Original Research Article

Knowledge, Attitude and Practices towards COVID-19 among Undergraduate Students: Web-Based Cross-Sectional Study

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Abstract

Introduction: Most people infecting with the SARS-CoV-2 and experiencing mild to severe respiratory illness. Individual knowledge and attitude will improve practices towards covid-19 prevention and precaution measures and it is essential to control the spread of disease. Hence the aim of the study was to evaluate knowledge, attitude and practice towards COVID-19 among undergraduate students as students pays important role in the society. ***Materials and methods:*** Cross sectional study was carried out with 60 samples that met the inclusion criteria were selected using convenience sampling technique. Google form was used to collect the data among participants. It contains multiple choice questionnaire regarding demographic variables, knowledge, attitude c, and practice towards COVID-19. The data were tabulated and analyzed by descriptive and inferential statistics. ***Result:*** The finding of the study reveals that out of 60 participants, 34(56.67%) had moderate knowledge, 47(78.33%) had favorable attitude and 49(81.67%) had adequate practice through COVID-19 preventive measures. There is a statistically significant positive correlation between knowledge and practice, knowledge and attitude and attitude and practice at the level of p<0.0001. Chi-square test reveals that there is a significantly association between the level of knowledge and practice with selected demographic variables of gender and year of study at the level of p<0.05 and there is no significant association between attitudes with a selected demographic variables. ***Conclusion***: Findings of the present study revealed that, the arts and science college students had generally a moderate level of knowledge, possess a positive attitude, and performed a good practice and active behaviors of preventive measures towards COVID-19. The need to improve the knowledge to promote positive attitude and practice related to updated trends regarding COVID-19. The result of this study may be utilized as a baseline for planning awareness campaigns in the future.
Keywords: Attitude, COVID-19, knowledge, practice, undergraduate students.

INTRODUCTION

The Corona virus disease 2019 (COVID-19) is a new type of infectious disease and its first transmission was identified in Wuhan, China in December 2019. Consequently it spreads worldwide with large outbreaks occurring in Italy, Iran, South Korea, United States of America, India and many other countries which leading to an ongoing pandemic [1]. Corona viruses are enveloped; positive single stranded large RNA and has four subfamilies, namely alpha, beta, gamma, and delta- corona virus that can infect humans [2]. The disease is highly infectious and it's transmitted from one person to other person by directly or indirectly and level of spread and severity of the disease have therefore risen. This COVID-19 outbreak is the ongoing challenge which needs constant surveillance, promote diagnosis, and robust research to understand the basic biology of emerging infectious pathogens and human susceptibilities to viruses, as well to develop effective countermeasure [3]. However, COVID-19 prompted implementation of public health protocols to control the spread of the virus, many of them involving social distancing, hand washing, and lockdown procedures, but has also resulted in creating public anguish and massive fear [4] particularly among the unaffected population [5].

The battle against COVID-19 is still continuing globally. To achieve the final success of zero positivity cases, people's adherence to the control measures are essential, which is largely affected by their knowledge, attitudes, and practices (KAP) towards COVID-19 in accordance with KAP theory [6, 7]. It

was suggested that knowledge and attitudes towards infectious diseases are associated with level of panic emotion among the population, which can further complicate attempts to prevent the spread of the disease during SARS outbreak in 2003 [8, 9]. KAP is an important cognitive key in public health regarding health prevention and promotion. It involves a range of beliefs about the causes of the disease and exacerbating factors, identification of symptoms, and available methods of treatments and consequences [10]. Community is an immense importance and is critical for the community prevention and control of this pandemic. There are limited study was conducted regarding knowledge attitude and practice on COIVD 19 among student community. Hence the present was conducted with the aim to assess the level of knowledge; practice and attitude towards COVID 19 among undergraduate students as student's community play an important role in the society.

