaded in Google classroom	32(7.7)
Handouts uploaded in Microsoft Teams	30(7.2)
Type of online assessment	
Both	259(62.3)
Objective	113(27.2)
Subjective	44(10.6)
Way of online assessment (Multiple Response)	
Polling questions provided in chat box during the session	107(25.7)
Mini Quiz session	133(32.0)
Pre and post classroom assignment	245(58.9)

learn at their own pace. Nevertheless, students merely believe that through online mode teachers are able to strengthen their involvement and cooperation with parents/guardians. They also think that with online forms of teaching teachers would barely increase their pedagogical autonomy (Table 5).

The main obstacle to properly executing the online course is the lack of technological resources, such as network connectivity and data storage. The second most difficult thing to do when implementing an online teaching and learning mode is making sure that energy and internet facilities are available. The least significant obstacles to adopting an online course are, however, parental and student aversion to online learning and the possibility of it negatively influencing both students and teachers emotional well-being (Table 6). Students strongly believed that "it is safer to postpone clinical learning activities till situations normalize than practicing in a simulated environment." However, they have strong doubts on the argument that "virtual clinical simulation can provide similar skills as in real world scenarios" (Table 7).

Table 4. Respondents' perception regarding benefits of online education. (n=416)						
Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Mean (SD)**
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	
Technical skills (email/internet/ apps) is increased since attending online classes	29(7.0)	37(8.9)	60(14.4)	186(44.7)	104(25.0)	3.72(1.14)
Travel and cost convenient	36(8.7)	56(13.5)	102(24.5)	136(32.7)	86(20.7)	3.43(1.20)
Automated record system is helpful	24(5.8)	58(13.9)	114(27.4)	162(38.9)	58(13.9)	3.41(1.07)
Time convenient/ Open scheduling	31(7.5)	48(11.5)	122(29.3)	177(42.5)	38(9.1)	3.34(1.04)
Class from home is better	37(8.9)	48(11.5)	134(32.2)	131(31.5)	66(15.9)	3.34(1.14)
Innovative Learning Approach with Sharing of teaching learning materials	19(4.6)	60(14.4)	137(32.9)	178(42.8)	22(5.3)	3.30(0.94)
Teaching learning activities are straightforward, easy and convenience in online platforms	26 (6.3)	63(15.1)	156(37.5)	149(35.8)	22(5.3)	3.19(0.97)
Access/ Networking to Expertise	28(6.7)	70(16.8)	155(37.3)	142(34.1)	21(5.0)	3.14(0.98)
Overall mean (SD)	3.36(1.06)					

Note: the statements are ranked based on Mean and arranged from most important to least important.

forms". Students perceived that the most important benefit of online class to their teacher (instructor) is helpful is managing technologies and other innovative advancement followed by chance for the teacher to act as a facilitator and helping students to manage and to

DISCUSSION

In this study, all respondents (100.0%) were female, with more than half (58.7%) falling into the 21-25 years age group (mean ± SD = 23.35 ± 3.796). A similar study conducted in South Korea also found a majority of female

Table 5. Benefit perceived by students for their instructor from online class. (n=416)						
Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Mean (SD)**
	f(%)	**f(%)**	**f(%)**	**f(%)**	**f(%)**	
Help in management of technologies and other innovations	22(5.3)	40(9.6)	99(23.8)	196(47.1)	59(14.2)	3.55(1.021)
Helps teacher to act as a facilitator helping students to manage their own learning	25(6.0)	32(7.7)	98 (23.6)	221(53.1)	40(9.6)	3.53(.979)
Re-establish connection between teachers and students	31(7.5)	29(7.0)	103(24.8)	202(48.6)	51(12.3)	3.51(1.041)
Reduce psychological stress by continuing the involvement through teaching/learning	27(6.5)	56(13.5)	101(24.3)	188(45.2)	44(10.6)	3.40(1.055)
Increases in pedagogical autonomy of teachers	16(3.8)	35(8.4)	170(40.9)	170(40.9)	25(6.0)	3.37(.868)
Strengthen involvement and cooperation with parents/ guardian	42(10.1)	106(25.5)	118(28.4)	124(29.8)	26(6.3)	2.97(1.099)
Overall mean (SD)	3.38(1.013)					

Note: the statements are ranked based on Mean and arranged from most important to least important.

