Original Research Article

"KNOWLEDGE, ATTITUDE AND PRACTICES (KAP) ABOUT CORONAVIRUS SARS-CoV-2 AMONG THE GENERAL PUBLIC"

ABSTRACT

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Background: A Knowledge,Attitude and Practices(KAP) survey is a quantitative method (predefined questions formatted in standardized questionnaires) that provides qualitative and quantitative information. Measure the extent of a known situation; provides new tangents of a situations reality This has resulted in the public becoming more cautious, thereby minimizing the transmission of the disease to a certain level.
Introduction:Covid-19(COVID-19 is disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. the most common symptoms which appear 2-14 days after exposure [2].Headache, abdominal pain, diarrhea, sore throat and muscle weakness are some of the less common symptoms experienced by some people, while some others may not develop any symptoms until later.This study is conducted to understand the extent of awareness among the general public and the importance of preventing the spread of Coronavirus infection in the community. An online questionnaire survey is conducted consisting the essential parameters about the important aspects of disease spread.
Objective: To assess Coronavirus awareness among people.To understand the attitude of people towards Coronavirus
Results:A total number of 564 participants took part In this study during the study period of 6months. Among which 325 were male and 239 were female. The male participants compromised the majority percentage (57%) of the total number of participants while the female participants comprised only (42.4%) of the participants. The result showed a significant correlation between female gender, higher age, and higher education, with knowledge, attitude, and practice.
Conclusion: To adhere to the guidelines released by the Government and the guidelines provided by the WHO have played an extremely vital role in improving the knowledge and awareness among the general population which in turn brought positive effects in people's attitude and practices towards Coronavirus since the WHO's declaration of Coronavirus as a pandemic.This has resulted in the public becoming more cautious, thereby minimizing the transmission of the disease to a certain level. Several public health measures which are now being implemented around the world will hopefully diminish the spread of the virus while safe and effective treatments and vaccines are being developed to terminate it.

Keywords: COVID, Attitude, Knowledge, Practice, Residents, Survey.

1. INTRODUCTION

(COVID-19 is disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCoV'. Corona virus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus.COVID-19 (also called SARS-CoV-2) is a novel respiratory virus which emerged from Wuhan City, Hubei, China [1]. It was reported to be transmitted by animal-to-human and human-to-human interaction. The viral outbreak eventually turned out

to be a pandemic, resulting in an enormous number of human deaths.There is an exponential growth in the cases following the development of the epidemic. Coronavirus causes a variety of symptoms in people who are infected. Not all the people infected with Coronavirus will exhibit the same symptoms. Fever, dry cough, shortness of breath, fatigue or body aches are few of the most common symptoms which appear 2-14 days after exposure [2].Headache, abdominal pain, diarrhea, sore throat and muscle weakness are some of the less common symptoms experienced by some people, while some others may not develop any symptoms until later. Asymptomatic cases have also been observed to be a major issue of concern and have become one of the major contributors for viral transmission among the healthy population.This study is conducted to understand the extent of awareness among the general public and theimportance of preventing the spread of coronavirus infection in the community.An online questionnaire survey is conducted consisting the essential parameters about the important aspects of disease spread, the causative agent, the importance of practicing personal hygiene and maintaining physical distance, etc., to prevent the spread of the disease.Physical, social distancing has been considered an important preventive measure to control the spread of the virus [3], causing the Government to enforce a nation-wide lockdown which resulted in the slowing down of the national as well as the global economy. India is a highly populated country where physical, social distancing is not a general practice but it has become vital in curbing the transmission of the deadly virus.

History of Coronavirus:

On 31 December 2019,WHO was informed of cases of pneumonia of unknown cause in Wuhan city, China. A novel coronavirus was identified as the cause by Chinese Authorities on 7 January 2020 and was temporarily named “2019-Ncov”.Coronaviruses (coV)are a large family of viruses that cause illness ranging from the Common cold to more severe diseases.A novel coronavirus (ncoV) is a new strain that has not been previously identified in humans. The new virus was subsequently named the “Coronavirus”.On 11 March 2020,the rapid increase in the number of cases outside China led the WHO Director- General to announce the outbreak could be characterized as a Pandemic.Since, the first cases were reported, WHO has worked to support countries to prepare and respond to the Coronavirus pandemic.

HOW IT SPREADS:

The virus that causes Coronavirus is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces. A person can be infected by breathing in the virus if they are within close proximity of someone who has Coronavirus, or by touching a contaminated surface and then the nose, eyes, or mouth.

