

Access this article online
Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_354_22

Impact of COVID-19 pandemic on learning status of student in Nepal

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Abstract:

BACKGROUND: This study was designed to evaluate the impact of the COVID-19 pandemic on the learning status of students from different educational boards and universities of Nepal. An online survey was conducted from tenth to twentieth of September 2020 to record the data.

MATERIAL AND METHODS: A self-designed questionnaire link, using “Google form” was sent to the students via social networks. A total of 589 participants shared their complete information. The simple percentage distribution was employed to evaluate the learning status of the students.

RESULTS: During the lockdown period, >70% of the students were engaged in online classes, most commonly by using the Zoom app. The majority of the students were using WIFI as an internet source to attend online classes. Students have been suffering from various problems related to anxiety, stress, economic crises, poor internet connectivity, deprivation of study materials, required e-learning accessories, and an unsuitable study environment. Mainly, students from remote areas and middle income families suffered enormously. Among those participants, who were able to attend the online classes, the majority of students (70%) were dissatisfied with the ongoing online classes. Only 23.3% of the participants suggested the feasibility of online classes in the near future.

CONCLUSION: Our study recommended that training teachers and students about online classes might create effectiveness toward e-learning. The government needs to provide free internet services to the remote areas and the poor students since in the current scenario, huge numbers of the population are struggling with the economic burden.

Keywords:

COVID-19, e-learning, lockdown, pandemic

Introduction

The coronavirus disease (COVID-19) is a life-threatening respiratory problem transmitted by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), belonging to the coronavirus family.^[1] First, it was reported in the Wuhan city of China in December 2019.^[2] Since then, it has spread to more than 210 countries as a global pandemic,^[3] creating an economic and social disaster, also a humanitarian cataclysm.^[2] To tackle this calamitous situation, most of the governments all over the world have started a similar objective to restrain the

spreading of this severely infectious disease by urging to maintain physical/social distance, nationwide lockdown, avoiding regular classes in educational institute, and diminution in migration.^[4] Because of this widespread situation, around 600 million school-going students are being devoid of education facility, due to shut down of academic institutes.^[1]

In Nepal, the first case of coronavirus infection was detected on January 30, 2020 from a Nepali student returning from the Wuhan city, China.^[5] The second case was reported after 2 months, on March 23, 2022, from a 19-year-old female, traveling to Nepal from France via Qatar.^[6] In a steady

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How to cite this article: Chaudhary GP, Khadka RB, Lamichhane A, Dhakal B, Das N, Tharu NS, *et al.* Impact of COVID-19 pandemic on learning status of student in Nepal. J Edu Health Promot 2022;11:314.

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Received: 06-03-2022
Accepted: 29-04-2022
Published: 28-09-2022

way, the total number of people infected from this virus in Nepal have reached above 0.25 million with almost 1,800 death cases by December 23.^[7] Nepal, being a landlocked country, suffered enormous migration of people from neighboring countries every day. Considering the best option to control its transmission, Nepal announced the nationwide lockdown in the very early phase, on March 24, 2020, and was lifted on June 14, 2020.^[8]

In Nepal, the closedown of the academic organization due to the upsurge of COVID-19 resulted in unprecedented consequences on education.^[9] All the universities and schools have been temporarily shut down for nearly 9 months now. According to a previous report, nearly nine million students in Nepal were estimated to be suffered due to the closure of the academic sector until May 2020. Among them, 11% were from the pre-primary level, 39% from the secondary level, 28% from the primary level, and 5% from the tertiary education level. Due to this unfavorable situation, academic institutions were enforced to initiate an alternative way to continue the educational classes.^[10] Thus, all the teachers were directed to teach through the e-learning techniques, mainly online classes. Continuation of disrupted classes via online platforms has played a significant role to assist the academic instructors along with schools and universities students, during this critical situation. However, in developing countries such as Nepal, the teachers and students may suffer from multiple problems such as socioeconomic challenges, technological problems, literacy background, etc., which may act as barriers to the newly employed online techniques.^[11] Therefore, this study aimed to investigate the impact of the COVID-19 pandemic on the learning status of Nepalese students through a cross-sectional online survey.

