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Knowledge assessment regarding Novel Coronovirus (Covid-19): A Population based survey in Puducherry.

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Abstract:
Background: *Coronavirus is one of the major pathogens which targets primarily the human respiratory system. Earlier coronaviral outbreaks (CoVs) include Middle East respiratory syndrome (MERS)-CoV and severe acute respiratory syndrome (SARS)- CoV which have significantly caused great threat to human beings.The outbreak of coronavirus in Puducherry was officially confirmed to be in Mahe on March17, 2020.*
Method: *This study was designed as a cross-sectional web-based survey, conducted during April 2020 to May 2020 among the general population of in and around Puducherry, questions asked regarding the knowledge of the population about the disease COVID- 19.Collected data was entered in Microsoft excel and analyzed by using SPSS-24.0.*
Result: *A total of 220 participants from some places of Puducherry were responded to the Survey. The majority of the respondents were from the age group of 21-30 years (65.5%). Mostly 52.7% of the respondents were male and 46.8% of the respondents were females. Among the respondents most of them 67.7 %were completed their Under graduation . And among the participants 41.8 % were working under private sector.*
Conclusion: *In the conclusion of our study suggest that general population had good knowledge regarding Covid-19 during the outbreak. The present study highlights that the general population regarding Covid -19 at the time of the pandemic outbreak.*
Keywords: *Covid- 19, Knowledge, Population,*

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I. Introduction

Coronavirus is one of the major pathogens which targets primarily the human respiratory system. Earlier coronaviral outbreaks (CoVs) include Middle East respiratory syndrome (MERS)-CoV and severe acute respiratory syndrome (SARS)- CoV which have significantly caused great threat to human beings.(1). The novel Coronavirus (2019-nCoV, officially known as SARS-CoV-2 or COVID-19) was first reported in December 2019, as a cluster of acute respiratory illness in Wuhan, Hubei Province, China, from where it spread rapidly to over 198 countries. It was declared as a global pandemic by WHO on 12th March 2020.(2). The disease is highly infectious, and its main clinical symptoms include fever, dry cough, fatigue, myalgia, and dyspnea.(3).COVID-19 is thought to have higher mortality than seasonal influenza, even as wide variation is reported.(4). The outbreak of coronavirus in Puducherry was officially confirmed to be in Mahe on March17, 2020.(5,6). As of June 2, 2020, over 6,408,782 cases of Covid-19 have been reported with a death of over 378,317 patients.(7). As of 28 May, the total number of Covid-19 reported cases in Puducherry is 53, including 37 active cases and 16 cured or recovered cases.(8). Therefore, knowledge of the basic principles and ways of transmitting disease and measures in such an environment is vitally important for the implementation and installation of effective control measurement. In order to achieve the greatest victory against the COVID-19, it is important that people have a dedication to these controls.Health authorities in Puducherry have made more efforts to control the disease through various measures. Public education is considered as one of the most important measures that can help control the diseases, as has been the case regarding SARS.(9)

The main objective objective of this study was to assess the level of knowledge regarding Covid-19, to identify the sociodemographic variables and associated with the level of them and to explore awareness and health behaviours related to the prevention of the Coronavirus.

II. Method

This study was designed as a cross-sectional web-based survey, conducted during April 2020 to May 2020 among the general population of in and around Puducherry, questions asked regarding the knowledge of the population about the disease COVID- 19. Online survey link was sent to all the voluntary participants. Through the link, the participants coud view the questions simply by clicking on it and answer the questions by their own.A Sample size of 220 participants were filled the form. The questionnaire included a short introduction regarding the objectives, procedures, the voluntary participation, declarations of confidentiality and anonymity. The inclusion criteria was age above15years who would under stood the content of the survey and agree to participate in the survey. Data collection form includes basic information of transmission, symptoms, incubation period, treatment, control and prevention about COVID19, and participants' socio demographic characteristics and sources of information regarding COVID-19. Collected data was entered in Microsoft excel and analyzed by using SPSS-24.0.