ETIOLOGY:

The etiology of COVID-19 was attributed to a novel virus belonging to the Coronavirus (CoV) family.[4]On February 11 2020, the WHO director –general, Dr. TedrosAdhanomGhebreyesus, announced that the disease caused by this new CoV was a “COVID19” which is the acronym of “Coronavirus disease 2019”.

EPIDEMIOLOGY

Globally, over 150 million confirmed cases of Coronavirus have been reported.In the past week the number of new Coronavirus cases and deaths continues to decrease with over 3.5 million new cases and 78 thousand new deaths reported globally.Case and death incidences remain at high levels and significant increases have been reported in many countries in all regions.

PATHOGENESIS:

When a healthy individual inhales the droplets containing the virus coughed up or sneezed by an infected person, the virus enters into the host body and binds to the host cell receptor ACE-2 via S1 sub- unit of viral spike protein which leads to conformational changes in the viral spike protein. [5]The virus then penetrates into

the host cell by the fusion of viral and host cell membrane via S2 subunit of spike protein/ receptor mediated endocytosis.The viral nucleocapsid enters into the host cell and releases its viral contents.

The viral RNA undergoes replication, transcription and translation.After maturation, protein biosynthesis occurs in the cytoplasm which leads to the release of new viral particles.The newly formed viral particles get transported via Golgi vesicles to the cell membrane and moves into the extracellular space via exocytosis, thereby leading to the multiplication and spreading of the virus.This new infective material gets released from the infected individual through coughing or sneezing and leads to community transmission of the virus.

DIAGNOSIS:

At present, confirmation of cases of Coronavirus is based on the detection of viral RNA by nucleic acid amplification tests(NAAT) such as real-time **Reverse Transcriptase Polymerase Chain Reaction(RT- PCR)** with confirmation by nucleic acid sequencing when necessary.The viral genes targeted so far include the N, E, S, ORF and RdRp genes.

COMPLICATIONS:

Although most people with Coronavirus have mild to moderate symptoms, the disease can cause severe medical complications and lead to death in some people.

Older adults or people with existing medical conditions are at greater risk of becoming seriously ill with Coronavirus.

Complications can include:

a) Pneumonia and trouble breathing.

b) Organ failure in several organs.

c) Heart problems.

d) A severe lung condition that causes a low amount of oxygen to go through your blood stream to your organs (Acute Respiratory Distress Syndrome).

e) Blood clots.

f) Acute kidney injury.

g) Additional Viral and bacterial infections.

RISK FACTORS:

Adults of any age with the following conditions are at increased risk of severe illness from the virus that causes Coronavirus. [6]They are Cancer, Chronic kidney disease, COPD(Chronic Obstructive Pulmonary Disease),Heart conditions like Heart Failure, Coronary artery disease or Cardiomyopathies, Immunocompromised state from solid organ transplant,Obesity,Pregnancy,Smoking,Type-2 Diabetes Mellitus, Sickle cell Anemia.

TREATMENT:

Scientists around the world are working to find and develop treatments for Coronavirus.Optimal supportive care includes oxygen for severely ill patients and those who are at risk for severe disease and more advanced respiratory support such as ventilation for patients who are critically ill.Dexamethasone, is a corticosteroid that can help reduce the length of time on a ventilator and save lives of patients with severe and critical

illness.Remdesivir, Hydroxychloroquine, Lopinavir/Ritonavir and interferon regimens are some of the drugs approved by WHO for the treatment of Coronavirus. [7]Later on, the WHO issued a conditional recommendation on 20 November 2020 against the use of Remdesivir in hospitalized patients, regardless of the disease severity as they hadn't found any evidence that Remdesivir improved the survival and other outcomes in Coronavirus patients.

METHODOLOGY:

This is a cross-sectional, observational, multi centric study that was conducted for 6 months. A structural data collection form in the form of a questionnaire was designed for data collection and sent online to several people. The responses of the participants were then collected, the data was interpreted and results were generated. The results were then analysed to find the final report. The participants belonging to the age group of 15 to 60 years, both male and female who can read and/or write English were included in this study.

3. RESULTS AND DISCUSSION

A total of 564 participants took part in this study during the study period of 6 months.

The present study was conducted to assess the awareness of Coronavirus among the people and their attitude towards the same. This study was a multi centric and the sample size was analyzed as per our inclusion and exclusion criteria.

A total of five hundred and sixty four people participated in this cross- sectional study andshowed a good sense of knowledge, attitude and practices towards the ongoing Coronaviruspandemic as concluded in a previous study by Saadatjoo S. et al.

