

Original Research Article

Are people having adequate knowledge to prevent COVID-19 pandemic? A cross-sectional study

Rashpinder Kaur¹, Poonam Sharma², Deepika¹, Pavit Kaur¹, Rajni¹, Suchpreet Kaur Gill^{1*}

¹Eternal University, Baru Sahib, Himachal Pradesh, India

²Kol Valley Institute of Nursing, Harnora, District Bilaspur, Himachal Pradesh, India

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*Correspondence:

Dr. Suchpreet Kaur Gill,

E-mail: suchpreet@eternaluniversity.edu.in

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ABSTRACT

Background: The Covid-19 pandemic is still going on around the globe and prevention of this pandemic is depend on how much people are aware regarding COVID-19 disease. The present study was conducted with an aim to determine the level of knowledge towards COVID-19 among people.

Methods: Present study included cross sectional descriptive survey design which was conducted on 366 participants who visited in university during 2020. Convenient sampling technique was chosen for selection of samples. A self-structured knowledge questionnaire was used for data collection. Descriptive and inferential statistics were used to analyse the data in SPSS.

Results: Study findings revealed that there were 343 (93.7%) female participants and were students (86.3%). Overall, more than half (60.1%) of participants had good knowledge while 37.2% had average knowledge on COVID-19. Significant difference was found among participants' group ($p > 0.001$), gender ($p = 0.021$), education ($p = 0.002$), marital status ($p = 0.002$), age ($p = 0.021$), and inhabitants ($p = 0.002$). Participants showed poor knowledge on COVID-19 susceptibility (81%) and diagnosis (90%) aspects.

Conclusions: Study concluded that many people were still had average and poor knowledge on COVID-19. Higher authorities must find the ways for making people more aware on this pandemic to control its impact.

Keywords: COVID-19, Knowledge, People

INTRODUCTION

Corona viruses are a large family of viruses which may cause illness in animals or humans. In humans, several corona viruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered corona virus causes corona virus disease COVID-19.¹

World Health Organization (WHO) along with Chinese authorities started working together and the etiological agent was soon established to be a new virus and was named Novel Corona Virus (2019-nCoV).² Meanwhile, on 11th January China announced its first COVID-19 related death of a 61-year-old man, exposed to the seafood market (WHO, 2020). Over a period of few weeks, the infection spread across the globe in rapid pace (WHO, 2020). Looking at the stretch of countries this outbreak spread to, WHO declared it a Public Health Emergency of International Concern on 30th January 2020.³⁻⁴

The best way to prevent and slow down transmission is be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow).^{5,6}

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject. Knowledge about COVID19 pandemic is very important aspect for everyone because this pandemic disease affected all age group, race, and color without any limitation. As this disease spreading very firstly so that every person should know about COVID19 prevention or breaking down the transmission.^{7,8}

This pandemic situation of COVID-19 has necessitated the need to make the people aware about this to encourage them to practice the precautionary measures in order to have a control over the situation. This highlights the need to assess the knowledge of the people regarding COVID-19 in order to get information about people's cognitions and ideology. This will help the health professionals and government officials to know the areas which need more attention and thus take necessary steps and make new laws and policies on the basis of current knowledge and behaviour of people.

METHODS

A cross-sectional descriptive research design was used for the present study and was conducted among people attending private universities of District Sirmour, (H.P.) to assess their knowledge regarding COVID-19. This study was approved by the Institutional Review Board (IRB) of Eternal University. Informed written consent for voluntary participation was taken from each participant, and they were assured for the confidentiality of information and anonymity of informants. Inclusion criteria for participation in the study was participants willingness and ability to use internet and able to understand English or Hindi language.

Data collection

Data were collected through online survey. Google forms were created and sent on the email or phone of people, who visited private universities of District Sirmour, (H.P.) during month of August, 2020. The sample was selected by non-probability sampling (voluntary sampling). All the participants were explained about the purpose of the study and instructed to fill the form completely. Participants'

consent was secured and they were made assured that their anonymity will be maintained.

Sample size calculation

The estimated sample size of the present study was 350, which was calculated by using equation:

$$n = (NZp(1 - p)) \div (d \times d(N - 1)) + (Z \times Zp(1 - p))$$

Where, we assume 5% margin of error and 95% confidence interval with 50% prevalence was considered for calculation.⁹ A total 380 people were recruited for this study and a sample of 366 eligible people, who fulfilled the inclusion criteria were enrolled.

Study instrument

The Questionnaire was adapted from "the current interim guidance and information for people" published by WHO. A modified form of standardised questionnaire by WHO, considering the countrywide variations was used as tool. It was consisted of closed ended questions and was divided into two sections viz., socio-demographic variables which include age, gender, marital status, batch/year (for students), monthly income (in rupees), educational status, residence, work experience (for faculty), job detail-post (for faculty), current health status, marital status, religion, type of family while second section assess research variables (knowledge) which include total items. The minimum and maximum scores were 0 and 40 respectively. Scores between 29 to 40; 21 to 28 and below 20 were categorised as good, average and poor knowledge respectively.

