

Knowledge and Perceptions on COVID-19 among the University Students in Odisha: An Online Survey

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ABSTRACT

The most recent outbreak of the highly infectious acute respiratory syndrome (SARS)-CoV-2 has grappled the world. Human behavior and awareness assessment during this crisis is crucial in an effort to contain the pandemic.

Objectives: We conducted this study to assess evaluation of awareness, attitude, prevention, expectations, and precautionary measures against COVID-19 among the university students in Odisha.

Methods: This is a comprehensive cross-sectional study that was conducted as an online survey using an online self-completed questionnaire. The participants were students enrolled in different universities in Odisha. The questionnaires were divided into four main sections: general health knowledge, sterilisation, prevention, and precautionary measures on COVID19.

Results: Most of the students (85.8 %) believed that consuming antibiotics is not useful, 75.9% considered that washing hands with normal water is helpful and 61.8 % believed drinking a hot drink will help prevent COVID-19.

Where 54.7% of participants followed the world health organization as the primary sources of information and 27.4% of the participants used social media to obtain information about (SARS)-CoV-2. Most of the participants (99%) agreed that self-isolation and maintaining distance can decrease the spread of COVID-19. The majority of the respondents had sufficient knowledge and their attitude and perception towards Covid-19 preventive measures was satisfactory.

Conclusion: Odisha Universities students demonstrated an expected level of awareness about the COVID-19 virus and implemented effective strategies to prevent its spread.

KEYWORDS: Covid-19, students, information, spread

INTRODUCTION

COVID-19 was first reported by the World Health Organization (WHO) on the 31st December 2019 after receiving a report on outbreak of pneumonia of unknown causes in Wuhan, China. It was announced as a global pandemic on 11th March 2020. COVID-19 is a highly contagious disease caused by newly identified Coronavirus called severe acute respiratory syndrome corona virus 2 (SARS COV-2).^[1] COVID-19 is caused by a single-stranded RNA virus from Coronaviridae family and the disease is similar to the previously emerged SARS-CoV and the Middle East respiratory syndrome Coronavirus (MERS-CoV). Since the onset of first pneumonia case reported in late December 2019, the virus has rapidly spread to 218 countries. All cases reported from outside China have a history of recent travel to China. The virus transmit from person to person especially when they come in close contact with somebody sick. Corona viruses are ecologically diverse with the large variety seen in bats, suggesting they are the natural reservoirs for many of these viruses.^[2] Knowledge of (SARS)-CoV-2 is still evolving, but anecdotal evidence suggests that patients can be asymptomatic and infective for up to 14

days.^[3] Fever is often the major and initial symptom accompanied by either no symptom or other symptoms such as dry cough, shortness of breath, muscle ache, dizziness, headache, sore throat, rhinorrhea, chest pain, diarrhea, loss of taste, nausea, and vomiting. Some patients experienced dyspnea and/or hypoxemia one week after the onset of the disease.^[4] An estimated basic reproduction number (R0) for Covid-19 is 2.2, which means each infected person can spread infection to two additional persons. Until this number decrease 1.0, there is a probability that the outbreak will keep spreading. Recent reports of rising titres of virus in the oropharynx early in the trajectory of disease elicit worry about increased infectivity during the period of minimal symptoms.^[5] The scientific knowledge with respect to SARS-CoV-2 and COVID-19 is evolving each day and new data is generated everyday as scientists continue to study the COVID-19 pathogenesis. The COVID-19 crisis can stay for a long time with extended impact on people mental health as well. The best way to fight and overcome the epidemic is to be aware of the appropriate information and follow government recommended health guidelines. University

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students have greater access to social media and freedom in terms of living independently, however, they may not have adequate information. Since the university students are young and highest population representing the country, their understanding and actions can have a major impact on the spread of a pandemic. Therefore, it is important to understand and evaluate students knowledge and awareness on COVID-19. We conducted an online survey to access knowledge, attitude, and practice associated with Covid-19 among university students in Odisha universities.

Materials and methods:

A cross-sectional survey was conducted from 2nd of June to 25th of July, 2020 during the isolation.