Materials and Methods

Study design and target group

A cross-sectional web-based survey^[1] was conducted in Nepal using a self-administered questionnaire between September 10 and 20, 2020. All the students studying and appearing for secondary education examination (SEE), which is a national examination board to master degrees from the different institutions in Nepal, studying various fields, possessing smartphones with access to the internet constitute the population of this study. Students studying below the tenth grade and those who are not interested to participate in this study were excluded. The survey was conducted by the Department of Pharmacy, Crimson college of Technology, affiliated with Pokhara University, Nepal. To avoid the risk of infection and to get the data from all over the country, using convenience and snowball sampling method, the web-based survey

questionnaire was distributed through different social media (Facebook, Email, Whats App, and Viber).

Sample size determination

For the determination of the required sample size in this cross-sectional study, the formula " $n = Z\alpha^2 P(1 - P)/D^2$ " was used where $Z\alpha = 1.96$; $P = 50\%$ as the rate of response for the online study, and $d = 5\%$. As a result, the lowest number of candidates essential for this survey was determined to be 384.16.^[12] Our target populations were all the students studying for SEE and above who potentially could respond to our survey, however 600 participants received the questionnaire and 589 participants completed and sent it back.

Study tool

A self-designed semi-structured anonymous questionnaire, developed in Google Forms was used to document the feedback of respondents.^[13] The survey questionnaire was designed with closed-ended questions that took approximately 5 min to fill. The questionnaire was prepared based on the literature review,^[1-3,9] scientific group discussion, and by obtaining recent information from news portals in discussion with specialists from different sectors. The questionnaire was divided into 23 questions, comprising general information about participants, the impact of the pandemic on examination, deprivation of study materials, distance with teachers, effective study time, impact on economic condition, mental stress, interest and access to online classes, availability of required gadgets, economic burden due to online classes, and students' perception toward online classes. The feasibility and comprehensiveness were observed by conducting a pilot study on 18 people and required corrections were made.

Statistical analysis

All the collected data were examined, coded, and entered with the help of IBM SPSS Statistics for Windows, version 16. Descriptive statistics including frequency, percentage, mean and standard deviation were carried out to describe the general characteristics of the participants. Simple percentage distribution was used to assess the impact of COVID-19. For the calculation of proportions and frequencies, descriptive analysis was chosen.

Ethical consideration

The Ethical Review Board (ERB) of the Pokhara University Nepal approved the ethical permission for the study. A statement regarding the consent to participate in the survey was in the preface of the questionnaire and could only proceed after reading the consent and agreeing to cooperate in the study. Involvement in this survey was voluntary and they were free to terminate and withdraw from the survey at any time by not submitting

the online form to the researchers. The information obtained from the participants was anonymously stored and was made confidential. The survey was conducted by adopting the guidelines given by the Declaration of Helsinki (revised in 2013).^[14] The study was conducted following the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines.^[15]

Results

General characteristics of the participants

Table 1 depicts the general characteristics of the research participants. Among 589 candidates; almost half of them were aged between 21 and 25 years with a median age of 21 years. The proportions of the male participants (62.3%) were comparatively higher than the female (37.7%) participants. More than half of the participants were recorded to be studying bachelor's degree (57.9%) and almost one-third of the students were studying 10 + 2 (31.6%), followed by the masters (6.8%), and SEE (tenth grade) (3.7%). The survey was conducted nationwide, in all the seven provinces of Nepal. The maximum number of participants were from province no. 5 (Lumbini province) (41.3%), while the least participation was reported from province 4 (3.22%). The survey targeted every possible student from all education boards of Nepal, namely the national examination board, council for technical education and vocational training (CTEVT), Pokhara University, Tribhuvan University (TU), Kathmandu University (KU), Purbanchal University, and B.P Koirala Institute of Health Science (BPKIHS).

