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## Assess the Knowledge, Attitude and Practice on COVID-19 among General Public



**G.Vigneshwari<sup>1\*</sup>, A. Felicia Chitra<sup>2</sup>, A. Jalaja Rani<sup>3</sup>**

*<sup>1</sup>M.Sc Nursing Student, Department of Medical Surgical Nursing, Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry, India.*

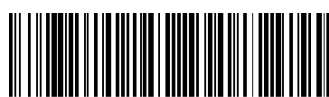
*<sup>2</sup>Principal Cum HOD, Department of Medical Surgical Nursing, Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry, India.*

*<sup>3</sup>Associate Professor, Department of Obstetrics and Gynaecological Nursing, Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry, India.*

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### ABSTRACT

**Background:** COVID-19 is a serious infectious disorder caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, Hubei, China, and was reported as a pneumonia case of unknown origin. Globally, according to United Nations, the population covered worldwide is about 7,795 billion amongst them more than 134,308,070 confirmed cases of COVID-19, including 2,907,944 deaths were estimated, as of 11<sup>th</sup> April 2021. The objective of the present study was to assess the Knowledge, Attitude, and Practice of COVID-19 among the General Public in selected areas in Puducherry.

**Methodology:** In this study, a quantitative approach and descriptive survey research design were used. 400 General Public were selected by using the convenience sampling technique who fulfilled the inclusion criteria and data was collected using a Structured questionnaire with an interview schedule. **Results:** Study results revealed that the majority of the General Public 63.75% had adequate knowledge regarding COVID-19, 84% had a positive attitude regarding COVID-19 and 81.75% of the General Public had good practices regarding COVID-19. The calculated Karl Pearson's correlation value between Knowledge and Attitude ( $r=0.401$ ); between knowledge and Practice ( $r=0.438$ ); between Attitude and Practice ( $r=0.312$ ) was found to be statistically significant at  $p<0.01$  level which clearly indicated that when knowledge regarding COVID-19 increased, their Attitude and Practice also increased. **Conclusion:** The study concluded that the majority of the General Public had adequate knowledge, a positive attitude, and good practices regarding COVID-19, and innovative measures to create awareness will further improve the knowledge, attitude, and practice of the General Public which would put an end to the pandemic.

## I. INTRODUCTION

More than 13 million people succumb due to communicable diseases like infectious and parasitic infections each year. In some developing countries, there are one in two deaths that incur due to communicable diseases. The children, underprivileged, women, and elderly people are mostly affected by communicable diseases. Worldwide, younger adults and children are more killed by infectious diseases, and still, it is continuing [1]. The communicable diseases can easily prolong by some the factors such as socioeconomic, environmental, behavioral, and also international travel and migration. Contaminated foods, animals, using the same syringes, and any other health-related problems cause a threat to human health [2].

From the year 1918-to 1920 Worldwide, approximately 50-100 million peoples capitulate to infection during the Spanish Flu Pandemic. Almost two-thirds of the east African Massai peoples perished due to famine and after that, it led to massive death of animals [3]. During the early twentieth century, there were good living conditions, increased availability of health care such as better vaccines, the occurrence of antibiotics, improved monitoring in relation to public health, decrease in the percentage of mortality rates and spread of diseases. However, an increase in the emergence and re-emergence of infectious diseases became evident in many parts of the world towards the later part of the twentieth century [4].

The specific pathogens are bacteria that cause UTI, strep throat, Tuberculosis, and Fungi that cause skin diseases like ringworm, athlete's foot and parasites that lead to malaria, Viruses that cause HIV, Ebola, and SARS, and COVID. The other communicable diseases are airborne diseases, acute respiratory infections, Meningitis (bacterial and fungal) Tuberculosis, and leprosy. Communicable diseases can spread by the organisms either by direct or indirect contact. Direct contact occurs when the individual comes into contact with the reservoir and indirect contact occurs when the organism is able to survive in the environment outside the host for longer periods and still remains infective when the specific opportunity arises [5].