Based on an online survey, 212 students were selected from different faculties for data collection. No significant problems were encountered during the survey. The study was conducted using an online survey via Google form, self-administered questionnaire, including closed questions completed by students. The standard questions were prepared in accordance with Public health information & COVID-19 guidelines provided by Government of India. The questionnaire of the study was divided into five sections:

- Section I consisted of questions on socio-demographic characters of students, which include age, department of study, residence, nationality and the educational level.
- Section II comprised of questions on the students knowledge on corona virus (6 questions). The questions were designed on general health, mode of prevention, effect of regular exercise, effect of smoking and types of food. For each question, there were two possible response, yes or no. The correct answer was considered if a suitable answer was given for each question (either yes or no). Students were asked to mark the correct answer. For each question, 1 was assigned for a correct answer and 0 for an incorrect answer. Total knowledge scores for each student, therefore, ranged from 0 to 6. Students with higher scores had more knowledge about coronavirus infection than students with lower score.
- Section III included questions on sterilization and types of sterilisers used and hand sanitization and masks sterilisation. For each question, there were two possible options, Yes or No.
- Section IV included questions on prevention, spread, interaction and transmission of COVID-19. For each question, there were two possible response, Yes or No.
- Section V included questions about precautions and source of information on coronavirus.

Result and discussion:

An online survey of Indian and International students studying in the universities of Odisha was conducted during the corona pandemic. A total of 212 responses were recorded. All the participants were above 17 years of age. The study included the participants who were fluent in English and had access to the internet. The students age ranged from 18 to 45 years, 42.46% were females and 57.54% were males. More than 75.47% of participants were from urban areas.

1. General health

Conservation of existing personal protective equipment (PPE) is important, as recommended by the Centers for Disease Control and Prevention Because excessive use of

personal protective equipment exposes it to lost. Some commentators called for suspending practices that consume large amounts of personal protective equipment and are of uncertain effectiveness, such as contact precautions for some infectious diseases, to free up supplies.^[6] Many scientists suggested to reuse PPE by sterilization with ethylene oxide, UV or gamma irradiation, ozone, and alcohol. There were also new suggestions such as mask-fibre impregnation with copper or sodium chloride. We cannot overcome this crisis without increasing the knowledge of people about Covid-19. We should know how virus can transfer to our bodies, so that knowledge of students is very important to stop the spread of Covid-19 over Odisha state.

Table 1 presented the general knowledge of students on COVID 19, which largely depends on their awareness on general health. Out of the total participants, 61.8% believed that drinking hot drink will help in prevention coronavirus. Furthermore, 18.39% of students believed that having a good physical health will protect them from COVID-19. 82.1% participants acknowledged that doing regular exercise will be helpful. 63.67% students agreed that consuming specific food might be important to confront COVID-19 and more than 85.8% of the participants agreed that taking antibiotics will not be help. Approximately, 50% of them believed that non-smokers will have better chance to recover well after Covid-19 infection, whereas 36.3% of them provided an neutral answer. Remaining, 13.7 disagreed.

2. Sterilisation

Most subjects believed that sterilization will affect the structural safety of PPE, as there is some evidence that the fibres in masks and respirators that filter viral particles can degrade and lose their effectiveness with PPE reprocessing.

filters used in respirators such as N95 devices are useful. Few suggested designing masks from air-conditioning filters or vacuum cleaner bags.

These commercially available household anti-allergen filters have a minimum efficiency reporting value (MERV) of 13 or 14 for their filtering capability, meaning they will decrease the movement of particles bigger than 0.3 μm by 50% or 75%, respectively. N95 respirators are 95% effective for these particles and similar to a MERV 16 filter. Although the SARS-CoV-2 particle is less than 0.2 μm , the water droplets carrying it are bigger and largely blocked by these filters. Several participants proposed using snorkel masks and tubes, which can be easily cleaned and reused.^[7]

The knowledge of students on sterilization is summarized in Table 1. Considerable number of responders were possibly aware of the basic elements of the sterilization techniques (Table 1). Out of the total participants, 75.9% answered that washing hands with just normal water is sufficient to prevent COVID-19. Most of the students (82.1%) agreed that a medical mask can be reused again. About 72% of participants disagreed that a bleach should be mixed with any other product to make a good sterilizing solution. 43.9% of participants admitted using a sterile agent for sterilizing the mask, 37.8% used hot water for sterilizing the mask, 12.5 % of participants reported using sun rays for sterilizing the mask and 5.8% preferred to use normal water for sterilizing the mask. 6.9% of participants believed that a regular hot water bath would prevent COVID-19. Most participants

(95.8%) agreed that COVID-19 cannot be killed by cold temperature.