This survey was taken by both male and female participants (see Table 1) in which the percentage of maleparticipants (57.6%) comprised the majority and we found no sex differences aboutKnowledge, Attitude and Practices towards Coronavirus as both males and females were foundto be well-versed with Knowledge, Attitude and Practices towards Coronavirus as previouslyobserved in a cross-sectional survey conducted by Okello G. et al in 2020 on Knowledge, Attitude and Practicesabout Coronavirus in Uganda.

Participants between the ages 15-60 years took part in the survey (see Table 2) and most of them fall underthe age group of 15-25 years (59.4%).Among the different occupations and educational backgrounds taken into consideration (see Table 3) in thissurvey students belong to the majority percentage (44.4%) of the population to haveparticipated in this survey and were observed to have a desired level of knowledge, attitudeand preventive measures towards Coronavirus and similar results were obtained from a previousstudy conducted by Noreed K, Rubab Z et al in 2020 among medical students in pakisthan[8]. this study shows that all the participants have very good knowledge, attitude and practicestowards Coronavirus

The occupation and educational background of the participants in this study did not have anysignificant correlation with their knowledge, attitude and practices towards Coronavirus.In this study, from the data shown in Table 4, we understand that the participants have goodknowledge and awareness about Coronavirus, the cause of this infection, its transmission, theduration of the virus' survival outside the host body, its symptoms and whether or not theymight have come in contact with an infected person, with an average of 66.37% of theparticipants answering yes and 33.63% of the participants answering no.

According to the current study and the data shown in Table 5, we understand that the majorityof the participants (66.69%) were observed to have a healthy and positive attitude towardsCoronavirus which included the use of face masks, washing of hands several times a day, practicing physical/social distancing and covering their nose and mouth while coughing orsneezing with elbow or tissue.

The findings in this study in Table:6 showed that the vast majority of the participants (52.55%)had very good practices towards Coronavirus like maintaining hand hygiene, following theinstructions given by the local, State and National authorities with regard to Coronavirus,avoiding participation in meetings, social gatherings or crowded places, cleaning and sanitizingfrequently touched surfaces, objects and products ordered from outside, limiting the order offood and also the consumption of nutritious food/supplements or immunity boosters to improvetheir immunity against Coronavirus.One

disturbing fact is that only 46.28% of the participants discarded their disposable masksafter using for few hours as per the guidelines provided by the WHO.

As per the findings of this study, the vast majority of the participants had very good knowledge,healthy attitude and good practices towards Coronavirus. More efforts need to be made in educating the public and creating more awareness about Coronavirus which may prevent or at least reduce the spreading of the disease as concluded by previous studies conducted by Adhena G and Hidru HD [(10)]; Ferdous MZ, Islam MS, Sikder MT et al [(11)]; Kaushik M, Agarwal D, Gupta AK [(14)]; Reuben RC, Danladi MM, Saleh DA et al ; and Erfani A, Shahriarirad R, Ranjbar K et al.

Table:1 Gender-wisedistributionofparticipants

Gender	Number	Percentage
Male	325	57.6%
Female	239	42.4%

Table:2 Age-wise distribution of population.

Age	Number	Percentage
15 - 25	335	59.4%
26-40	144	25.5%
41 - 50	56	9.9%
51 - 60	14	2.5%

Table:3 Occupation-wisedistributionof participants.

Occupation	Number	Percentage
Student	246	44.4%
Private Employee	160	28.3%
GovernmentEmployee	54	9.3%
Housewife	55	9.4%
Other	48	8.6%

TABLE:4 PARTICIPANTS'KNOWLEDGE ABOUT CORONAVIRUS (n=564)

Questions	Yes	No	Percentage of Yes (Yes%)	Percentage of No (N0%)
Have you heard about Coronavirus**(1)**	463	101	82.09%	17.91%
What type of infectious disease is Coronavirus? **(2)** ● Bacterial (no) ● Viral (yes) ● I don't know (no) ● Other (no)	446	118	79.07%	20.93%
What do you think is the source of coronavirus (Coronavirus)? **(3)** ● Humans (no) ● Animals (no) ● Genetically modified viruses in laboratory (yes) ● Others (no)	298	266	52.83%	47.17%
For how long can coronavirus survive outside the host (Human (or) Animal) body? **(4)** ● 3-4 hours (yes) ● 7-12 hours (yes) ● 2-3 days (yes) ● 5-9 days (no)	329	235	58.33%	41.67%

Do you have any of the following symptoms? **(5)** ● Cough (yes) ● Fever or chills (yes) ● Shortness of breath or difficulty in breathing (yes) ● Muscle or body aches (yes) ● Sore throat (yes) ● New loss of taste or smell (yes) ● Diarrhea (yes) ● Headache (yes) ● Nausea or Vomiting (yes) ● New fatigue (yes) ● Congestion or runny nose (yes) ● All of the above (yes) ● None of the above (no)	334	230	59.21%	40.79%
Have you come in close contact with infected people? (6) ● Yes (yes) ● No (no)	376	188	66.66%	33.33%
Average			66.37%	33.63%