MATERIALS AND METHODS

Non experimental- descriptive study was conducted to assess the level of knowledge, attitude and practice towards COVID-19 with 60 undergraduate students through online survey method. The participants were selected using convenience sampling technique who met the inclusion criteria. Undergraduate students, who could understand English, were able to access internet like WWW, emails etc. and familiar with filling Google / online forms were included in the study. The tool used for the study was demographic variables, multiple choice questionnaires and likert item questionnaires to assess the level of knowledge, attitude and practice towards COVID-19. The questionnaires were related to clinical features, transmission routes, prevention & control, Social interaction, self motivation and reception of information prevention efforts, clean & healthy lifestyles and compliance of COVID-19. The total of 45 questions among which 5 questions assessed regarding socio-demographic variables, 20 questions regarding knowledge, 10 questions regarding attitude and remaining 10 questions regarding practice. The reliability of the tool was tested by test and retest method. The level of knowledge was categorized by inadequate knowledge (<50%), moderately adequate knowledge (51-74%), adequate knowledge (>75%). The level of attitude was categorized by unfavourable Attitude (<50%), moderately favourable Attitude (51-75%) and favourable attitude (<75%). The level of practice was categorized by inadequate (≤50%), moderate (51 – 75%) and adequate (<75%). The sample characteristics were described using frequency and percentage. Karlpearson's correlation was used to correlation between knowledge, attitude and practice towards COVID-19 among undergraduate students and Chi square was used to associate the level knowledge, attitude and practice with selected demographic variables. The collected data was analysed by using descriptive and inferential statistics.

RESULT

Description of the Demographic Variables of the Undergraduate Students

The findings of the current study observed that Most of the undergraduate students 32(53.3%) were aged between 20-21 years, regarding sex the majority of samples 44(73.3%) were females, regarding education course the majority sample 29(48.3%) were studying B.Com, regarding year of study the majority sample 34(56.7%) were pursuing third year and regarding place of residence the majority of sample 44(73.3%) were residing in urban area compared to rural and semi-urban area shown in Table-1.

Table-1: Frequency and percentage distribution of demographic variables of undergraduate students

Demographic Variables	No.	%
Age in years		
17 – 18	19	31.7
19 – 20	9	15.0
20 – 21	32	53.3
Gender		
Male	16	26.7
Female	44	73.3
Course of study		
B.Sc.	26	43.3
B.Com	29	48.3
B.A	3	5.0
B.B.A	2	3.3
Year of study		
First year	23	38.3
Second year	3	5.0
Third year	34	56.7
Fourth year	-	-
Residence		
Urban	44	73.3
Semi urban	11	18.3
Rural	5	8.3

### Level of Knowledge, Attitude and Practice towards Covid-19 among Undergraduate Students

The Table-2 shows that 34(56.67%) had moderate knowledge, 21(35%) had adequate knowledge and 5(8.33%) had inadequate knowledge towards COVID-19 among undergraduate students.

Table-2: Frequency and percentage distribution of level of knowledge towards COVID-19 among undergraduate students

Level of Knowledge	Frequency	Percentage
Inadequate Knowledge (≤50%)	5	8.33
Moderate Knowledge (51 – 75%)	34	56.67
Adequate Knowledge (<75%)	21	35.0

Figure-1 depicts that 47(78.33%) had favourable attitude and 13(21.67%) had moderately favourable attitude towards COVID-19 among undergraduate students.
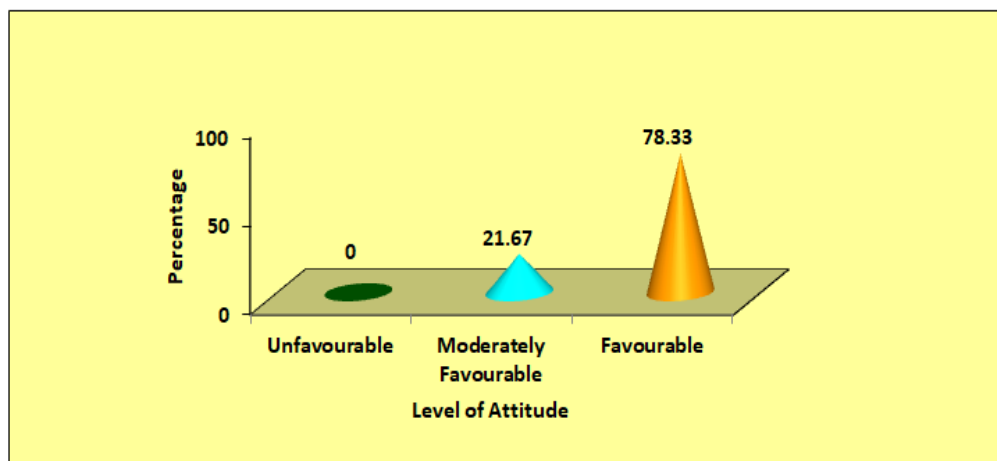
Figure-1: Percentage distribution of level of attitude towards COVID-19 among undergraduate students

Out of 60 participants, 49(81.67%) had adequate practice, 9(15%) had moderate practice and 2(3.33%) had inadequate practice towards COVID-19 among undergraduate students as shown in Table-3.