Statistical analysis :

All the statistical analyses were performed by using statistical package for social sciences SPSS version 24.0. Data were presented as mean ± SD and proportions as appropriate. The Chi-square test was used to compare categorical data. The statistical significance level was set at $p < 0.05$.

III. Result

A total of 220 participants from some places of Puducherry were responded to the Survey. The majority of the respondents were from the age group of 21-30 years (65.5%). Mostly 52.7% of the respondents were male and 46.8% of the respondents were females. Among the respondents most of them 67.7 %were completed their Under graduation . And among the participants 41.8 % were working under private sector. (Table 1)

Table 1: Distribution of Study participants based on Socio-demographic profile.

Variables	Sub category	Frequency (n)	Percentage (%)
Age	<20 years	36	16.4 %
	21-30 years	144	65.5 %
	31- 40 years	22	10.0 %
	41- 50 years	13	5.9 %
	>50 years	5	2.3 %
Gender	Male	116	52.7 %
	Female	103	46.8 %
	Transgender	1	0.5 %
Educational Qualification	Illiterate	-	-
	School	41	18.6 %
	UG degree	149	67.7 %
	PG degree	30	13.6 %
Occupation	Daily wages	15	6.8 %
	Unemployed	61	27.7 %
	Own business	10	4.5 %
	Government job	42	19.1 %
	Private job	92	41.8 %
Monthly income of the family	Upper class (26-29)	32	14.5 %
	Upper middle (16-25)	36	16.4 %
	Lower middle (11-15)	81	36.8 %
	Upper lower (5-10)	55	25.0 %
	Lower (below 5)	16	7.3 %

Knowledge of Covid-19

Based on our results, the majority of the population had good knowledge about the disease (59.9%). The mean knowledge score was 36.95 (Table 2). Knowledge scores of our study showed no difference among the demographic questions like age, gender, education, occupation, family income except few questions.

Table 2: Distribution of the Variables based on the Frequency and Percentage.

Knowledge of Covid-19	Frequency	Percentage
1. Have you ever heard before of a disease called coronavirus?		
Yes	108	49.1 %
No	112	50.9 %
2. World Health Organisation on 11 February, 2020 announced an official name for the disease that is causing the 2019 novel coronavirus outbreak? What is the new name of the disease?		

COVID-19	201	91.4 %
COVn-19	10	4.5 %
COnV-20	1	0.5 %
COnVID-19	8	3.6 %
3. The first case of novel coronavirus was identified in		
Beijing	10	4.5 %
Shanghai	14	6.4 %
Wuhan, Hubei	159	72.3 %
Tianjin	37	16.8 %
4. Which of the following diseases are related to coronavirus?		
MERS	12	5.5 %
SARS	69	31.4 %
Both A and B	116	52.7 %
Neither A nor B	23	10.5 %
5. From where coronavirus got its name?		
Due to their crown-like projections.	107	48.6 %
Due to their leaf-like projections.	24	10.9 %
Due to their surface structure of bricks.	31	14.1 %
None of the above	58	26.4 %
6. Is covid 19 caused by animals/ humans?		
Yes	180	81.8 %
No	40	18.2 %
7. Source of information regarding Covid 19?		
TV/ newspaper	161	73.2 %
Government hospital / health facility	32	14.5 %
Health care workers	15	6.8 %
Friend/ neighbour	12	5.5 %
8. Do you know the symptoms of Covid-19?		
Aches/pains	1	0.5 %
Nasal congestion	6	2.7 %
Sore throat	61	27.7 %
Diarrhoea	15	6.8 %
All of the above	131	59.5 %
Don't know	6	2.7 %
9. How does Coronavirus transmit?		
When a person sneezes or cough, droplets spread in the air or fall on the ground and nearby surfaces.	29	13.2 %
If another person is nearby and inhales the droplets or touches these surfaces and further touches his face, eyes or mouth, he or she can get an infection.	56	25.5 %
If the distance is less than 1 meter from the infected person	13	5.9 %
All the above are correct.	122	55.5 %
10. What happens to a person suffering from COVID-19?		
Around 80% of the people will require no treatment as such and will recover on their own.	47	21.4 %
Around <20% or a small proportion may need hospitalisation.	22	10.0 %
A very small proportion basically suffering from chronic illness may need admission in an Intensive Care Unit (ICU).	40	18.2 %
All the above are correct	111	50.5 %
11. In which age group the COVID-19 spreads?		
COVID-19 occur in all age groups.	89	40.5 %
Coronavirus infection is mild in children.	10	4.5 %
Older person and persons with pre-existing medical conditions are at high risk to develop serious illness.	29	13.2 %
All the above are correct	92	41.8 %
12. What are the precautions that need to be taken to protect from the coronavirus?		
Cover your nose and mouth when sneezing.	111	50.5 %
Add more garlic into your diet.	13	5.9 %
Visit your doctor for antibiotics treatment	8	3.6 %
Wash your hands after every hour.	88	40.0 %
13. How long does the novel coronavirus service outside the body?		

