International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.9756/INTJECSE/V14I5.262 ISSN: 1308-5581 Vol 14, Issue 05 2022

Perceived myths and misconceptions about COVID 19 among adult population in an urban area in Chennai – a web based cross sectional study

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ABSTRACT:

INTRODUCTION:

Since the news of COVID 19 disease origin till now there has been many changes in the understanding of the disease.Lack of knowledge and misconception often leads to arousal of myths among the community. Due to the misconception and myths, people use wrong measures for prevention and treatment, thereby making them prone to infection. This study is done to know about proportion of people with high level of myth and misconception among adults.

METHODOLOGY:

This study is a cross-sectional design to assess the myths and misconception on COVID-19 among the adult by purposive sampling technique. Data was entered in Microsoft Excel and analyzed using SPSS software version 21.

RESULTS:

A total of 334 participants participated in this study out of which 52.99% of the participants had high level of myths related to COVID 19. There was statistical significance between high level of myths and age, education, occupation and marital status.

CONCLUSION:

Despite the awareness created through various media, people are having high levels of myths which needs to eliminated. Gaining knowledge through verified source is important to eliminate misconception about a disease.

KEY WORDS: Corona virus,knowledge, misconceptions

INTRODUCTION:

Coronavirus disease (COVID-19) iscontagious disease caused by severe acute respiratory syndrome corona virus 2 (SARS CoV2) [1]. The first known case was identified in Wuhan, China in December 2019[2]. The disease has spread worldwide, leading to an ongoing pandemic.There has been umpteen number of changes in the understanding of disease since the origin of pandemic with regard to mode of transmission, preventive measures and treatment guidelines[3]. As research into COVID-19 continues, many facts about it are continuously changing.Public is exposed to too much information regarding COVID 19 through various media which has led to misconceptions regarding the disease. Lack of knowledge and misconception often leads to arousal of myths among the community

In the current world, social media is a powerful tool. People tend to believe whatthey watchover social media due to which both accurate and false information related to COVID 19 is spreading rapidly[4].In spite of creating awareness and providing adequate information about infection control measures and mode of spread of the infection to the general public through telecommunication such as radio, television advertisements, public health messages, distributing pamphlets or signboards at public places; still, there are a large number of myths existing among the general population. Due to the misconception and myths, people tend to use irrational measures for prevention and treatment, thereby making them prone to infection which could cost them their life[5].

Various surveys were conducted in Indiaregarding perceived myths and misconceptions about COVID 19 among adults. The outcome of the study was to identify the more common myths or percentage of people having myths related to COVID 19.This study was conducted to estimate the proportion of people with high levels of myths, socio-demographic determinants and also to educate them regarding COVID 19. Hence our study helps in reduction of transmission of these myths from person to person which is more contagious than COVID 19.

METHODOLOGY:

STUDY DESIGN, STUDY AREA AND POPULATION

This was a cross sectional study carried out in Chennai, Tamil Nadu during July 2021 to August 2021.

SAMPLE SIZE AND SAMPLING TECHNIQUE

According to Reference article : Reddy P et al, prevalence of high level of myths related to COVID 19 was 44.69[6]. Using the formula Z^2pq/e^2, where Z value is 1.96 for 95% confidence level, p is percentage of people with myths related to COVID 19 which was 44.69%, q is 100-p =55.31 and e is allowable error which is taken as 5% the sample size was calculated to be 268 and attrition rate of 10 % and it was rounded off and taken as 295 who were selected by purposive sampling technique.