3. Prevention:

SARS-CoV-2 is extremely contagious and can be transmitted by coughing or sneezing, and also through direct contact with objects contaminated by the virus.^[8] In addition, the virus was also observed in faeces, which constructs a new probability of faeces-to-mouth transmission.^[9]

The first line of defence that could be used to reduce the chance of infection is by using face masks; both the use of surgical masks and N95 respirator masks (series # 1860s) helps prevents the spread of viruses.^[10]

Surgical face masks block liquid droplets from a conceivably infected person through air or sticking onto surfaces of materials, where they could be transmitted to others.^[11] Because particles can penetrate thickness of five surgical masks assembled together, health-care providers in direct contact with patients must wear N95 series # 1860s masks but not surgical masks.^[12] In addition to masks, health-care providers should use fitted isolation suits to further decrease the contact with viruses. Viruses can also infect an individual through the eyes. On January 22, 2020, a doctor was infected with SARS-CoV-2 although he was wearing an N95 mask; the virus might have entered his body through his inflammatory eyes.^[13] Thus, health-care providers should also wear transparent face protection or goggles while interacting with patients. Table 1 showed that 59.4% of the participants answered that the virus spreads through interaction between people. A total of 63.2% students agreed that only patient should use a protective mask. 99% of the participants believed that self-isolation could stop COVID-19 from spreading. Further, 97.6% of them were aware that keeping the distance between people can decrease the spread. Approximately, 25% of participants believed that contact with pets exposes the risk to COVID-19 and 15% of the subjects thought that the virus can be transmitted through mosquito bites.

4. Precautions:

The general precaution for the people in affected or possibly affected areas is to frequently wash hands with soap and stay indoors/self-quarantine to decrease probability of contact with infected people. According to new guidelines, a 6 feet of physical distancing between people is recommended to reduce the risk of catching an infection.

At least 66% of the participants agreed for coronavirus testing on developing a fever (Table 1). A total of 97.2% agreed on reporting the case if they know someone is infected by COVID-19. Most of participants (54.7%) believed that World Health Organization is the reliable source of COVID-19 related information. Approximately, 27.4% of the participants reported that they used social media (Facebook, Twitter, WhatsApp, YouTube, Instagram, Snapchat) for information on COVID-19, nearly 11.3% of the participants used newspapers and about 6.6% used other sources to get the required information. A total of 97.6 % of participants agreed to report if they have symptoms similar to COVID-19.

Conclusion:

During the corona virus pandemic, most people were aware of the infection, possible preventive actions, the importance of self-isolation, lockdowns, and government actions taken to

prevent the spread of infection. However, there was increased fear and anxiety among the people about getting the COVID-19 infection. We identified a significant gap in the general information, poor knowledge levels, and differences in understandings among our study participants. As the global crisis of COVID-19 continues to emerge, government is increasing efforts through educational leaflets targeting people and health care workers. We thank all the study participants for their response and for providing essential information.

Limitations:

Despite the valuable addition of this study in exploring the knowledge of university students toward COVID-19 infection, this study was limited to the people who had access to internet and social media (e-mail, Facebook) and were fluent in English. This survey represent only the educated mass of the country, so it may not be extended to the entire population of the country. The awareness among uneducated people with regard to COVID-19 might be completely different from the results of this study. The possibility of respondent's bias cannot be ruled out in the study.

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Declaration of Competing Interest:

None.

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Table 1 Participants response to online survey

S. no.	Knowledge items	Number of correct answers; n=212	Percentage, (%) of correct answers; n=212	
1.	Drinking hot drink will help prevent COVID-19	131	61.8	
2.	A sound healthy body will protect you from COVID-19	173	81.61	
3.	Doing regular exercise help prevent COVID-19	174	82.1	
4.	Type of food is important to confront COVID-19	135	63.67	
5.	Taking antibiotics is useful against COVID-19	182	85.8	
6.	Non-smokers have more chance to get well after infected by Covid-19	106	50	
Sterilisation				
7.	Washing your hands only with normal water is useful to prevent COVID-19	161	75.9	
8.	You can reuse a medical mask again after interact with people	174	82.1	
9.	Mixing Bleach with cleaner to make a good sterile	120	56.6	
10.	Ways for sterilizing the mask	93	43.9	
11.	Having a regular hot water bath would prevent COVID-19	144	67.9	
12.	Killing of COVID-19 by cold climate or ice	203	95.8	
Prevention				
13.	COVID-19 spreads through interaction with people	86	40.6	
14.	Protective mask is useful for patients only	134	63.2	
15.	Self-isolation could stop the spread of COVID-19	210	99	
16.	Keeping distance between people can decrease the spread of COVID-19	207	97.6	
17.	Direct contact with pets exposes you to COVID-19	159	75	
18.	COVID-19 can be transmitted through mosquito bites	180	85	
Precautions				
19.	If you got a fever, will you test for COVID-19?	140	66	
20.	If you know someone has infected, would you report it?	206	97.2	
21.	The source for reliable information about COVID-19	World health organization	116	54.7
		Social media	58	27.4
		Newspapers	2	11.3
		Others	14	6.6
22.	If you experience symptoms similar to COVID-19, would you report it?	207	97.6	