Impact of COVID-19 in learning status of the students

As shown in Table 2, the majority of the students (83%) suffered from interruption of internal exam/board exam and research project, whereas only 9% of students reported no interruption and 8% said that probably got interrupted due to COVID-19 pandemic. Moreover, >80% of the students were deprived of their study materials and only 7.5% of students were able to manage it, few of them (12%) said that they might be deprived of their study material during the COVID-19 pandemic. The study depicts that >70% of the participants were worried about their future educational careers as they are not in touch with their teachers, supervisors, or professors during this pandemic situation. Similarly, 17% of the participants were found to be not worried about their career and 12.5% of the participants were thinking that their educational career might be affected by these circumstances. From Table 2, it can be observed that in this pandemic situation, more than two-thirds of the students have given less time to the study as compared to the normal situation, 19.7% of total students have given the same time for studying as the normal situation,

and only 7.6% said that they have given more time for studying during lockdown period imposed by the government of Nepal.

Information about online classes

Table 3 discloses the perception of Nepalese students toward online classes initiated by their academic institutes. According to our survey, it was reported that more than two-thirds of the participants never had any experience with online classes previously. According to this survey, 71.3% of participants were reported to be in touch with online classes. Out of the 420 students, who were attending online classes regularly, more than half of the participants said that they take the class for 3 h every day and more than one-third of the participants were recorded to be spending more than 3 h/day. To conduct the online e-lectures, sharing of the study materials, and evaluation of the learning, various platforms were

Table 1: General characteristics of the participants (n=589)

Variables	Category	n	%	M±SD
General characteristics				
Gender	Male	367	62.3	
	Female	222	37.7	
Age (years)	15-20	280	47.5	21.23±3.62
	21-25	245	41.6	
	26-30	52	8.8	
	>31	12	2.0	
Academic qualification	SEE (tenth grade)	22	3.7	
	10+2	186	31.6	
	Bachelor	341	57.9	
Geographical distribution	Master's	40	6.8	
	Province 1	105	17.82	
	Province 2	98	16.63	
	Province 3	78	13.24	
	Province 4	19	3.22	
	Province 5	244	41.43	
	Province 6	21	3.56	
Province 7	24	4.10		

Table 2: Learning status of the participants (n=589)

Variables	Category	n	%
Interruption of exam	Yes	489	83.0
	No	53	9.0
	May be	47	8.0
Deprived of getting studying materials	Yes	474	80.5
	No	44	7.50
	May be	71	12.0
Worried due to detachment with teachers	Yes	415	70.5
	No	100	17.0
	May be	74	12.5
Total time spent for studying	Less	428	72.70
	More	45	7.60
	Same as previous	116	19.7

Table 3: Feedback of the survey participants toward online classes

Questions	Responses	Frequency (n)	Percentage (%)
Have you ever taken online classes before lock down	Yes	175	29.7
	No	414	70.3
Are you in touch with online classes during lock down	Yes	420	71.3
	No	169	28.7
Are you able to access internet facility for online classes	Yes	426	72.3
	No	163	27.7
How many hours are you spending for online classes per day?	1 h	9	2.14
	2 h	20	4.77
	3 h	243	57.86
	>3 h	148	35.23
Which online application are you using to take online classes?	Zoom App	261	62.14
	Microsoft Team	91	21.66
	Google Meet	35	8.35
	Other applications	33	7.85
	Wi-Fi	300	71.43
Which source of online do you use for online classes	Mobile data	120	28.57
	No internet	74	42.3
I could not join online classes because	Lack of knowledge	29	16.6
	Do not have electronic devices	9	5.1
	Miscellaneous	63	36

reported to be used by the students – mainly the Zoom App, Microsoft Team, and Google Meet application. Most of the participants (62.14%) were recorded to be using the Zoom App followed by the Microsoft Teams and Google Meet. Among the 420 participants, involved in regular online classes, it was observed that 71.43% were utilizing WIFI as an internet service whereas 28.57% were compelled to depend on a mobile data pack.