INCLUSION AND EXCLUSION CRITERIA

The inclusion criteria are participants living in Chennai who are 18 years and above. They should be able to fill online questionnaire.Participants who are health care professionals are excluded from the study

ETHICAL CLEARANCE

The study was carried out after obtaining approval from the Institutional Ethical Committee in a private medical college in Chennai

DATA COLLECTION

The present study is a quantitative approach using a cross-sectional design to assess the myths and misconception on COVID-19 among the adults.The questionnaire is of two parts – part one consisting of sociodemographic details and part two consisting structured questionnaire with 20 questions. The part two- 20 questionsfor this study was formulated in such a way that – transmission, prevention, treatment and vaccination regarding COVID 19 was asked to the participants, thereby the overall idea of the participant about COVID 19 could be assessed. Data was collected through an online platform due to pandemic situations to avoid the spread of infection. An online structured questionnaire was distributed using Google forms, with a consent form added to it. Questionnaire link was sent through WhatsApp, Facebook, email, Instagram, and other media to contact the participant. On receiving and clicking the link, the participants got auto directed to the study's information and informed consent. After accepting to participate in the survey, participants had to fill up the demographic details followed by myths questions related to COVID-19. After the initial set of questions participants had been directed to a video regarding the facts related to COVID 19 created by the author(https://youtu.be/-2X14brwtxY).

STASTICAL ANALYSIS

Data was entered in MS Excel and analyzed using SPSS software version 21 . In the past two of the questionnaire, those who told yes for a question was given 2 points whereas those who told no were given 1 point. Participants were categorized as people having high level of myths is they score more than the median score and people having low level of myths if they score less than the median score. Frequencies and Chi Square was used to analyze the data . Results was presented as tables and figures . 95% confidence intervals and P value <0.05 will be considered statistically significant

RESULTS:

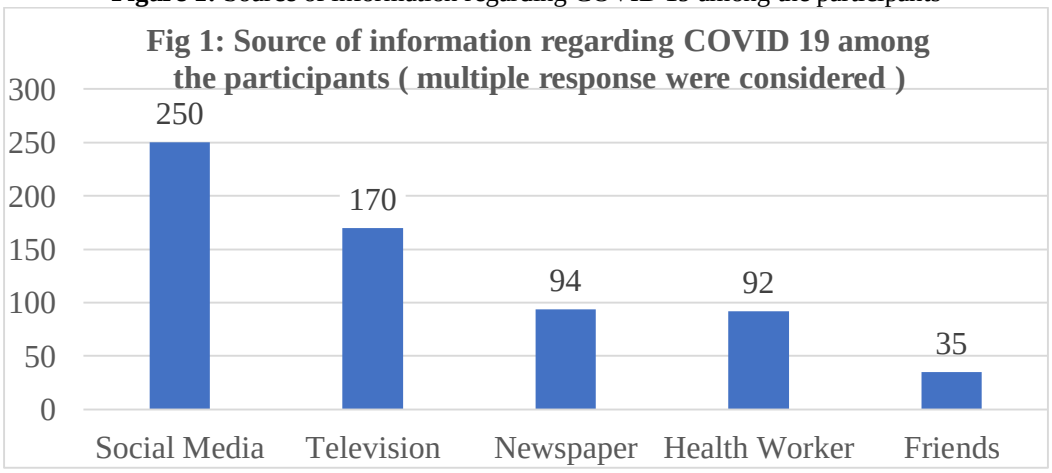
DEMOGRAPHIC DETAILS AND SOURCE OF INFORMATION REGARDING COVID 19

A total of 334 participants agreed to participate in this study. Majority of the participants were in the age between 20-39 (41.02%).Of the total study participants 195 were male. More than 2/3rd of participants was married(Table.1).Participants were asked about the source of information regarding COVID 19 , the most used source to obtain information regarding COVID 19 was social media and least used source to obtain information regarding COVID 19 was friends(Fig.1)

Table 1: Socio demographic details of the participants in this study

Socio demo graphic details	Category	Numbers (Percentage)
Age	<20	6(1.80)
	20-30	137(41.02)
	30-40	60(17.96)
	40-50	56(16.77)
	50-60	64(19.16)
	>=60	11(3.29)
Gender	Male	195(58.38)
	Female	139(41.62)
Marial status	Married	223(66.77)
	Unmarried	111(33.23)
Religion	Hindu	296(88.62)
	Christian	38(11.38)
Education	Professions of honour / post graduate	153(45.81)
	Graduate	153(45.81)
	Diploma	18(5.39)
	High school	10(2.99)
Income	>=123322	59(17.66)
	61663-123321	65(19.46)
	46129-61662	53(15.87)
	30831-46128	58(17.37)
	18497-30830	40(11.98)
	6175-18496	27(8.08)
	<=6174	32(9.58)
Occupation	Legislators, Senior Officials and Manager	63(18.87)
	Professionals	202(60.48)
	Technicians and Associate Professionals	20(5.99)
	Skilled workers and shop and marker sales worker	19(5.69)
	Unemployed	30(8.97)
Socioeconomic class	Upper	92(27.54)
	Upper middle	206(61.68)
	Lower middle	20(5.99)
	Upper lower	16(4.79)

