Original Research Article

"KNOWLEDGE, ATTITUDE AND PRACTICES (KAP) TOWARDS COVID-19 AMONG THE GENERAL PUBLIC"

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ABSTRACT

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Aims: To Asses the Knowledge, Attitude and Practices (KAP) towards COVID-19 among the general public.
Study design: Cross sectional study.
Place and Duration of Study: Department of General Medicine, December 2020 to May 2021.
Methodology: n this cross sectional, questioner based survey, conducted among the general population above 15 years of age, a series of questions regarding the KAP of the population about COVID-19 was given, and participant's demographic characteristics and source of information regarding COVID-19 were filled and submitted and analyzed.
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: Our findings suggests the need for effective and tailored health education programs aimed at improving COVID-19 Knowledge, there by leading to more favorable attitudes and to implementation and maintenance of safe practices

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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.

- COVID-19 causes a variety of symptoms in people who are infected. Not all the people infected with COVID-19 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 the importance of preventing the spread of COVID-19 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 COVID-19:

- 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 “COVID-19 virus”.

- 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 COVID-19 pandemic.

- **HOW IT SPREADS:**

- The virus that causes COVID-19 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 COVID-19, 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. Tedros Adhanom Ghebreyesus, 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 COVID-19 have been reported.

- In the past week the number of new COVID -19 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 COVID-19 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 COVID-19 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 COVID-19.

- 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 COVID-19. [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 COVID19.
- 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 COVID-19. [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 COVID-19 patients.

2. MATERIAL AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY (MATERIALS AND METHODS:

This study was carried out in Gandhi hospital, Secunderabad for 6 months. It is a cross sectional study was done for a period of December 2020 to May 2021.
In this cross sectional, questioner based survey, conducted among the general population above 15 years of age, a series of questions regarding the KAP of the population about covid-19 was given,and participant's demographic characteristics and source of information regarding covid-19 were filled and submitted and analyzed.
Study procedure: preparation of structured online questionnaire for documentation purpose. Sending the online questionnaire to several people.
Collecting the participants' responses to the survey. Interpretation of data and generating results. Analysis of results to find the final report.
Selection of participants:
Inclusion criteria: a) people belonging to age group of 15-60 years. B) participants of both genders. C) people who can read and/or write english.
Exclusion criteria: a) people below 15 years of age.
Data analysis : Data obtained was calculated in percentage. Results were presented in the form of tables, pie charts and figures..

3. RESULTS AND DISCUSSION

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

Table:1 Gender-wise distribution of participants

Gender	Number	Percentage
Male	325	57.6%
Female	239	42.4%

Figure:1 Gender-wise distribution of participants.

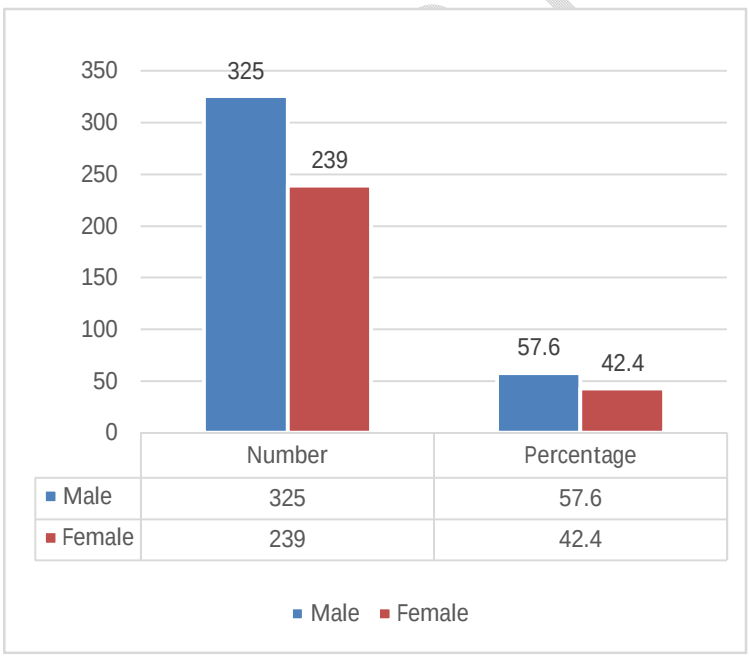


Table:2 Age-wise distribution of population.		
Age	Number	Percentage
15 - 25	335	59.4%
26-40	144	25.5%
41 - 50	56	9.9%
51 - 60	14	2.5%

