

Knowledge and Perception of COVID-19 among School Adolescents of Lalitpur

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ABSTRACT



Background: The world health organization declared coronavirus outbreak on 30th January 2020 and being pandemic on March 2020. It has been affecting 213 countries and territories around the world. A poor understanding of the disease among general people including school adolescents may delay seeking treatment and increase its spread. Adolescents can improve knowledge of the family members once they are well informed about disease and its prevention. Therefore, the study was conducted to identify the knowledge and perception of COVID-19 among school adolescents of Lalitpur.

Methods: A cross-sectional descriptive study was carried among 305 adolescent students of purposively selected four schools. Non probability total enumerative sampling technique was used to select the sample. A self- developed self-administered structured google form questionnaire was used as instrument for data collection. Statistical Package for the Social Science (SPSS) version 16 was used for data analysis. Data analysis and interpretation was done by using descriptive statistics (frequency and percentage) and inferential statistics (Chi-square test).

Results: Regarding the level of knowledge of COVID-19, 65.2 % had good knowledge, 29.2% had moderate knowledge and 5.6% had poor knowledge. Most of the students (87.2 %) had favorable perception, only 8.2% had unfavorable perception. There was significant association between age and level of knowledge ($p=0.048$) but no significant association with other variables.

Conclusions: Nearly two third students had good knowledge and the majority of students had favorable perception toward COVID-19. However, students had lower than expected knowledge for their age; therefore awareness program is required for the school adolescent regarding COVID- 19.

Keywords: Adolescents, COVID-19, Knowledge, Perception

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INTRODUCTION

Corona Virus Disease 2019 (COVID-19) is the viral infectious disease caused by corona virus. It has been affecting 213 countries and territories around the world.¹ The first reported cases of COVID-19 occurred in Wuhan at the end of December 2019.² Globally, more than 22 million (22,767,009) are infected and more than 794,435 people have died from COVID-19 till 21st August 2020.¹ COVID-19 patients presents certain common symptoms such as fever, malaise, cough flu like symptoms and some develop acute respiratory syndrome, respiratory failure and even death.³ According to Asian Development Bank (ADB), fatality rate and infection rate is 1-3.4% and 1.5 -3.5 per infected persons respectively.⁴

Burden of this contagious disease can be decreased by providing knowledge such as importance of hand washing with soap and water, maintaining social distance, avoiding touching eyes, nose and mouth.⁵ In Bangladesh, 84% students aged 17 to 28 years had wrong concept that COVID-19 could transmit through touching persons with flu and 52.5% and 10.8% students believed that COVID-19 could spread through water and food, and mosquito bite respectively.⁶ In Nepal, among 760 residents of 7 provinces, 72% had knowledge on wearing surgical mask as precaution and 77.9 % were convinced that Nepal can win the battle against COVID-19.⁷

Infected cases are increasing day by day, and among them adolescents are also being infected. They can improve knowledge of the family members once they are well informed about disease and its prevention. Therefore, a study was conducted to identify the knowledge and perception of COVID-19 among school adolescents of Lalitpur.

MATERIALS AND METHODS

A cross-sectional analytical research design was used to identify the knowledge and perception of COVID-19 among school adolescents studying in class 9 and 10. The study was conducted in private schools of Lalitpur: Pathashala Foundation Nepal, Gyanodaya Bal Batika Secondary School, I.J. Pioneer School and Advance International Model School (AIMS). These schools currently run online

classes. Non probability purposive sampling was used to select the schools. Non probability total enumerative sampling technique was used to select the sample. A self- developed self-administered structured google form questionnaire was used for data collection. Questionnaire had part 1 with information about socio-demographic information and part 2 having questions related to knowledge of COVID-19. It consists of 10 questions, each with 3 options: 'Yes', 'No' and 'Don't know'. 'Yes' response will be scored as a correct answer and each correct answer was scored one and incorrect answer ('No' and 'don't know') was scored zero and for multiple responses score one was given for each response. Thus the total score ranges from 0 to 17. Respondent's score was then summed-up and converted to percentage and categorized as a) less than or equals to 60%: poor knowledge; b) 60.1-80%: moderate knowledge; and c) more than or equals to 80.01%: good knowledge.⁷