Table 6. Challenges perceived by students on implementing the online class. (n=416)						
Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Mean (SD)**
	f (%)	**f (%)**	**f (%)**	**f(%)**	**f(%)**	
Availability of existing technology is insufficient (in terms of storage, connectivity, etc	25(6.0)	19(4.6)	67(16.1)	167(40.1)	138(33.2)	3.90(1.100)
Availability of internet facilities and electricity	28(6.7)	45(10.8)	59(14.2)	123(29.6)	161(38.7)	3.83(1.241)
There may be noises (disturbances) while going online from home	27(6.5)	32(7.7)	75(18.0)	147(35.3)	135(32.5)	3.80(1.165)
Teachers or students may lack of skills to run the online classes effectively	11(2.6)	68(16.3)	73(17.5)	203(48.8)	61(14.7)	3.56(1.013)
Teachers and students might be resistant to changes	14(3.4)	52(12.5)	94(22.6)	200(48.1)	56(13.5)	3.56(.985)
Both teachers and students' emotional health may be affected	31(7.5)	97(23.3)	112(26.9)	137(32.9)	39(9.4)	3.13(1.105)
Parents/guardian may resist for online education	40(9.6)	91(21.9)	135(32.5)	111(26.7)	39(9.4)	3.04(1.116)
Overall mean (SD)	3.55(1.11)					

Note: the statements are ranked based on Mean and arranged from most important to least important.

Table 7. Perception of students for manage clinical courses and placement due to online mode. (n=416)						
Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Mean (SD)**
	f(%)	**f(%)**	**f(%)**	**f(%)**	**f(%)**	**f(%)**
It is safer to postpone clinical learning activities till situations normalize than practicing in a simulated environment	25(6.0)	31(7.5)	61(14.7)	116(27.9)	183(44.0)	3.96(1.19)
Virtual simulation covers clinical placement of students	92(22.1)	137(32.9)	89(21.4)	77(18.5)	21(5.0)	2.51(1.17)
It is possible to give both theoretical and practical/ clinical courses exam virtually	136(32.7)	147(35.3)	62(14.9)	51(12.3)	20(4.8)	2.21(1.17)
Virtual clinical simulation can provide similar skills as in real world scenarios	139(33.4)	169(40.6)	57(13.7)	38(9.1)	13(3.1)	2.08(1.06)
Overall mean	2.69(1.15)					

Note: the statements are ranked based on Mean and arranged from most important to least important.

respondents, with an average age of 21.70 years.[10] Additionally, 47.4% of participants held a Bachelor of Science in Nursing (B.Sc. N), and one-third (33.2%) were from the Bagmati Province. Regarding online education, only one-third of respondents (36.3%) reported using institutional licensed software. This finding aligns with a study among allied health science students in Nepal, which found that over half (53.9%) did not use institutional license software for online classes. [10] In terms of devices and applications, the study found that most respondents

used mobile phones (88.5%), broadband/Wi-Fi (80.5%), Zoom apps (95.0%), and social media apps like Messenger/Viber (90.9%). These findings align with a study conducted at Kathmandu University, Nepal, which reported that the majority (92.5%) of respondents used broadband Wi-Fi, and Zoom was the preferred application for online education among 75.6% of participants.[11] In terms of training experience related to online education, the majority (81.2%) of respondents had not received any prior training or experience with online education before the COVID-19 pandemic. This finding aligns with a study conducted in Egypt, which reported that 91% of nursing students did not receive any training on e-learning.[12] Concerning the teaching learning activities, respondents (93.5%), had experienced live online class which is similar to the study which reported that there was a good opinion of online learning among most students. Learning interest, attention, and striking a balance between social and personal lives were all impacted by their perceptions.[13] The study findings yield that students involvement for both subjective and objective type of evaluation (62.3%); and both pre- and post-classroom assignment (58.9%) which is similar to study findings where 60 % of the respondents wished to attend online exams and around 70 % of the respondents preferred objective mode of examination rather than descriptive examination.[1] The results of this survey show that over two-thirds of respondents (45% agreed, 25% strongly agreed) thought that taking lessons online would improve their technological abilities (email, internet, applications). This is in accordance with research which discovered that after engaging in online learning during the COVID-19 epidemic, students reported notable gains in their digital literacy. The need to use a variety of online platforms and tools—which aren't always as widely used in traditional classroom settings—can be credited with improving technical abilities.[14] However, different research revealed different results, showing that a sizable percentage of students felt overpowered by the technological demands of online learning, suggesting that the shift to digital platforms did not uniformly enhance technical skills. This contrast highlights the variability in students' experiences with online education, potentially influenced by factors such as prior digital proficiency, the quality of online platforms, and the support provided by educational institutions.[15] Of those surveyed, 42.5% said that having flexible hours and a schedule was a good thing about online learning, while 29.3% had no opinion. These results are consistent with which highlighted the flexibility of online learning as a key benefit that enables students to manage their personal and professional obligations in addition to their academic obligations. Because of its adaptability to different study schedules, online education is available to students with a range of time limitations.[16] In contrast, research suggested that the absence of set timetables in online learning environments might cause students to procrastinate and have poor time management skills, which will lower the process' overall efficacy. This disparity emphasizes how crucial time management and self-control are to optimizing the advantages of online learning.[17] Additionally, 32.2 percent of respondents were undecided about the advantages of taking lessons from home, although an equal number agreed that it is preferable. This result is consistent with which discovered that students valued the convenience and shorter commuting times that came with learning from home. For many kids, the home environment might offer a comfortable and familiar setting that could improve their learning experience.[18] On the other hand, another research emphasized the difficulties associated with learning from home, such as interruptions, a lack of a designated study area, and feelings of loneliness, all of which can have a detrimental effect on students' academic performance and engagement. This implies that although there are benefits to learning from home, it also needs a space that encourages concentration and reduces distractions.[19] The study revealed that 35.8% of respondents agreed that teaching and learning activities are easy and convenient through online platforms. This perception consistent with study which emphasized the flexibility and accessibility of online learning, allowing students to engage with course materials at their own pace and convenience.[16] Regarding the benefits for instructors, nearly half of the respondents (50%) agreed that online education helps reestablish connections between teachers and students. This finding is supported by the study which highlighted that online teaching platforms provide diverse tools for interaction, such as discussion forums, live chats, and