The SARS outbreak was an epidemic involving acute respiratory syndrome caused by severe acute respiratory syndrome coronavirus (SARS-CoV or SARS-Cov-1). The outbreak was first identified in Foshan, China, on 16 November 2002 [6]. The **World Health Organization** announced SARS as a pandemic on 5<sup>th</sup> July 2003. Several cases were reported on SARS until May 2004. In

Mainland China, the SARS was at its peak and reported 5,327 cases, and 349 deaths and the fatality was 6.6%. In India, there were 3 cases and there was no death or fatality case of SARS [7]. COVID-19 is a serious infectious disorder caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The coronavirus mostly affects elderly people and also those with underlying co-morbid diseases, who develop more serious illnesses [8].

In order to tackle the impacts of COVID-19, strengthening community connections is a central mechanism. Be it awareness rising, teaching, informing, linking, sharing, etc., we need a tied community with each other, because we need to share our understanding on this problem, the more we reduce its negative effect on communities the more productive it would be to create awareness to the general public about the hand hygiene, social distancing, masking up via news media, social media, and internet. The prevention activities can be inculcated in the general public by creating awareness [9].

There are many studies conducted by various authors revealing the Knowledge, Attitude, and Practices among the various population regarding the COVID-19.

## **PROBLEM STATEMENT**

A descriptive study to assess the Knowledge, Attitude, and Practice of COVID-19 among the General Public in selected areas in Puducherry.

## **OBJECTIVES OF THE STUDY**

1. To assess the level of Knowledge, Attitude, and Practice on COVID-19 among General Public.
2. To correlate the Knowledge and Attitude, Knowledge and Practice, and Attitude and Practice.
3. To associate the level of Knowledge, Attitude, and Practice with the selected demographic variables.

## **II. MATERIALS AND METHODS**

### **RESEARCH DESIGN**

A descriptive survey research design was used for this study.

## **TARGET POPULATION AND SAMPLING**

The researcher randomly selected five PHCs from among 27 in Puducherry. The samples were selected from village areas covered by PHC in Gorimedu, Mettupalayam, Lawspet, Reddiarpalayam, and Villianur. These areas cover an average population of 297,938. The total sample size of this study was 400 General Public. In Gorimedu, the population was 23736 and the proportionate sample size calculated was 32 samples; in Mettupalayam, the population was 67811 and the proportionate sample size was 91; in Lawspet, the population was 90000 and the proportionate sample size was 121; in Villianur, the population was 84074 and the proportionate sample size was 113; in Reddiarpalyam, the population size was 32317 and the proportionate sample size was 43.400 General Public were selected by using convenience sampling technique who fulfilled the inclusion criteria and data was collected using Structured questionnaire with interview schedule to all general public in selected areas, Puducherry.

## **DATA COLLECTION**

The period of data collection was one month. The formal permission was obtained from the institution and the concerned authorities. The areas were selected by using the lottery method and the samples were selected by using the convenience sampling technique. The researcher selected 400 samples in village areas covered by particular PHCs (Gorimedu, Mettupalayam, Lawspet, Reddiarpalayam, Villianur). The researcher proportionated the area's population and collected the samples by proportionate sample size.

On the first day, the researcher gave an introduction about her and explained the subjects regarding the purposes, objectives, and importance of the study. The researcher also provided assurance to the participants that their confidentiality was maintained and obtained written informed consent. On the same day, a demographic data sheet was used to assess the background of the General Public. A structured questionnaire with an interview schedule was used for this study to collect the data. The questionnaires were asked by the researcher and the participant's responds were marked by the researcher the questionnaire.

## DATA ANALYSIS

The collected data was organized and entered in MS Excel. The data were compiled, refined, coded, and recoded to analyze the objectives of the research. Data were analyzed by using SPSS version 19.0. Frequency distribution, percentage, mean and standard deviation were used to assess the level of Knowledge, Attitude, and Practice among General Public. Correlate the Knowledge and Attitude, Knowledge and Practice, Attitude and Practice were analyzed by Karl Pearson Correlation test. Determine the association between level of Knowledge, Attitude, and Practice in selected demographic variables were analyzed by One Way ANOVA and Unpaired t-test.