Part 3 of the questionnaire assesses the perception of COVID-19. It consists of 10 statements, 4 positive and 6 negative ones, measured in 5 – point rating scale ranged from 1-strongly disagree, 2-disagree, 3-neutral/undecided, 4-agree, to 5-strongly disagree. Statement number 2,3,4,7,8,9 are negative statements; so, they are scored in a reverse order. The total score was 50 with minimum score of 10; the higher score denoting a positive and lower score indicating negative perception. The respondents score was then summed-up and converted to percentage and categorized as a) below 60%: unfavorable perception; b) 60%: neutral perception; and c) above 60%: favorable perception.⁸

The content validity of instrument was maintained by consulting two faculties of Patan Academy of health science, School of nursing, Lalitpur Nursing Campus. Ethical approval was obtained from Institutional Review Committee (IRC) of Patan Academy of Health Sciences (PAHS) prior to the commencement of the research study. Formal permission was taken from the administration of each school. The class coordinators were contacted by phone call. Personal or parents' email identity or viber numbers were collected from class coordinators. Written consent was taken from

individual parents' email address. Parents were informed through school administration and permission was taken to participate their children in the study before data collection. Then, link of google form was sent to those students in respective parents' email or viber. It took 10-15 minutes to fill up the google form. Two weeks were given to fill up the google form. Reminder email was sent at the end of first week and one day before the end of the second week. The form was set up in such a way that one participant can only submit one form. Statistical Package for the Social Science (SPSS) version 16 was used for data analysis. Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (Chi-square test) were used to analyze data. For Chi square test, poor and moderate level of knowledge was merged and termed inadequate knowledge and good knowledge was termed adequate knowledge. To maintain confidentiality, obtained information was used only for study purpose. Anonymity was maintained by not keeping participant's identity or name in google form during data collection.

RESULTS

Majority of students were from aged group 12-15 years (76.4%) and were female (51.5%), from grade 10 (52.1%) and had health personnel in their family (76.4%) (Table 1). Most of the students (89.2%) answered that COVID -19 is the infectious disease caused by corona virus. The students had answered fever (97.7%), tiredness (77%), dry cough (87.5), headache (66.9%) etc are the symptoms of COVID-19. Likewise, 98% had

answered that Corona virus is transmitted during coughing, speaking and sneezing by infected people. Majority of the students (95.1%) said that cleaning hands with soap and water or an alcohol-based hand rub could prevent the spread of disease. Further, 91.5% believed that taking rest, drinking plenty of fluids and eating nutritious food can help people to build immunity against COVID-19. (Table 2)

Most of the students (45.6%) agreed that COVID 19 is a curable disease. Only 6.9% strongly disagreed on COVID-19 being transmitted through food or food packaging.

Maximum students disagreed that only staying at home whole day prevents transmission and (26.7%) and wearing disposable gloves while going out from home during this pandemic stage helps to reduce transmission (42.0%). Most of the students Strongly agreed that everybody has risk to get infected (44.9%), taking precautions such as handwashing, physical distance and wearing mask will reduce spread of infection from one person to another (65.6%) (Table 3).

Similarly, 65.2% had good knowledge, 29.2% had moderate knowledge and 5.6% had poor knowledge (Table 4). Most of the students (87.2 %) had favorable perception and only 8.2% had unfavorable perception (Table 5).

There was significant association between age and level of knowledge ($p=0.048$) but there was no significant association between sex, grade and presence of health personnel in the family with the level of knowledge. (Table 6)

Table 1: Respondents' Information

Characteristics		Number	Percentage
Age in years	12-15	233	76.4
	16-19	72	23.6
	Mean age \pm SD=14.90 \pm 0.993		
Sex	Male	148	48.5
	Female	157	51.5
Grade	Class 9	146	47.9
	Class 10	159	52.1
Presence of health personnel in the family	Yes	72	23.6