Figure:2 Age-wise distribution of participants

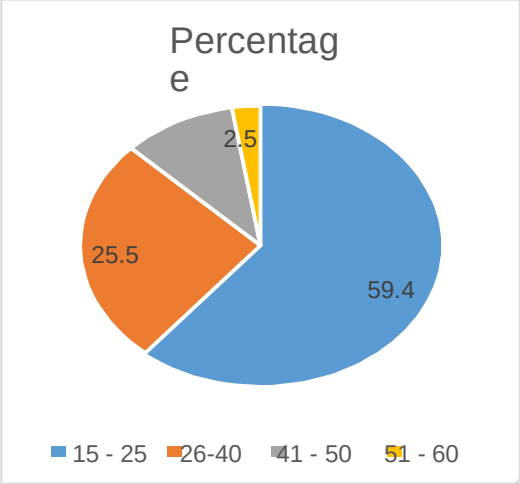


Table: 3 Occupation-wise distribution of participants.		
Occupation	Number	Percentage
Student	246	44.4%
Private Employee	160	28.3%
Government Employee	54	9.3%
Housewife	55	9.4%
Other	48	8.6%

Figure:3(a) Occupation-wise column distribution of participants.

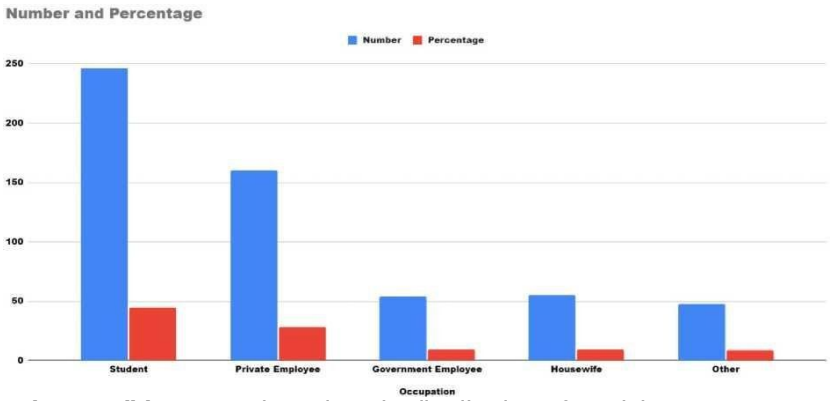


Figure:3(b) Occupation-wise pie distribution of participants.