## ETHICAL REVIEW

Approval and ethical clearance from the dissertation committee of Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry was obtained before conducting the pilot study. The permission was obtained from the DDPH and medical officer at the Primary Health Centre of Puducherry. Written informed consent was obtained from participants and confidentiality was maintained throughout the study. The study subjects had the freedom to withdraw from the study at any time.

## III. RESULTS

The study findings were organized under the following sections:

**Section A:** Description of the demographic variables of the General Public.

**Table 1: Frequency and percentage distribution of demographic variables of General Public.**

**N=400**

Demographic Variables	Frequency	Percentage
<b>Age</b>		
18 – 33 years	166	41.5
34 – 49 years	141	35.3
50 – 65 years	71	17.7
>65 years	22	5.5
<b>Gender</b>		

<b>Demographic Variables</b>	<b>Frequency</b>	<b>Percentage</b>
Male	252	63.0
Female	148	37.0
Others	-	-
<b>Religion</b>		
Hindu	331	82.7
Muslim	36	9.0
Christian	32	8.0
Others	1	0.3
<b>Educational status</b>		
Profession	33	8.3
Graduate or Post Graduate	50	12.5
Intermediate or post-high school diploma	61	15.3
High school certificate	151	37.7
Middle school certificate	54	13.5
Primary school certificate	46	11.5
Illiterate	5	1.3
<b>Occupation</b>		
Student	48	12.0
Employed	230	57.5
Unemployed	122	30.5
<b>Source of knowledge on COVID-19</b>		
News Media	206	51.5
Social media and internet	80	20.0
Family/friends	94	23.5
Health care providers	9	2.3
Scientific articles and journal	11	2.7
<b>Living area</b>		
Rural	58	14.5
Urban	294	73.5

Demographic Variables	Frequency	Percentage
Semi urban	48	12.0
<b>Have you been affected by CORONA?</b>		
Yes	36	9.0
No	364	91.0

**Table 1** Reveals the frequency and percentage distribution of demographic variables of the General Public.

**Section B:** Assessment of level of Knowledge, Attitude, and Practice on COVID-19 among the general public.

**Table 2: Frequency and percentage distribution of level of Knowledge on COVID-19 among the General Public.**

N = 400

Knowledge Domains	No. of Items	Inadequate (≤50%)		Moderate (51 – 75%)		Adequate (>75%)	
		No.	%	No.	%	No.	%
Definition	2	56	14.0	0	0	344	86.0
Risk Factors	2	166	41.5	0	0	234	58.5
Causes	2	65	16.25	0	0	335	83.75
Pathophysiology	1	95	23.75	0	0	305	76.25
Signs and Symptoms	1	17	4.25	0	0	383	95.75
Diagnosis	3	25	6.25	143	35.75	232	58.0
Management	4	132	33.0	149	37.25	119	29.75
Prevention	4	156	39.0	124	31.0	120	30.0
Complications	1	41	10.25	0	0	359	89.75
<b>Overall</b>	<b>20</b>	<b>15</b>	<b>3.75</b>	<b>130</b>	<b>32.5</b>	<b>255</b>	<b>63.75</b>

**Table 2:** shows that 3.75% General Public had inadequate knowledge, 32.5% General Public had moderately adequate knowledge and 63.75% General Public had adequate knowledge.