Impact of COVID-19 on economic condition of family

Table 4 revealed that >75% of the students have gone through an economic crisis in this pandemic whereas about 15% told that they probably have gone through economic crises and 9% of students are not worried about any economic burden or financial problem during this COVID-19 pandemic. Findings of this study illustrated that about 74% of student's educational careers got affected because of low family income due

Table 4: Economic condition of the participants' family

Variables	Category	n	%
Do you think the economic condition of your family has been affected by COVID-19?	Yes	447	75.9
	No	55	9.3
	May be	87	14.8
Do you think the low income of your family would affect your education?	Yes	434	73.7
	No	62	10.5
	May be	93	15.8
Did you purchase any new gadgets for online classes?	Android mobile	82	19.5
	Laptop/computer	39	9.2
	Mobile phone accessories	35	8.4
	No, I did not purchased anything	264	62.9
Did you make WIFI connections for online classes?	Yes	220	73.3
	Already I had WIFI	80	66.5
How much money (in rupees) do you spend daily for online classes on mobile data?	<50	11	9.2
	50-100	58	48.3
	100-200	31	25.8
	>200	20	16.7

to the lockdown, imposed by the government during the COVID 19 pandemic, whereas about 16% of students tell that their educational career might have been affected due to low family income and only 10.5% report that their educational career was not affected by low family income in COVID 19 pandemic. It was reported that about 20% of students purchased new mobiles, 9% purchased laptops or computers, 8.4% of them purchased mobile phone accessories especially for attending online classes and about 63% of participants did not purchase any gadgets for online classes. Among the WIFI users (300), 73.3% had recently connected new WIFI service, especially for the online class. Only 26.7% of participants had the facility of the WIFI service before lockdown. While asking a question about the total expense per day for the mobile data pack, it was observed that >90% of the participants spent above 50 rupees for online classes.

Impact of the COVID-19 on psychology of students about their future education

Figure 1 elicits that more than two-thirds of the students were stressed or worried about the uncertainty of their classes because of COVID 19 pandemic, 27% of students were found to be worried because of lockdown and 6.6% did not get stressed or worried about either situation.

Students' perception toward online class

Table 5 discloses the perception of Nepalese students toward online classes initiated by their academic institutes. In our study, more than two thirds of participants were dissatisfied with the effectiveness of the online class. Moreover, in our survey, only 23.3% of participants suggested the feasibility of online classes in near future, which suggested that the majority of the

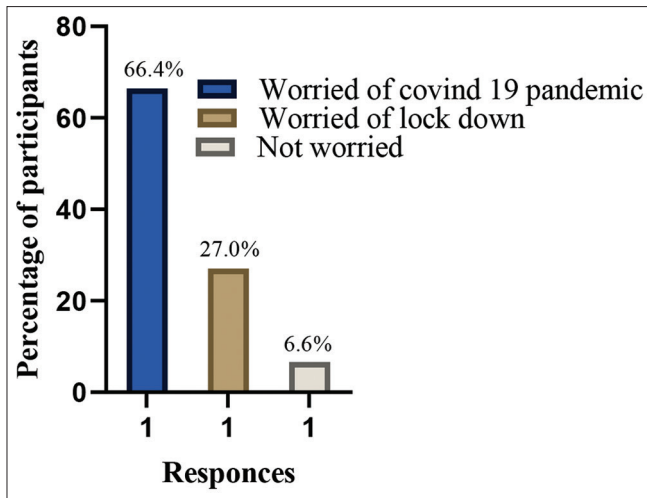


Figure 1: Bar diagram indicating the percentage of participants getting worried or stressed about their study because of COVID- 19 pandemic/lock down (total number of participants = 589)

Table 5: Opinions of the participants (n=420)

Variables	Category	n	%
Are you satisfied with your online classes?	Yes	126	30
	No	294	70
Do you think online mode of taking classes should be practiced in future after COVID-19 pandemic?	Yes	98	23.3
	No	163	38.8
	Confused	159	37.9

students are still unconvinced to accept the e-learning system as the best and official alternative of the physical class.