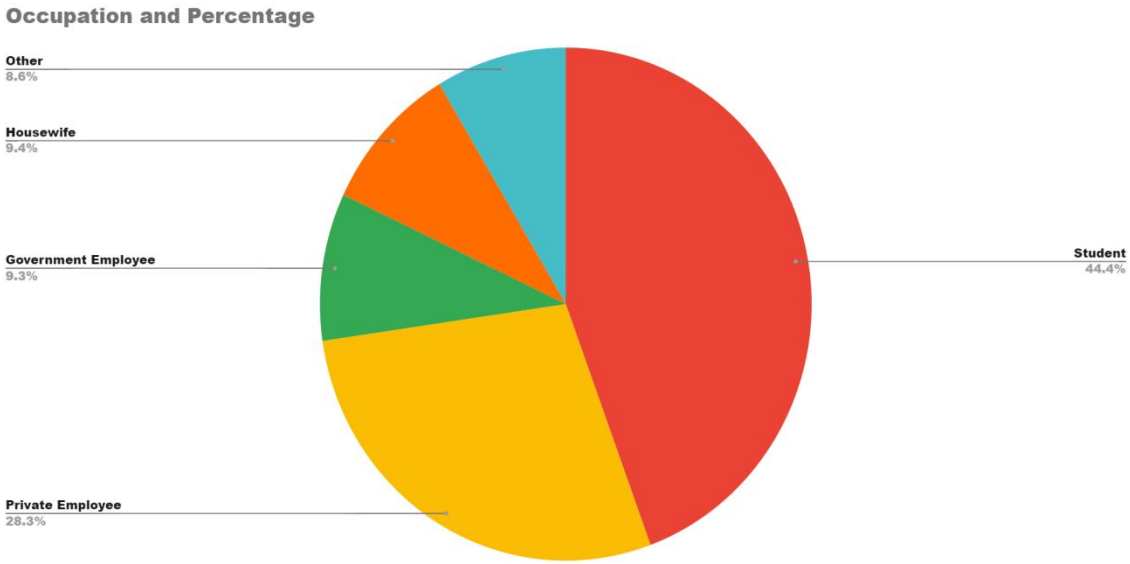


TABLE:4 PARTICIPANTS' KNOWLEDGE ABOUT COVID-19 (n=564)				
Questions	**Yes**	**No**	**Percentage of Yes (Yes%)**	**Percentage of No (N0%)**
Have you heard about COVID-19? **(1)**	463	101	82.09%	17.91%
What type of infectious disease is COVID-19? **(2)** ● Bacterial (no) ● Viral (yes) ● I don't know (no) ● Other (no)	446	118	79.07%	20.93%

What do you think is the source of coronavirus (COVID-19)? **(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%

Figure:4 Participants' Knowledge about COVID -19

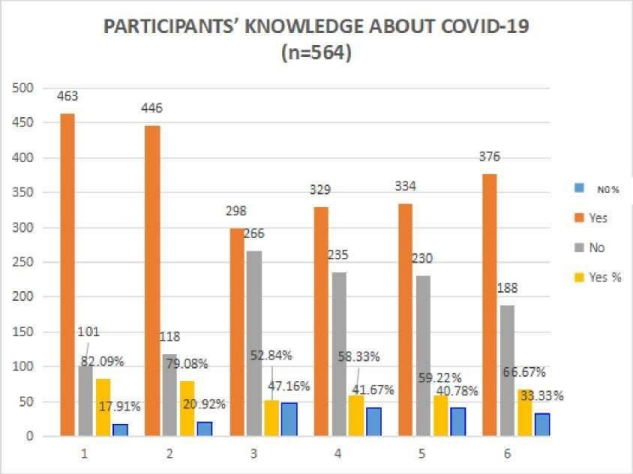


TABLE:5 PARTICIPANTS' ATTITUDE TOWARDS COVID-19 (n=564)

QUESTIONS	YES	NO	PERCENTAGE OF YES (YES%)	PERCENTAGE OF NO (NO %)
Are you scared of Human-human transmission of COVID-19? **(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%