**Table 3: Frequency and percentage distribution of level of Attitude on COVID-19 among General Public.**

N = 400

Level of Attitude	Frequency	Percentage
Negative (0 – 17)	0	0
Neutral (18 – 34)	67	16.75
Positive (35 – 50)	333	83.25

**Table 3:** depicts that 333(83.25%) had a positive attitude and 67(16.75%) had a neutral attitude towards COVID-19.

**Table 4: Frequency and percentage distribution of level of Practice on COVID-19 among General Public.**

N = 400

Level of Practice	Frequency	Percentage
Poor (0 – 4)	9	2.25
Average (5 – 7)	64	16.0
Good (8 – 10)	327	81.75

**Table 4** depicts that 327(81.75%) had a good practice, 64(16%) had average practice and 9(2.25%) had poor practice toward COVID-19. **SECTION C:** Correlation between Knowledge and Attitude, Knowledge and Practice, Attitude and Practice on COVID-19 among general Public.



**Table 5:** Correlation between Knowledge and Attitude on COVID-19 among General Public.

N = 400

Variables	Mean	S.D	Karl Pearson's Correlation Value
Knowledge	15.91	2.81	<b>r = 0.401</b> <b>p = 0.0001, S**</b>
Attitude	39.14	5.17	

\*\*p<0.01, S – Significant

**Table 5:** portrays that the mean score of knowledge regarding COVID-19 among the General Public was 15.91±2.81, mean score of attitude was 39.14±5.17. The calculated Karl Pearson's Correlation had a positive correlation (r=0.401 at p=0.0001) which was highly statistically significant which means when the knowledge increased, attitude also increased.

**Table 6:** Correlation between Knowledge and Practice on COVID-19 among General Public.

N = 400

Variables	Mean	S.D	Karl Pearson's Correlation Value
Knowledge	15.91	2.81	<b>r = 0.438</b> <b>p = 0.0001, S**</b>
Practice	8.27	1.31	

\*\*p<0.01, S – Significant

**Table 6:** portrays that the mean score of knowledge regarding COVID-19 among the General Public was 15.91±2.81, mean score of practice was 8.27±1.31. The calculated Karl Pearson's Correlation had a positive correlation (r=0.438 at p=0.0001) which was highly statistically significant which means when the Knowledge increased, Practices also increased.

**Table 7: Correlation between Attitude and Practice on COVID-19 among General Public.**

N = 400

Variables	Mean	S.D	Karl Pearson's Correlation Value
Attitude	39.14	5.17	<b>r = 0.312</b> <b>p = 0.0001, S**</b>
Practice	8.27	1.31	

\*\*p<0.01, S – Significant

**Table 7:** portrays that the mean score of Attitude regarding COVID-19 among the General Public was 39.14±5.17, mean score of practice was 8.27±1.31. The calculated Karl Pearson's Correlation had a positive correlation (r=0.312 at p=0.0001) which was highly statistically significant which means when the Attitude increased, Practices also increased.

**SECTION D:** Association of Knowledge, Attitude, and Practice on COVID-19 among General Public with selected demographic variables.

**Table 8: Association of Knowledge, Attitude, and Practice on COVID-19 among General Public with their selected demographic variables.**

N=400

Demographic Variables	Knowledge		Attitude		Practice	
	Mean± S.D	F/t & p value	Mean± S.D	F/t & p value	Mean± S.D	F/t & p value
<b>Age</b>						
18 – 33 years	15.86±2.75	F=1.025 P=0.382 N.S	38.69±4.99	F=1.571 P=0.196 N.S	8.15±1.25	<b>F=3.013</b> <b>P=0.030</b> <b>S*</b>
34 – 49 years	15.92±2.92		39.65±5.44		8.19±1.41	
50 – 65 years	15.68± 2.86		38.74±5.00		8.48±1.26	
>65 years	16.86± 2.25		40.55±5.12		8.91±0.97	
<b>Gender</b>		t=1.526		t=1.118		t=0.703
Male	16.08± 2.70	P=0.128	39.37±5.05	P=0.265	8.30±1.24	P=0.483