video conferencing, fostering a sense of community and connection in the virtual classroom.[20] The study identifies several difficulties respondents had when pursuing online learning. A significant number (40.1% agreed, 33.2% strongly agreed) said that current technology is inadequate, especially in terms of storage and communication. This is in accordance with the research which pointed out that a key obstacle to successful online education, especially in poor nations, is a lack of suitable technology infrastructure.[21] Similarly, more than half of the respondents (53%) experienced disturbances while attending online classes from home. This aligns with the study which reported that distractions and a lack of a conducive learning environment at home are common issues in remote learning. Almost half of the respondents (48.8%) said that instructors and students might not have the requisite knowledge to manage online courses successfully. The study emphasized the requirement for digital literacy training for both instructors and students to increase the efficacy of online education, supports this conclusion.[22] Most respondents (27.9% agreed, 44.0% strongly agreed) believed it is safer to postpone clinical learning activities until situations normalize, rather than practicing in a simulated environment. This view is corroborated by another study which emphasized that while virtual simulations can be beneficial, they cannot fully replace the hands-on experience gained in real clinical settings.[23] On the other hand, just a little portion (18.5% agreed, 5.0% strongly agreed) thought that clinical placements were effectively addressed by virtual simulation. Comparably, the majority disapproved (32.7%) or strongly disagreed (35.3%) that theoretical and practical/clinical tests could be administered remotely. This is in contrast to study findings, which suggested that virtual evaluations can be a workable substitute in exceptional situations like a pandemic if they are well designed and implemented.[24] Finally, very few respondents (9.1% agreed, 3.1% strongly agreed) felt that virtual clinical simulations can provide skills comparable to real-world scenarios. This is supported by the study which found that while virtual simulations are valuable for certain skills, they fall short in replicating the complexity and variability of real clinical experiences.[25]

CONCLUSIONS

Based on the findings, it is concluded that most nursing students perceive online classes as a crucial mode of teaching and learning during difficult circumstances like the COVID-19 pandemic. They appreciate the flexibility of being able to learn from anywhere at any time, which has kept them connected to their university and studies while familiarizing them with new technological tools. Additionally, online classes save time and money on travel for both students and faculty. However, nursing students responded some drawbacks to online classes, such as poor network connectivity, limited technological infrastructure in academic institutions and homes, and insufficient digital competency among nursing faculty and students. The evaluation process is also challenging online. Under these circumstances, students suggested postponing clinical practicum until the situation normalizes. Students emphasized the need to maintain online classes, revise the curriculum by changing teaching and learning modes, and provide training for both faculty and students. Implementing online learning effectively will require greater coordination, expertise, initial investment, and commitment from academic institutions and regulatory bodies to adopt this mode of education in the future.

Conflict of interest: None

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