Figure:5 Participants' attitude towards COVID-19

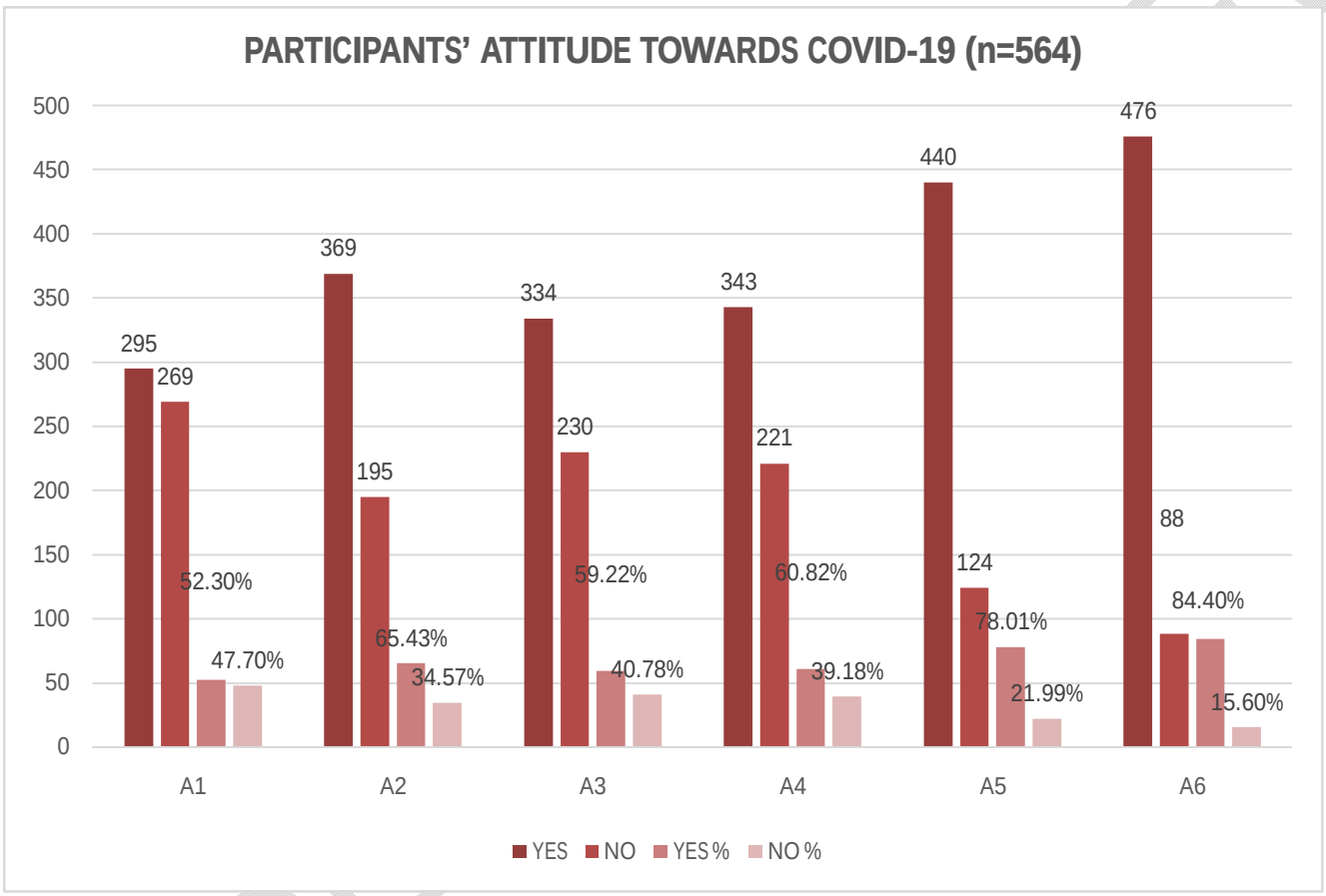


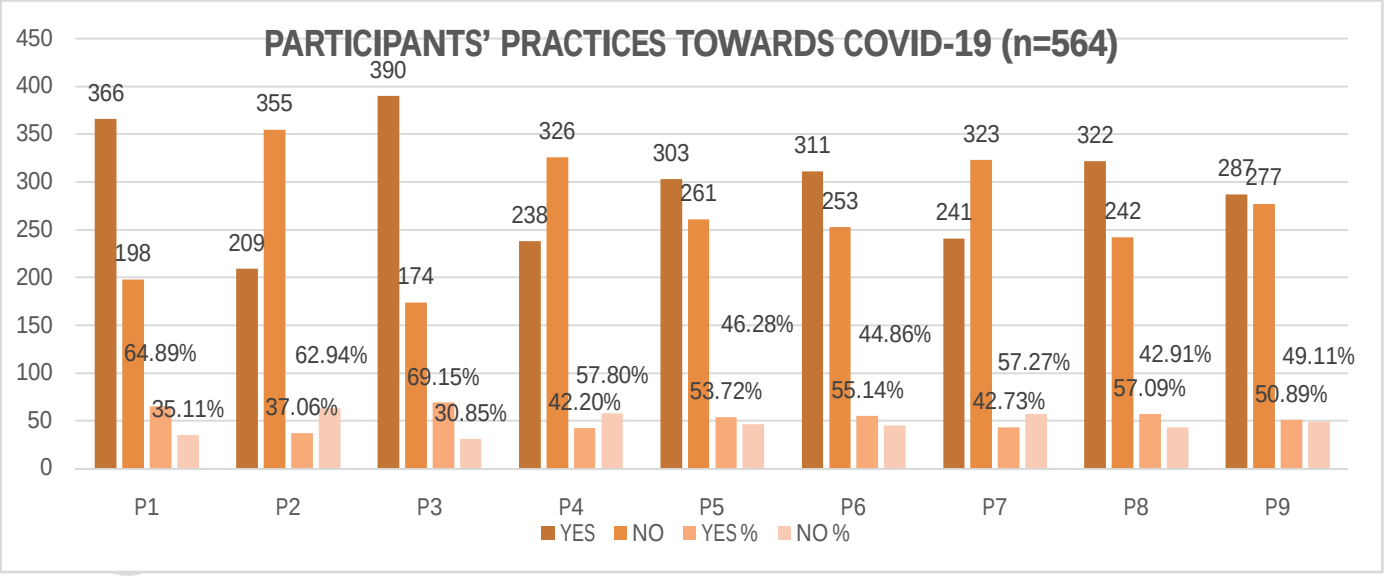
TABLE:6 PARTICIPANTS' PRACTICES TOWARDS COVID-19 (n=564)