Figure 1: Source of information regarding COVID 19 among the participants



RESPONSE FOR QUESTIONS RELATED TO COVID 19

Participants were asked questions about COVID 19 transmission, prevention, treatment and vaccination. There werefive questions in each domain with yes and no option. About 44.6% of the participants believed that washing vegetables and groceries with disinfectant will prevent COVID 19 transmission. Most of the participants(91.9%) were clear that COVID 19 is not a vector borne disease. Nearly 2/3rd of the participants (70.1%) believed that wearing gloves in public places will protect them from contracting Coronavirus. Only 10.5% of the participants thought that after recovering from COVID 19, there is no need to follow COVID 19 appropriate behavior. About 68.6% of the participants believed taking home remedies like garlic, turmeric, ginger, pepper etc. will help to treat COVID 19 infection. Only 15% of the participants believed that only steroid will make all COVID patient recover. 11.7% of the participants thought that they are 100% immune to COVID 19 after vaccination. Just 2.1% of the thought that there is no need to wear mask after getting vaccinated. (Table.2).177 (52.99%) of the participants had high levels myths related to COVID 19.

Table 2: Distribution of responses for the questions related to COVID 19

S.No	STATEMENT	YES N(%)	NO N(%)
Questions related to COVID 19 transmission			
1	Washing vegetables and groceries with disinfectant will prevent COVID 19 transmission	149(44.6)	185(55.4)
2	Eating non-veg is a risk for transmission of COVID 19	36(10.8)	298(89.2)
3	COVID 19 disease can get transmitted through unclean water	69(20.7)	265(79.3)
4	Houseflies/mosquitoes transmit COVID-19 disease from one person to other	27(8.1)	307(91.9)
5	Lactating mother can transmit COVID 19 disease to her baby through breast feeding	84(25.1)	250(74.9)
Questions related to COVID 19 preventive measures			
6	Drinking warm water rinses the COVID-19 virus from my throat	165(49.4)	169(50.6)
7	Thermal scanners are effective in detecting people infected with Coronavirus	121(36.2)	213(63.8)
8	Prolonged mask wearing will lead to reduce oxygen level in our body	153(45.8)	181(54.2)
9	Wearing gloves in public places will protect us from contracting Coronavirus	234(70.1)	100(29.9)

10	After recovering from COVID 19, you can stop following preventive measures (Social distancing, wearing mask and hand hygiene)	35(10.5)	299(89.5)
Questions related to treatment of COVID 19			
11	Taking antibiotics is the treatment for COVID 19	122(36.5)	212(63.5)
12	Only steroid will make all COVID 19 patient recover	50(15)	284(85)
13	Taking vitamin / mineral supplements will treat COVID 19 infection	182(54.5)	152(45.5)
14	Steam inhalation will help to cure COVID 19 patients	196(58.7)	138(41.3)
15	Home remedies (garlic, turmeric, ginger, pepper etc) will help to treat COVID 19 infection	229(68.6)	105(31.4)
Questions related to COVID 19 vaccination			
16	I will get COVID 19 disease from COVID 19 vaccine	28(8.4)	306(91.6)
17	COVID 19 vaccine is an unsafe vaccine as it was developed quickly	28(8.4)	306(91.6)
18	COVID 19 vaccine can cause infertility in women	11(3.3)	323(96.7)
19	After vaccination there is no need to wear mask	7(2.1)	327(97.9)
20	After vaccination, I am 100% immune to COVID 19	39(11.7)	295(88.3)

ASSOCIATION BETWEEN DEMOGRAPHIC DETAILS AND MYTHS RELATED TO COVID 19

There was statistical significance between presence high levels of myths and age, education, occupation and marital status. 'Legislators, senior officials and manager' group had 2.403 odds of having high levels of myths when compared to 'professionals and below' group. Similarly 'graduate and below' group had 2.090 odds of having high levels myths when compared to profession or honours. The age group were categorized to above and below 40 years, in which participants above 40 years had 1.628 odds of having high levels of myths when compared with participants who were less than 40 years(Table.3).