A week in the air and on the surface	61	27.7 %
Several hours a day	89	40.5 %
Upto a two and a half weeks	36	16.4 %
Don't know	34	15.5 %
14. What's more important for preventing the infection?		
Frequent handwashing	129	58.6 %
Wear a face mask	73	33.2 %
Use handkerchief	16	7.3 %
Don't know	2	0.9 %
15. What's a safe distance to stay apart from someone who's sick?		
At least 1 foot(30 cm)	22	10.0 %
At least 3 feet (1 meter)	160	72.7 %
At least 9 feet (3 meter)	34	15.5 %
Don't know	4	1.8 %
16. Who's at highest risk of developing severe covid-19 disease?		
Children	30	13.6 %
People over 60 years of age	103	46.8 %
Pregnant women	21	9.5 %
Those with existing medical condition	19	8.6 %
Both 2 and 3	45	20.5 %
Don't know	2	0.9 %

Table 3: Comparison of Knowledge with Socio-economic status (Only p value)

Questions on knowledge of Covid-19	Age	Gender	Education	Occupation	Family Income
Have you ever heard before of a disease called coronavirus?	0.533	0.515	**0.005**	0.052	**0.045**
World Health Organisation on 11 February, 2020 announced an official name for the disease that is causing the 2019 novel coronavirus outbreak? What is the new name of the disease?	0.457	**0.021**	**0.026**	0.107	0.112
	0.004	0.074	0.643	**0.000**	0.057
Which of the following diseases are related to coronavirus?	0.624	0.672	0.333	**0.005**	0.053
The first case of novel coronavirus was identified in	0.678	0.559	0.168	0.380	0.558
Is covid 19 caused by animals/ humans?	0.392	0.549	0.152	0.249	0.957
Source of information regarding Covid 19?	0.094	0.725	**0.028**	**0.010**	0.098
Do you know the symptoms of Covid-19?	0.133	0.864	0.573	**0.000**	**0.032**
How does Coronavirus transmit?	0.027	**0.000**	0.055	0.425	0.362
What happens to a person suffering from COVID-19?	0.197	0.054	0.170	0.593	0.607
In which age group the COVID-19 spreads?	**0.006**	**0.008**	0.450	0.063	0.808
What are the precautions that need to be taken to protect from the coronavirus?	0.444	0.878	0.698	0.132	0.594
How long does the novel coronavirus service outside the body?	0.533	0.606	0.345	0.446	0.282
What's more important for preventing the infection?	0.372	**0.026**	**0.012**	**0.012**	0.144
What's a safe distance to stay apart from someone who's sick?	0.623	0.344	0.186	0.463	0.428
Who's at highest risk of developing severe covid-19 disease?	0.757	**0.000**	0.193	**0.002**	0.369