TABLE:5 PARTICIPANTS'ATTITUDE TOWARDS CORONAVIRUS (n=564)

QUESTIONS	YES	NO	PERCENTAGE OF YES (YES%)	PERCENTAGE OF NO (NO %)
Are you scared of Human-human transmission of Coronavirus? **(A1)** ● No, I can protect myself (no) ● I don't care (no) ● Yes, I'm in panic (yes)	295	269	52.30%	47.70%
What would you do if you had fever & cough? **(A2)** ● Self quarantine or go to the hospital (yes) ● I feel panic and don't know what to do (no) ● Stay at home for observation (yes)	369	195	65.42%	34.57%

Do you wear a face mask? **(A3)** ● Yes (yes) ● No (no)	334	230	59.21%	40.78%
Do you wash your hands for 20secs? If yes how many times a day? **(A4)** ● Yes, 1-4 times in a day (yes) ● Yes, 5-10 times in a day (yes) ● I don't remember (yes) ● Never (no)	343	221	60.81%	39.18%
Do you reuse a disposable mask? ● Yes, a few times (yes) ● Yes, many times (yes) ● No (no) ● Use a washable mask (no)	303	261	53.72%	46.28%
Do you clean & sanitize frequently touched surfaces & objects? ● Sometimes (yes) ● All the time (yes) ● Never (no)	311	253	55.14%	44.86%
Do you eat outside/ order food frequently? ● Sometimes (yes) ● All the time (yes) ● Never (no)	241	323	42.73%	57.27%
Do you sanitize all the products which are ordered (or) bought from outside? ● Yes (yes) ● No (no) ● Sometimes (yes) ● Never (no)	322	242	57.10%	42.90%

Do you consume nutritious food and/ or take supplements / Immunity boosters to improve immunity? ● Only nutritious food (yes) ● Only immunity boosters/supplements (yes) ● Both (yes) ● Neither (no)	287	277	50.99%	49.11%

TABLE:6 PARTICIPANTS' PRACTICES TOWARDS CORONAVIRUS (n=564)

QUESTIONS	YES	NO	PERCENTAGE OF YES (YES%)	PERCENTAGE OF NO (NO%)
Do you stay at home to avoid getting infected? ● Yes (yes) ● No (no) ● Sometimes (yes)	366	198	64.89%	35.11%
Do you touch your face, nose, rub your eyes (or) shake your hands with unwashed hands? ● Yes (yes) ● No (no) ● Sometimes (yes)	209	355	37.06%	62.94%
Do you follow the instructions given by the local, state & National authorities with regard to Covid-19? ● Yes (yes) ● No (no) ● Follow few instructions (yes) ● Somewhat (yes)	390	174	69.15%	30.85%
Do you attend meetings, religious activities, events & other social gatherings (or) any crowded places which have ongoing community transmission? ● Yes (yes) ● No (no) ● Sometimes (yes) ● I don't remember (no)	238	326	42.20%	57.80%

Do you reuse a disposable mask? ● Yes, a few times (yes) ● Yes, many times (yes) ● No (no) ● Use a washable mask (no)	303	261	53.72%	46.28%
Do you clean & sanitize frequently touched surfaces & objects? ● Sometimes (yes) ● All the time (yes) ● Never (no)	311	253	55.14%	44.86%
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Do you sanitize all the products which are ordered (or) bought from outside? ● Yes (yes) ● No (no) ● Sometimes (yes) ● Never (no)	322	242	57.10%	42.90%
Do you consume nutritious food and/ or take supplements / Immunity boosters to improve immunity? ● Only nutritious food (yes) ● Only immunity boosters/supplements (yes) ● Both (yes) ● Neither (no)	287	277	50.99%	49.11%
AVERAGE			52.55%	47.45%

4. **Conclusion**

To adhere to the guidelines released by the Government and the guidelines provided by the WHO have played an extremely vital role in improving the knowledge and awareness among the general population which in turn brought positive effects in people's attitude and practices towards COVID-19 since the WHO's declaration of COVID-19 as a pandemic.This has resulted in the public becoming more cautious, thereby minimizing the transmission of the disease to a certain level. Several public health measures which are now being implemented around the world will hopefully diminish the spread of the virus while safe and effective treatments and vaccines are being developed to terminate it.

ETHICAL APPROVAL:
Ethical approval was obtained and preserved by all the authors.

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