Table 2: Respondents' Response regarding Knowledge of COVID-19

SN	Statements	Yes N(%)	No N(%)	Do not Know N(%)
1	COVID -19 is the infectious disease caused by corona virus.	272 (89.2)	20 (6.9)	12 (3.9)
2	The symptoms of COVID-19 (multiple response)			
	Fever	298 (97.7)	4 (1.3)	3 (1)
	Tiredness	235 (77)	27 (8.9)	43 (14.1)
	Dry cough	267 (87.5)	10 (3.3)	28 (9.2)
	Headache	250 (82)	24 (7.9)	31 (10.2)
	Running nose	204 (66.9)	54 (17.7)	47 (15.4)
	Sneezing	247 (81)	25 (8.2)	33 (10.8)
	Body Aches	186 (61)	57 (18.7)	62 (20.3)
	Diarrhoea	130 (42.6)	96 (31.5)	79 (25.9)
3	Corona virus is transmitted during coughing, speaking & sneezing by infected people.	299 (98)	3 (1)	3 (1)
4	Cleaning hands with soap and water or an alcohol-based hand rub can prevent the spread of disease.	290 (95.1)	12 (3.9)	3 (1)
5	Wearing surgical masks can prevent one from being infected by the COVID-19 virus.	270 (88.5)	24 (7.9)	11 (3.6)
6	Covering nose and mouth with bent elbow or a tissue when coughing or sneezing can prevent spread of virus.	268 (87.9)	23 (7.5)	14 (4.6)
7	Six feet (2 meters) of social distancing is also one way of preventing from COVID-19 .	284 (93.1)	15 (4.9)	6 (2)
8	Till date, there are no specific vaccines or medicines for COVID-19 .	199 (65.2)	48 (15.7)	58 (19)
9	Taking rest, drinking plenty of fluids and eating nutritious food can help people to build immunity against COVID-19.	279 (91.5)	9 (3)	17 (5.6)
10	People who have been contacted with someone infected with the COVID-19 virus should be self-quarantined immediately.	291 (95.4)	3 (1)	11(3.6%)

Table 3: Respondents' Responses regarding Perception of COVID-19

S N	Statements	Strongly Disagree	Disagree	Neutral (Undecided)	Agree	Strongly Agree
		N(%)	N(%)	N(%)	N(%)	N(%)
1	I believe COVID 19 is a curable disease	22(7.2)	27(8.9)	67(22)	139(45.6)	50(16.4)

2	I believe COVID-19 is transmitted through food or food packaging. *	21(6.9)	76(24.9)	89(29.2)	81(26.6)	38(12.5)
3	I believe staying at home whole day prevents transmission. *	80(26.2)	112(36.7)	52(17)	39(12.8)	22(7.2)
4	I believe wearing disposable gloves while going out from home during this pandemic stage helps to reduce transmission. *	119(39)	128(42)	18(5.9)	13(4.3)	27(8.9)
5	I consider everybody has risk to get infected.	26(8.5)	10(3.3)	24(7.9)	108(35.4)	137(44.9)
6	Taking precautions such as handwashing, physical distance and wearing mask will reduce spread of infection from one person to another.	20(6.6)	7(2.3)	3(1)	75(24.6)	200(65.6)
7	COVID-19 only affects older adults with chronic diseases*	12(3.9)	31(10.2)	39(12.8)	109(35.7)	114(37.4)
8	COVID-19 is not transmitted if the person is asymptomatic*	11(3.6)	32(10.5)	115(37.7)	83(27.2)	64(21)
9	Taking steps of precaution every time is nuisance*	11(3.6)	60(19.7)	57(18.7)	74(24.3)	103(33.8)
10	I agree not to go to crowded place i.e. shopping mall, cinema hall, restaurant, vegetable market to prevent from COVID-19.	27(8.9)	10(3.3)	16(5.2)	111(36.4)	141(46.2)

*Negative statement

Table 4: Respondents' Level of Knowledge regarding COVID-19

Level of knowledge	Number	Percentage (%)
Poor knowledge ($\leq 60\%$)	17	5.6
Moderate knowledge (60.1-80%)	89	29.2
Good knowledge ($>80.01\%$)	199	65.2

Table 5: Respondents' Level of perception regarding COVID-19

Level of perception	Frequency(n)	Percentage (%)
Unfavorable perception ($<60\%$)	25	8.2
Neutral perception (60%)	14	4.6

Favorable perception (> 60%)	266	87.2
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Table 6: Association between Demographic variables and level of knowledge