While comparing knowledge with age group there was a significant difference observed with the questions onthe first case of novel coronavirus was identifiedand which age group the COVID-19 spreads. While comparing with gender difference on knowledge , variation was observed in the official announcement by WHO, transmission, prevention and highest risk of developing severe Covid-19 disease. Knowledge on prevention was also differ between gender, education, occupation. (Table 3)

Discussion

This is the first study conducted in Puducherry, assessing the knowledge regarding Covid -19 among the general population. Based on our results, the knowledge regarding Covid-19 score almost similar between the age, gender, education, occupation. Based on the knowledge of the participants, an overall correct rate of 59.9% of the respondents had adequate knowledge about the Covid-19 disease. Our results were similar to the previous study regarding KAP towards Covid-19 in Iran which also showed that an overall correct rate of 85% knowledge among the Iran people. The high correct answer rate regarding knowledge

about COVID-19 among Iranian population has its roots partly in their high exposure to the knowledge provided by the govt and media about the virus since the beginning of the outbreak. Another reason might be the very fact that 75.1% of the participants held a tutorial degree and responded actively to the severe condition of the pandemic and therefore the overwhelming news reports, by collecting information from reliable sources. This is supported by the considerably direct correlation between the extent of education and knowledge regarding COVID-19, and is analogous to the results of other studies during this regard.(2)

But in contrast to our study, In Thailand, 73.4% had poor knowledge of disease prevention and control; while in our study (22.6% showed poor knowledge in test A, and 9% demonstrated low knowledge in test B. Furthermore, 28.5% had poor attitude towards disease prevention and control; whereas, in our study 31.4% had poor attitude towards COVID-19. In Thailand only 13.6% had proper skills to stop and control the disease; while in Iran 16.7% showed excellent practice score in our study. The underlying reason for these score differences might be the amount and therefore the place during which the 2 studies were conducted. While in Iran, the study was done at the time of the most phase of the outbreak when the population were exposed to tons of data about the disease, its route transmission and prevention ways, in Thailand the study was done on the population of an area which wasn't seriously suffering from the outbreak. Furthermore, our study showed that higher knowledge score regarding COVID-19 was significantly associated with a higher likelihood of having positive attitude and good practice at the time of COVID-19 pandemic. These results show the importance of improving general population's knowledge regarding COVID-19 by health education schemes which, in turn, would enhance their attitude and practice regarding COVID-19. Our findings of the demographic variables related to KAP concerning COVID-19 are mostly similar to previous KAP studies regarding SARS and COVID-19 in China.(2). Our study showed that the foremost of the respondents (73.2%) obtained their information from Television and newspaper. And also, Zhou et al., via sensitivity analysis suggested that, during the early phase of the COVID-19 outbreak, enhancing the response rate of the social media reporting the severity of COVID-19, also as increasing the response rate of the general public awareness to the media reports, both can significantly convey the message on time and reduce the infection. These findings suggested that media coverage can be considered as an effective way to mitigate the disease spreading during the initial stages of an outbreak. A limitation is that since the COVID-19 can be transmitted via droplets or close contacts, a web-based survey was chosen to decrease the chances of transmission; however, some biases such as lack of internet access.

IV. Conclusion

In the conclusion of our study suggest that general population had good knowledge regarding Covid-19 during the outbreak. Most of the study participants were from the age group of 21-30 years. In this study, most of them completed their Under graduation, this could be a reason for adequate knowledge. Adequate awareness of COVID19 is contained in this study to the general public. By social media and newspapers beyond COVID19 monitoring and prevention India's Government took a strong initiative. Sensitizing the cause, transmission and prevention of diseases through unique, effective and creative programs has a strong impact on the community. Hopefully, positive monitoring and elimination of the disease can be expected by enhancing awareness through policy-makers in public health and collaboration with the Puducherry authorities and the general public.

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