Discussion

Impact of COVID-19 in learning status of the students

Most of the education boards in Nepal had announced the annual and semester examination schedule just before the implementation of the national-wide lockdown. The recent widespread of this disease has forced multiple curtailments on research activities due to the necessity of laboratory closure,^[6] which might be the reason for the interruption of the exam and research project for the major proportion of the participants. In this survey, major proportions of the participants were of the university and 10+2 level, and they mostly depend on the library for the study materials. Due to the sudden shut down of the educational organization, they could not access the required study materials from the library. Furthermore, another reason for the unavailability of education materials might be due to the lack of proper internet services. In the previous study, it has mentioned that only 56% of people in our country have the facility of internet service.^[10] Major proportions of the participants in this survey were from the university level. University-level students require continuous communication and

supervision of their teachers and professors for their research projects, internship, presentation, thesis writing, community survey, and other scientific activities.^[16] Besides that, the uncertainty of the corona pandemic duration might have made them worried about their educational career, as a nationwide lockdown was only the preventive measure employed by the government of Nepal due to the dearth of requisite resources to cope with COVID-19 breakout.^[5,17] As most of the students in Nepal have returned to their home,^[8] they have to give their time for household activities also,^[8] which directly affect their effective study time. Furthermore, they may have problem with electricity and internet.^[8,18] A certain proportion of the participants who are getting more time for the study in this situation signifies that they may have a good facility of internet and electronic accessories, they may have utilized digital technologies to learn new things, they do not have to waste the time by traveling from home to school and vice versa as well as they may have a favorable family environment for the effective study.^[9,19]

Information about online classes

After the decision of the government of Nepal initiate digital learning as an alternative education technique, most of the academic institutes in the urban area have initiated online classes.^[6] Before the pandemic, the online learning system has not been practiced in the schools and universities of Nepal. Therefore, lack of experience among teachers and students in online classes might act as a hindrance to its effectiveness.^[10] After the announcement, by the ministry of education of Nepal, to start and consider online education as a formal education system, most of the organizations in Nepal announced compulsory online classes. Thus, this might be the possible reason for the involvement of the majority of the students in the online class, in our survey. However, still, about one-third of the students are far from the accessibility to online classes, mainly due to the unavailability of the internet facility. Nepal is a poor and underdeveloped country, the majority of the peoples in the rural areas are still struggling to achieve the facility of electricity and internet. Due to the increasing unemployment and poverty, it is a big challenge for many Nepalese to afford the cost of internet services and electronic devices.^[10,11] The variation in total time spent by the students might be due to the difference in the academic level of the students participating in this survey. Usually, students in grades 10 and 10 + 2 have a relatively higher number of subjects per year. So they may have to spend >3 h every day. Similarly, bachelor level students have relatively fewer numbers of subjects; hence they may have to spend 3 h or less every day. Furthermore, the numbers who are spending 1 or 2 h/day, for online classes may signify the master level students, as they have comparatively fewer subjects than

other academic levels. Additionally, variation in total time spent might be due to the personal reasons of the students such as ignorance of online classes, household work of the students, the problem of load shedding, poor internet connection, etc., Many scientific studies have reported that the use of the Zoom App is most common and convenient in most countries.^[1,20] The preference of the participants toward WIFI services might be due to the expensive cost of the mobile data pack.^[9]