Characteristics		Inadequate Knowledge	Adequate Knowledge	(χ^2) value	p-value
		N(%)	N(%)		
Age	12-15	74 (24.26)	159(52.13)	3.903	0.048
	16-19	32(10.49)	40(13.11)		
Sex	Male	62(20.33)	86(28.20)	6.460	0.11
	Female	44(14.43)	113(37.05)		
Grade	Class 9	48(15.74)	98(32.13)	.435	0.509
	Class 10	58(19.02)	101(33.11)		
Presence of health personnel in the family	Yes	28(9.18)	44(14.43)	.711	0.399
	No	78(25.57)	155(50.82)		

p value significant at 0.05 level

DISCUSSION

Most of the students (89.2%) answered that COVID -19 is the infectious disease caused by Corona virus which was supported by the study done in China where 97.3% agreed COVID-19 is a viral disease.⁹ Regarding symptoms of COVID-19 the students have answered fever (97.7%), tiredness (77%), dry cough (87.5%), headache (66.9%), sneezing (81%), body ache (61%), and diarrhea (42.6%) which were supported by previous studies.^{10,11} Most of the students (98%) answered that Corona virus is transmitted during coughing, speaking and sneezing by infected people. The finding was consistent with the study done among Senior High School students in Ghana (92.3%)¹² whereas other studies reported less scores in Italy (71%)¹³ and in Bangladesh (67.2%)¹⁴.

Majority of the students (95.1%) said that cleaning hands with soap and water or an alcohol-based hand rub can prevent the spread of disease. This finding was supported by previous studies conducted in India (100%)¹⁵, Ghana (98.9%)¹² but contradicted in the studies conducted in Bangladesh (67.2%)¹⁶ and in Saudi Arab (47.7%)¹⁷ respectively.

For the prevention from the COVID-19, 88.5% said that wearing surgical masks can prevent one

from being infected by the COVID-19 virus. The finding was consistent with the finding among adolescents in Jordan (80%)¹⁸ whereas less in China (65.46%).¹⁹ Similarly, in the present study, (87.9%) covering nose and mouth with bent elbow or a tissue when coughing or sneezing can prevent spread of virus. This finding was supported by study conducted in Jordan (87%)¹⁸ and contrasted by the study done in Bangladesh (28.4%)¹⁶. Likewise, 91.5% agreed that Taking rest, drinking plenty of fluids and eating nutritious food can help people to build immunity against COVID-19 and 95.4% said that people who have been contacted with someone infected with the COVID-19 virus should be self-quarantined immediately. The findings are similar to a study in China (93.7%)⁹ but was less in another study in Nepal (77.4%).¹⁰ Regarding perception of COVID-19, less than half of the students (45.6%) agreed that COVID 19 is a curable disease. Only the least (6.9%) agreed that COVID-19 is transmitted through food or food packaging. The finding was contradicted by the study of Ghana (27.9%).¹²

Most of the students (44.9%) Strongly agreed that everybody has risk to get infected and 65.6% strongly agreed that taking precautions such as handwashing, physical distance and wearing mask will reduce spread of infection from one person to

another. In addition, 37.4% strongly believed that COVID-19 only affects older adults with chronic diseases whereas these study findings were contradicted by the study done in India (86.15%)²⁰. Regarding perception on COVID-19, 3.6% strongly disagreed that COVID virus is not transmitted if patient is asymptomatic which means they strongly agreed that asymptomatic patient can also transmit Corona virus which were contradicted to previous studies^{12,19} and in the present study, 33.8% strongly agreed that taking steps of precaution every time is nuisance and 46.2% strongly agreed during pandemic situation people should not to go to crowded place i.e. shopping mall, cinema hall, restaurant, vegetable market to prevent from COVID-19. The findings were supported by the previous study.¹⁰

In the present study, 65.2 % had good knowledge (> 80.01%), 29.2% had moderate knowledge (60.1-80%) and 5.6% had poor knowledge. The finding was consistent with the study findings done in Madhurai, India (69.8% good knowledge)²¹, in Nepal (knowledge score 60.0-98.7%).²² in

contradictory in the study of Iran (moderate knowledge 60.8%)²³ and India (good knowledge 40%)²⁴ and having higher knowledge score (80.5%) among females than males.²⁵

Limitation: The study was conducted only in four private schools.

CONCLUSION

More than half of the students had good knowledge and majority had favorable perception toward COVID-19. Only two-third have good level of knowledge and more than four-fifth have favorable perception. However, awareness program is needed to increase and update knowledge among the school adolescents regarding COVID-19.

Recommendation: The similar study can be conducted in a larger scale sample which helps in generalization of results.

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