Table-3: Frequency and percentage distribution of level of practice towards COVID-19 among undergraduate students

Level of Practice	Frequency	Percentage
Inadequate (≤50%)	2	3.33
Moderate (51 – 75%)	9	15.0
Adequate (<75%)	49	81.67

Correlate the relationship between the level of knowledge and practice, knowledge and attitude and atticutde and practice

The Table-4 shows that the mean score of knowledge was 14.30±3.42, the mean score of attitude was 40.95±4.49 and the mean score of practice was 8.57±1.48. The calculated Karl Pearson's Correlation value of r = 0.441 between knowledge and attitude, r = 0.523 between knowledge and practice and r = 0.406 between attitude and practice shows a moderate positive correlation which was found to be statistically significant at p<0.001 level. This clearly infers that when knowledge towards COVID-19 among undergraduates increases their attitude and practice level also increases.

Table 4: Correlation between knowledge, attitude and practice towards COVID-19 among undergraduate students

Variables	Mean	S.D	Karl Pearson's Correlation Value
Knowledge	14.30	3.42	**r = 0.441**
Attitude	40.95	4.49	**p = 0.0001, S*** **
Knowledge	14.30	3.42	**r = 0.523**
Practice	8.57	1.48	**p = 0.0001, S*** **
Attitude	40.95	4.49	**r = 0.406**
Practice	8.57	1.48	**p = 0.0001, S*** **

Association of level of Knowledge, Attitude and Practice towards Covid-19 with Selected Demographic Variables among Undergraduate Students

The Table-5 shows that the demographic variable gender and year of study had shown statistically significant association with level of knowledge towards COVID-19 among undergraduates at p<0.05 and p<0.01 level respectively and the other demographic variables had not shown statistically significant association with level of knowledge towards COVID-19 among undergraduates.

Table-5: Association of level of knowledge towards COVID-19 among undergraduate students with their selected demographic variables

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Gender							χ^2=6.559
Male	3	5.0	11	18.3	2	3.3	d.f=2
Female	2	3.3	23	38.3	19	31.7	p = 0.038 S*
Year of study							χ^2=17.464
First year	1	1.7	11	18.3	11	18.3	d.f=4
Second year	2	3.3	0	0	1	1.7	p = 0.002
Third year	2	3.3	23	38.3	9	15.0	S**
Fourth year	-	-	-	-	-	-	

The Table-6 shows that the demographic variable gender and year of study had shown statistically significant association with level of practice towards COVID-19 among undergraduates at p<0.01 and p<0.05 level respectively and the other demographic variables had not shown statistically significant association with level of practice towards COVID-19 among undergraduates

Table-6: Association of level of practice towards COVID-19 with their selected demographic variables among undergraduate students

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Gender							χ^2=11.067
Male	2	3.3	5	8.3	9	15.0	d.f=2
Female	0	0	4	6.7	40	66.7	p = 0.004 S**
Year of study							χ^2=9.733
First year	0	0	3	5.0	20	33.3	d.f=4
Second year	1	1.7	0	0	2	3.3	p = 0.045
Third year	1	1.7	6	10.0	27	45.0	S*
Fourth year	-	-	-	-	-	-	

DISCUSSION

The COVID-19 pandemic in India is part of the worldwide pandemic of corona virus disease 2019 caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) and keep on mutating the structure causes rapid spread of infection and severe illness. The rapid spread could control by adequate knowledge and adopting the appropriate behavior. The current study findings revealed that the participants had good level of knowledge, and possessing positive attitude and good practice towards COVD-19, none of the participants was totally unaware of the disease. Regarding the level of knowledge on COVID-19 among undergraduate students, 34(56.67%) had moderate level of knowledge, 21(35%) had adequate level of knowledge and 5(8.33%) had inadequate level of knowledge. This finding is similar to the study by Hani A. Naseef who reported that participants had a good knowledge level; less negative practices and the vast majority of the participants held a positive and very cautious practice towards the COVID-19 epidemic [11]. In another study by Hussein NR et al reported that students demonstrated good knowledge, appropriate practice, and positive attitude about the infection [12]. With regards to attitude in present study, 47(78.33%) had favorable attitude and 13(21.67%) had moderately