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%

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%
AVERAGE			52.55%	47.45%

Figure:6 Participants' Practices towards COVID-19



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DISCUSSION

A total of five hundred and sixty four people participated in this cross- sectional study and showed a good sense of knowledge, attitude and practices towards the ongoing COVID-19 pandemic as concluded in a previous study by Saadatjoo S. et al. [12]

This survey was taken by both male and female participants in which the percentage of male participants (57.6%) comprised the majority and we found no sex differences about Knowledge, Attitude and Practices towards COVID-19 as both males and females were found to be well-versed with Knowledge, Attitude and Practices towards COVID-19 as previously observed by Okello G. et al in a cross-sectional survey on Knowledge, Attitude and Practices about COVID-19 in Uganda. [9]

Participants between the ages 15-60 years took part in the survey and most of them fall under the age group of 15-25 years (59.4%).

Among the different occupations and educational backgrounds taken into consideration in this survey , students belong to the majority percentage (44.4%) of the population to have participated in this survey and were observed to have a desired level of knowledge, attitude and preventive measures towards COVID-19 and similar results were obtained from a previous study conducted among medical students in Pakistan. [8]

This study shows that all the participants have very good knowledge, attitude and practices towards COVID-19.

The occupation and educational background of the participants in this study did not have any significant correlation with their knowledge, attitude and practices towards COVID-19.

In this study, from the data shown in **Table:4** we understand that the participants have good knowledge and awareness about COVID-19, the cause of this infection, its transmission, the duration of the virus' survival outside the host body, its symptoms and whether or not they might have come in contact with an infected person, with an average of 66.37% of the participants 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 majority of the participants (66.69%) were observed to have a healthy and positive attitude towards COVID-19 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 or sneezing 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 COVID-19 like maintaining hand hygiene, following the instructions given by the local, State and National authorities with regard to COVID-19, avoiding participation in meetings, social gatherings or crowded places, cleaning and sanitizing frequently touched surfaces, objects and products ordered from outside, limiting the order of food and also the consumption of nutritious food/supplements or immunity boosters to improve their immunity against COVID-19.

One disturbing fact is that only 46.28% of the participants discarded their disposable masks after 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 COVID-19. We believe that the Government, both National and State, along with the Ministry of Health and Family Welfare, general physicians and other healthcare professionals should come forward and make furthermore efforts in educating the public about COVID-19 through television, social media, the internet, pamphlets and posters, educational programs in order to create more awareness about the disease which may help to quell fears and common misconceptions in the minds of the people regarding the disease and this in turn may help in further improving the Knowledge, Attitude and Practices towards COVID-19 among the public and may also prevent or at the least reduce the spreading of the disease as concluded in previous studies. [10, 11, 14, 19, 26]

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.

COMPETING INTERESTS DISCLAIMER:

AUTHORS HAVE DECLARED THAT NO COMPETING INTERESTS EXIST. THE PRODUCTS USED FOR THIS RESEARCH ARE COMMONLY AND PREDOMINANTLY USE PRODUCTS IN OUR AREA OF RESEARCH AND COUNTRY. THERE IS ABSOLUTELY NO CONFLICT OF INTEREST BETWEEN THE AUTHORS AND PRODUCERS OF THE PRODUCTS BECAUSE WE DO NOT INTEND TO USE THESE PRODUCTS AS AN AVENUE FOR ANY LITIGATION BUT FOR THE ADVANCEMENT OF KNOWLEDGE. ALSO, THE RESEARCH WAS NOT FUNDED BY THE PRODUCING COMPANY RATHER IT WAS FUNDED BY PERSONAL EFFORTS OF THE AUTHORS.

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