Data analysis

All data were coded, entered and analyzed using statistical package for social science (SPSS) version 23 and made meaningful by standard statistical measures. Descriptive statistic comprised frequency, percentage, mean and standard deviation. Inferential Statistic was including ANOVA, Independent t test, linear and logistic regression.

RESULTS

Table 1 reflects that majority of participants (91.5%) were of age group 16-30 years and mostly (93.7%) were female.

High numbers of participants (86.3%) were students and 75.1% pursuing graduate programme. More than two third (70.0%) of participants belongs to Hindu religion and 90.7% were unmarried. More than half (53.8%) of participants belong to rural area and 37.4% participants living in area of 5,000 inhabitants and 35.2% subjects having no idea of population of their area. Nuclear family type is shared by two third (69.7%) participants and 76.0% participants having 3-8 family members. Nearly all 97.8% of participants were free from any chronic illness.

Table 1: Frequency and percentage of Socio demographic variables of participants.

Socio-demographic variables	Categories	Frequency	Percentage(%)
Group	Students	316	86.3
	Faculty	50	13.7
Age (years)	16-30	335	91.5
	31-45	25	6.8
	46-60	4	1.1
	61-75	2	0.5
Gender	Male	23	6.3
	Female	343	93.7
Education	Graduate program	275	75.1
	Post-graduate program	57	15.6
	Doctorate program	34	9.3
Religion	Hindu	282	77.0
	Muslim	9	2.5
	Sikh	71	19.4
	Buddhist	3	0.8
	Christian	1	0.3
Place of living	Rural	197	53.8
	Urban	100	27.3
	Semi-urban	69	18.9
Marital status	Married	34	9.3
	Unmarried	332	90.7
Type of family	Nuclear	255	69.7
	Joint	111	30.3
Number of family members	<3	34	9.3
	3-8	278	76.0
	9-14	42	11.5
	>14	12	3.3
Inhabitants	5,000	137	37.4
	5,001-20,000	46	12.6
	20,001-100,000	20	5.5
	100,001-500,000	12	3.3
	>500,000	22	6.0
	Do not know	129	35.2
Chronic illness	Yes	8	2.2
	No	358	97.8

Table 2: Association of Socio-demographic variables of participants with Knowledge scores.

Sociodemographic variables	Categories	Mean±SD	F/t value	P value
Group	Faculty	30.66±3.19	-3.58	<0.001*
	Students	28.60±3.84		
Age (years)	16-30	28.70±3.82	3.29	0.021*
	31-45	31.0±3.09		
	46-60	30.0±5.09		
	61-75	31.5±0.70		
Gender	Male	30.95±3.29	-2.703	0.007*
	Female	28.74±3.82		
Education	Education	31.50±0.70	9.78	<0.001*
	Engineering	27.75±5.61		
	Graduate program	28.44±3.82		
Religion	Post-graduate program	29.63±3.81	0.396	0.811
	Doctorate program	31.23±2.73		
	Hindu	28.94±3.92		
	Muslim	29.66±2.23		

Continued.

Sociodemographic variables	Categories	Mean±SD	F/t value	P value
	Sikh	28.57±3.61	1.67	0.188
	Christian	26.00±00		
	Buddhist	29.66±4.16		
	Urban	28.80±3.81		
Place of living	Rural	28.67±3.76	3.185	0.002*
	Semi-urban	29.63±3.98		
	Married	30.85±3.25		
Marital status	Unmarried	28.68±3.82	1.17	0.240
	Nuclear	29.04±3.73		
Type of family	Joint	28.53±4.01	2.104	0.099
	<3	30.20±3.11		
Number of family members	3-8	28.83±3.97		
	9-14	28.64±3.47		
	>14	27.33±2.38	3.87	0.002*
Inhabitants	5,000 inhabitants	29.30±137		
	5,001-20,000 inhabitants	28.82±46		
	20,001-100,000 inhabitants	29.10±20		
	100,001-500,000 inhabitants	30.75±12		
	>500,000 inhabitants	30.86±22		
	Do not know	27.92±129		
Chronic illness	Yes	31.12±3.27	1.677	0.094
	No	28.83±3.82		

Figure 1 showed that majority of participants 60.1% having good knowledge while 37.2% and 2.7% having average and poor knowledge respectively regarding the corona virus pandemic. Figure 2 present participants' knowledge scores on different aspects related to COVID-19 and study found that majority of participants had poor knowledge on COVID-19 susceptibility (81%) and diagnosis (90%) while majority of them had good knowledge on COVID-19 spread (71%), incubation period (89%), treatment (89%) and prevention (78%).

Table 2 represent the association of socio-demographic variables of participants and their knowledge score. It shows that group ($p>0.001$), gender ($p=0.021$), education ($p=0.002$), marital status ($p=0.002$), age ($p=0.021$), and inhabitants ($p=0.002$) were significantly associated with knowledge.