Demographic Variables	Knowledge		Attitude		Practice	
	Mean± S.D	F/t & p value	Mean± S.D	F/t & p value	Mean± S.D	F/t & p value
Female	15.62± 2.97	N.S	38.76±5.37	N.S	8.20±1.42	N.S
Others	-		-			
<b>Religion</b>						
Hindu	16.05± 2.64	<b>F=3.198</b> <b>P=0.023</b> <b>S*</b>	39.19±5.04	F=1.685 P=0.170 N.S	8.28±1.26	F=0.822 P=0.482 N.S
Muslim	14.78± 3.01		38.50±5.08		8.19±1.35	
Christian	15.53± 3.79		38.97±6.39		8.09±1.77	
Others	20.0± 0.0		50.00±0		10.00±0.0	
<b>Educational status</b>						
Profession	15.30± 2.47	<b>F=2.450</b> <b>P=0.025</b> <b>S*</b>	38.12±4.81	<b>F=2.334</b> <b>P=0.032</b> <b>S*</b>	7.82±1.10	F=1.423 P=0.204 N.S
Graduate or post graduate	15.68± 2.86		38.34±5.94		8.14±1.46	
Intermediate or post high school diploma	16.21± 2.61		39.92±4.03		8.39±1.00	
High school certificate	16.29± 2.52		39.48±4.82		8.25±1.25	
Middle school certificate	16.02± 2.97		39.65±5.96		8.59±1.46	
Primary school certificate	15.07± 3.40		37.46±5.52		8.26±1.53	
Illiterate	13.20± 4.66		34.0±5.57		8.00±1.87	
<b>Occupation</b>						
Student	15.83± 2.45	F=0.685 P=0.505 N.S	38.81±4.14	F=0.421 P=0.657 N.S	8.15±1.38	F=0.723 P=0.486 N.S
Employed	16.04± 2.82		39.34±5.05		8.23±1.20	
Unemployed	15.68± 2.92		38.89±5.76		8.38±1.47	
<b>Source of knowledge</b>						
News Media	16.00± 2.58	F=0.519 P=0.722	39.22±5.11	F=0.961 P=0.429	8.33±1.35	F=1.743 P=0.140
Social media and	16.08± 2.85		N.S		39.85±5.35	

Demographic Variables	Knowledge		Attitude		Practice	
	Mean± S.D	F/t & p value	Mean± S.D	F/t & p value	Mean± S.D	F/t & p value
internet						
Family/friends	15.68± 3.09		38.64±5.13		8.29±1.08	
Health care providers	15.33± 1.73		38.11±3.33		8.11±0.60	
Scientific article and journal	15.27± 4.61		37.55±6.50		7.27±1.62	
<b>Living area</b>		<b>F=5.665</b> <b>P=0.004</b> <b>S**</b>		F=0.057 P=0.945 N.S		<b>F=5.854</b> <b>P=0.003</b> <b>S**</b>
Rural	15.07± 3.46		39.33±6.61		7.88±1.49	
Urban	16.19± 2.55		39.13±4.99		8.39±1.21	
Semi urban	15.21± 3.15		39.0±4.38		7.92±1.51	
<b>Have you been affected by Corona?</b>		t=0.672 P=0.505 N.S		t=0.058 P=0.954 N.S		t=0.432 P=0.668 N.S
Yes	15.56±3.34		39.08±6.19		8.17±1.44	
No	15.94±2.75		39.15±5.07		8.27±1.29	

\*\*p<0.01, \*p<0.05, S – Significant, N.S – Not Significant

**Table 8** shows the association of Knowledge, Attitude, and Practice on COVID-19 among General Public with the selected demographic variables which were computed by One Way ANOVA and Unpaired ‘t-test.

#### IV. DISCUSSION

The detailed discussion of the findings of the study was interpreted from the statistical analysis. The discussion of the present study is based on the findings obtained from the statistical analysis of the assessment based on the objectivity of the study.