favorable attitude towards COVID-19. Out of 60 participants, 31(51.67%) participants were agreed that the COVID-19 prevention measures should only applied to older adults and group most at risk. The majority of participants were agreed 37(61.67%) that the lockdown is an effective measure to control the transmission of COVID-19, it was found that the majority of participants are neutral 32(53.33%) that the authority will be successful in controlling the infection. This finding is contrast with the conducted by Abdul Wadood et al who reported that more than one third of the students had negative attitude to avoiding public transport and going out to public places with friends and family, the perception towards COVID-19 was not good, and also found that knowledge, attitude, practice and perception of the university students regarding COVID-19 were not satisfactory, and this indicated that the situation was worse among common people [13]. This might be due to the initial startup of pandemic crisis. The Present also found that, the majority 34(56.67%). of the respondents were confident the battle against the infection will won by government, 38(63.33%) were agreed that the frequently washing the hands can prevent from COVID-19, 36(60.0%) were strongly agreed about knowing information regarding the number of COVID-19 cases is important for the

community, 47(78.33%) had an opinion that not everyone with COVID-19 will die and almost all the participants (58.33%) were strongly agreed with people with COVID-19 should not show any negative stigma through society.

Regarding practice, 54(90.0%) had washing hands frequently for at least 20 seconds, 55(91.67%) had not visiting to the crowded places, 17(28.33%) were wearing mask when leaving home, 43(71.67%) were avoided to wear face mask while leaving home, 57(95.0%) had following social distancing, 53(88.33%) had practicing of using sanitizer when staying around the public, 55(91.67%) participants were isolate themselves when they are having common cold during transmission period, 56(93.33%) had covering the mouth while they get cough or sneeze. In overall 49(81.67) had good practice. The present study finding is supported by Nawar Sahib Khalil et al reported that Medical students in Baghdad City had generally a higher level of knowledge, possess a positive attitude, and performed a good practice and proactive behaviors of preventive measures towards COVID-19 [14]. The participants for the current study were not a health professional. In another study by Abay Woday et al., conducted a study on knowledge, attitude, practice and associated factors towards COVID-19 among college students in Amhara region, Ethiopia and found that The level of good knowledge, positive attitude and good practice were 69.6%, 56.6% and 65% respectively [15]. Similarly a study by Bhawna Srivastava et al., concluded that students had moderate to a high level of knowledge about the COVID-19 and sufficient knowledge regarding its preventive measures and also reveals that 73.06% had good attitude and 70% of the respondents had good practices towards COVID-19 among university students of Madhya Pradesh [16].

The current study reveals that the Correlation value between knowledge and attitude, knowledge and practice, attitude and practice shows a moderate positive correlation which was found to be statistically significant at p<0.001 level. It clearly shows that when knowledge towards COVID-19 increases, their attitude and practice level also increases. The present study was supported by Rajon Banik et al., who reported that participants having adequate knowledge of COVID-19 had higher likelihood of positive attitudes [17]. Yaling Peng et al., also found the positive correlation between attitude and practice [18]. The current study reveals that there is a significant association occur between knowledge and practice with the selected demographic variable gender and year of study towards COVID-19 among undergraduate students shows at p<0.05 and p<0.01 level respectively and the other demographic variables had not shown statistically significant association with the level of knowledge and practice. There is no significant association between the level of attitude and demographic variable towards COVID-19 among undergraduates. This finding is related to the

study by Rajon Banik et al., reported that factors associated with adequate knowledge were being female, having a master's degree and above, and living in an urban area [17]. In contrast a study by Alian A Alrasheedy et al., shown that there was no significant association between participants' characteristics, ie their gender, education level, age, and health condition, and their attitude towards COVID-19 [19]. However there was a statistically significant association between gender and the practice of going out to crowded places during the pandemic. These findings indicate that still there is lack of knowledge and not having an attitude to practice the appropriate measures. Hence this study recommends for conducting in large sample including the general public and introducing an awareness program to enhance the knowledge and bring the desirable attitude to practice in day today life to battle COVID 19.

CONCLUSION
Findings of the present study revealed that, the arts and science college students had generally a moderate level of knowledge, possess a positive attitude, and performed a good practice and active behaviors of preventive measures towards COVID-19. There is a need to improve the knowledge to promote positive attitude and practice related to updated trends regarding COVID-19. The result of this study may by utilized as a baseline for planning awareness campaigns in the future.

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