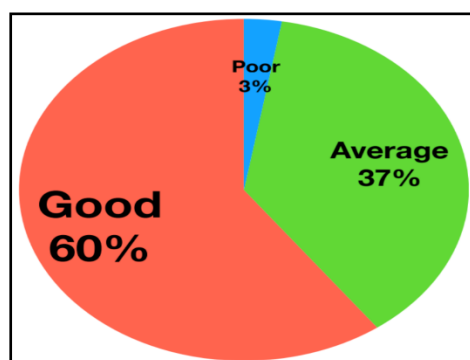


Figure 1: Participants' overall knowledge regarding COVID-19.

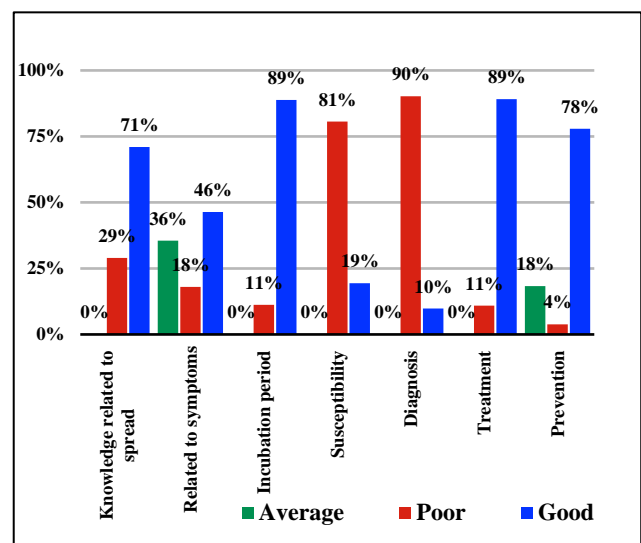


Figure 2: Participants' knowledge on different aspects of COVID-19.

DISCUSSION

COVID-19 pandemic can be extremely difficult and stressful to people around the globe, but this situation can be controlled by make people aware and confident in preventing of COVID-19 by initiation of adequate education on COVID-19 preparedness.

With regards to the socio-demographic characteristics of participants in this study. Similar results were found in other study conducted by Zegarra-Valdivia which depicted

that the general respondents were between eighteen and twenty nine years (56.8%), being feminine (n=134), and graduated professionals (69.3%) 10 whereas a study done by Rugarabamu show that the mean age of study participants was 32 years, and majorities were females 216 (54.0%).¹¹

Rugarabamu revealed good knowledge, optimistic attitudes, and appropriate practices towards COVID-19.¹¹ Bao-Liang Zhong explained that most Chinese residents of a relatively high socioeconomic status, in particular women, are knowledgeable about COVID-19, hold optimistic attitudes, and have appropriate practices towards COVID-19.¹² Findings of a study done by Khanz et al showed that respondents have good knowledge (93.2%, n=386), positive attitude (Mean 8.43, SD: 1.78) and good practice (88.7%, n=367) regarding COVID-19.¹³ Comparable findings were seen in the present study elucidating good knowledge among 60% of the subjects with more than four-fifth (88%) of the sample rated good self-assessed knowledge.

In a survey done by Gupta et al, the finding revealed that knowledge regarding viral transmission, clinical-radiologic features, laboratory diagnosis and treatment was adequate among most students. However, the understanding of the incubation period and time to symptoms was less than satisfactory.¹⁴ Few contrast finding were seen in the pre-sent study. Knowledge regarding spread (transmission), incubation, treatment and prevention was good among 71%, 89%, 89% and 78% respectively. While knowledge was found poor on susceptibility and diagnosis aspects among 81% and 90% participants respectively. The results of a study done by Nair signifies that more than three-fourths of the responders were aware of the various infection control measures like rapid triage, respiratory hygiene, and cough etiquette and having a separate, well ventilated waiting area for suspected COVID-19 patients.¹⁵ Ranjan R described that 56.3% of the participants had adequate knowledge, 25.2% participants had moderately adequate and in 18.5% participants had inadequate knowledge regarding prevention of COVID-19.¹⁶ The findings of our study were consistent with them.

Limitations

This study was limited to a particular university in India and involved people who visited this university only. Convenient sampling technique can lead to selection bias. Author had to rely on the information provided by the participants so generalizability of the findings should be done cautiously.

CONCLUSION

As COVID-19 disease drastically affected all the countries of the world with very high morbidity and mortality rate, so an attempt was made to enhance the knowledge regarding COVID-19 among people. The people attending

educational institutes are expected to have good knowledge because they are among the literate section of the society who can participate in making the community more aware on prevention strategies and thereby contributing to-wards the fight of countries' governments against the disease. Thus, the government should strengthen knowledge-improving strategies in order to keep check on the spread rate of the COVID-19.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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