**The first objective of the study**, the result revealed that, regarding Knowledge, **majority 255(63.75%)** of the General Public had adequate knowledge, 130(32.5%) had moderately adequate knowledge and 15(3.75%) had inadequate knowledge regarding COVID-19. Regarding attitude, the majority 333(84%) of the General Public had a positive attitude, 67(16%) of the

General Public had a neutral attitude and none of them had a negative attitude regarding COVID-19. Regarding Practice, the majority 327(81.75) of the people had a good practice, 64(16%) of the people had average practice and 9(2.25%) of the people had poor practice.

The study supported by **Wajahat M, Ahmed H, Sherwani K S (2020)** conducted a cross-sectional study on Knowledge, Attitude, and Practice toward COVID-19 among General Public. A systematic random sampling technique was used in this study and an online structured questionnaire was used. The results showed that 82% of them had good knowledge, 76% of them had a positive attitude and 86% of them had good practice toward COVID-19 among participants. The study concluded that this study provides new possibilities to develop a plan to counter the COVID-19 attack and is helpful in conducting research on other perspectives [10].

**The second objective of the study**, the study revealed that the mean score of Knowledge is  $15.91 \pm 2.81$ , Attitude is  $39.14 \pm 5.17$ , Practice is  $8.27 \pm 1.31$ . The calculated Karl Pearson's Correlation value of  $r = 0.401$  between knowledge and attitude,  $r = 0.438$  between knowledge and practice &  $r = 0.312$  between attitude and practice shows a substantial positive correlation which was found to be statistically significant at  $p < 0.01$  level and it clearly infers that **when the knowledge regarding COVID-19 among General Public increases their Attitude and Practice level also increased.**

The present study was supported by **Peng Y et al (2020)** an online cross-sectional survey that investigated the knowledge, attitude, and practice associated with COVID -19 among 872 university students. A stratified cluster sampling technique was used in the study. The results showed that the mean score of knowledge was  $4.12 \pm 0.749$ , the attitude was  $8.54 \pm 1.201$  and practice was  $8.91 \pm 1.431$  respectively, There is a positive correlation between attitude and practice ( $r = 0.319$ ,  $P < 0.01$ ). Total KAP score was  $21.57 \pm 2.291$ , apparently correlated with gender ( $r = 0.096$ ,  $P = 0.005$ ) and major ( $r = -0.081$ ,  $P = 0.017$ ). They also concluded that most university students acquired the necessary knowledge, positive attitude, and proactive practice toward COVID-19[11].

**The third objective of the study**, The results show that the demographic variables of the General Public, Comparing the age group, there were statistically significant with the practice between the age groups 18 – 33 and 34 – 49 years need to be educated on COVID-19 which may improve their

practice level. Regarding religion, there was statistically significant knowledge which further infers that the Muslim community needs to be educated on COVID – 19. Comparing educational status, there was statistically significant with the knowledge and attitude which further infers that illiterates need to be given awareness on knowledge so that their attitude towards COVID-19 may improve. Regarding living areas, there was statistically significant with the knowledge and practice which clearly infers that General Public living in the rural area need to be given awareness on knowledge so that their practice on COVID-19 also may improve.

The study was supported by **Yue et al (2020)** who conducted a cross-sectional study on knowledge, attitude, and practices of COVID-19 among 517 urban and rural residents in China. The results showed that the demographic variables of the resident's age, gender, educational level, and marital status had shown a statistically significant association with the level of knowledge regarding COVID-19 at  $p < 0.05$ . Practices were significant association with the different areas of demographic variables [12].

## **V. CONCLUSION**

The study concluded that the majority of the General Public had adequate Knowledge regarding COVID-19, Positive Attitude, and Good Practices. The study suggested that continued educational programs and regular awareness programs must be conducted to sustain and improve the Knowledge, Attitude and Practice further to control and prevent the spread of COVID-19 in the present and future.

## **VI. RECOMMENDATIONS**

- A comparative study can be conducted to find the prevalence and risk factors of COVID-19 in rural and urban areas.
- Replication of the study may be done with a large sample in different settings to generalize the study findings.
- One group pre-test and post-test can be conducted.
- The post-test-only study can be conducted in the same setting.
- Studies on a different population.

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