Impact of COVID-19 on economic condition of family

- After the outbreak of COVID-19 all over the world, most of the Nepalese, employed in foreign countries started migrating to Nepal. It has been reported that more than 0.5 million Nepalese are back in Nepal and >70% of the migrants are willing to come back to Nepal. As a result, the abrupt increase in unemployment has affected their income and remittance.^[21] Besides that most of the socioeconomic activities have been confined all over the country. Many peoples have lost their businesses and job. Businessmen, who are involved in the import and export of the product, are suffering from unaffordable economic loss. According to a previous report, more than 2 million people in Nepal are prone to lose their jobs due to the COVID-19 catastrophe. Abrupt disruptions of the supply chain and shut down of many small enterprises have propelled many endangered peoples into poverty.^[22] Only a very few proportions of the people may not have been suffered from the economic burden, especially those family whose income is independent of lockdown such as family engaging in the governmental job, for those, whose family members has well settled abroad, who have started their own new business (such as vegetable farming, buffalo farming, chicken farming, and goat farming, etc.).^[23] Due to the unexpected decline in family income created by the nationwide lockdown, many families are unable to pay the tuition fee for the education of students. To attend the online classes started by many institutions, people are unable to purchase internet services, laptops, computers, android mobile phones, and other electronic accessories.^[9] Furthermore, those students who were engaging in part-time jobs to manage their fees may have lost their job,^[22] creating a shortage of money. Increased unemployment ultimately decreases the attention of people regarding education as people have to struggle for food preferably than education.^[19] These might be the contributing factors to create trouble in the educational expenses of the students. As described previously, people whose incomes are not affected by lockdown may not be worried about their educational costs. Due to the hiked economic burden,^[21,22] many students may have become unable to purchase new devices. Additionally, most of the participants in this survey were from the pre-university and university levels. Normally most

of the students in this level, have the accessibility of android mobiles. This might be the possible reason for not purchasing new electronic devices by the majority of the participants. This study signified that the use of WIFI services has been increased dramatically all over the country after the COVID-19 pandemic. However, it has further increased the economic burden. Since most Nepalese are suffering from economic crisis due to unemployment, it is very difficult for them to manage the expense of daily online classes. Therefore, the government of Nepal should take immediate action to implement an effective policy to provide free internet services for students all over the country.

Impact of the COVID-19 on psychology of students about their future education

The rapid spreading of COVID-19 has deranged the career of many peoples all over the world. The obstreperous infection has generated a perception of precariousness and apprehension about the forthcoming future. Due to lockdown, most students all over the world are suffering from the disturbance in teaching and evaluation in the final level of their studies (such as research projects, thesis work, report preparation, workshop, conferences, etc.). Due to the postponement of the final examination, their graduation schedule has been pushed. Furthermore, spreading of the COVID-19 has created several challenges of the global recession. As a result, the abroad study plan of many students has been postponed indefinitely.^[24]

Students' perception toward online class

Although majority of the students are devoted toward the online class, they are suffering from various technical problems such as low bandwidth of the service, frequent interruption and slowing down of the server due to excessive internet load as more peoples are utilizing it most of the time, for other official works and entertainment due to lockdown.^[18] This might be the possible reason for the dissatisfaction of around more than two-third of the participants toward the effectiveness of the online class. Furthermore, unexpected load shedding, lack of proper communication of all the students with the teacher, lack of technical skills, unnecessary expenses for mobile data pack, unfeasibility of learning for practical, project work, and numerical based course might be other contributing factors.^[25] Similarly, in the previous study conducted on Ghanaian students, it was reported that only 18% of the participants were satisfied toward e-learning technique.^[26]

Conclusion

The nationwide lockdown in the midst of the COVID-19 pandemic has resulted in remarkable disturbance in every level of academic institutions in Nepal. The

present online survey evaluated the learning status of Nepalese students from all academic levels during this epidemic. Even though a significant portion of the participants is utilizing online platforms for their study, the majority of them are enforced to suffer from enormous challenges in online study. This research has propounded following exhortation to the Nepal government, concerned institutional authorities, and policymakers. The government of Nepal should ensure the continual availability of basic infrastructural facilities (such as electricity, internet service, free WIFI connection or mobile data services, etc.) first, to manage the online learning process in an efficient way, in the case of upcoming medical emergencies also. It is mandatory to guarantee requisite finance for the enhancement of the existing education system and to facilitate the skill development training for the concerned team members of all the academic institutions. The intervention of major issues through the targeted approach is a crucial step to build up a positive environment for the study among the students from the endangered sector of the community. Furthermore, enduring collaboration among local governmental authorities, state government, and central government are urgently needed to establish and continue the strong education system all over the country that will secure to flourish the expertise for productivity and employability of the youthful minds.

Acknowledgements

We are very much grateful to the Department of Pharmacy, Crimson College of Technology, affiliated to Pokhara University, for providing all the technical support.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The participant understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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