Table 3 : Association between demographic details and level of myths related to COVID 19

Demographic profile		**High level of myths**	**Low level of myths**	**Total**	**Chi square value**	**P value**	**Odds ratio (CI)**
Age:	>40	79	52	131	4.625	**0.032***	1.628

	<=40	98	105	203			(1.132-3.012)
Gender:	Male	112	83	195	3.711	0.054	1.536 (0.967-2.335)
	Female	65	74	139			
Religion:	Hindu	158	138	296	0.154	0.694	1.145 (0.856-1.957)
	Christian	19	19	38			
Education:	Graduate and below	111	70	181	11.012	**0.001***	2.090 (1.241-3.324)
	Profession or Honours	66	87	153			
Occupation:	Legislators, Senior Officials and Managers	44	19	63	8.847	**0.003***	2.403 (1.432-3.845)
	Professionals and below	133	138	271			
Total family income per month:	<=46128	85	72	157	0.156	0.693	1.091 (1.010-4.223)
	>46128	92	85	177			
SES class:	Upper middle and below	134	108	242	1.994	0.158	1.414 (0.889-1.923)
	Upper	43	49	92			
Marital status:	Married	127	96	223	4.217	**0.040***	1.614 (1.212-2.956)
	Unmarried	50	61	111			

DISCUSSION:

The study was conducted with an objective to estimate the proportion of people withhigh levels myths and misconceptions regarding COVID 19 and to assess the association with socio-demographic details. 52.99% of the study participants had high level myths related to COVID 19. Among the demographic details there was a statistical significance between age, education, occupation, marital status and participants who had high levels of myths.

Nearly 74.85% of the participants mentioned they received information on COVID 19 through social media. In study done by Meena KS et al, about half of the participants(47%) mentioned that the source of information of COVID 19 was through social media[7]. The difference could be attributed to access of smart phone and social media which is different from place to place.

About 44.6% of the participants believed that washing vegetables and groceries with disinfectant would prevent COVID 19 disease, which is similar findings in study done by Reddy et al(29.04%)[6].There is no evidence suggesting transmission of COVID 19 through contaminated vegetables and groceries[8]. But nevertheless vegetables and groceries are to be washed properly in any circumstances.Nearly 8.1% of the participants told yes for the statement 'Houseflies/mosquitoes transmit COVID-19 disease from one person to other' which was nearly double than percentage by Reddy et al(4.33%) and about 1/4th of the participants(32.4%) in study done by Meena KS et al[6.7]. Though mosquitoes transmit virus like Dengue, Chikungunya, Zika virus etcbut there is no evidence suggesting transmission of COVID 19[9]. In a study done by Balaraman V et al,it was found that under laboratory conditions, houseflies acquired and harbored infectious SARS-CoV-s for up to 24 hours post exposure but further studies were warranted to determine if housefly transmission could occur naturally[10].

When asked the question'Lactating mother can transmit COVID 19 disease to her baby through breast feeding'25.1% of the participants answered yes,which was lesser than previous study(32.28%)[6]. According to National Health Portal of India, there is no data available so far regarding transmission of active COVID 19 through

breast feeding[11]Similarlywhen asked the statement 'Taking vitamin / mineral supplements will treat COVID 19 infection'about 54.5% of the participants answered yes to the statement which was about2/3rd percentage to previous studies (75.79%)[6].'Home remedies (garlic, turmeric, ginger, pepper etc) will help to treat COVID 19 infection'was asked to the participants for which 68.8% agreed with the statement which was higher than previous study findings (45.87%)[6]. According to National Institutes of Health, there is no data recommended for or against the use of vitamins or home remedies to prevent or treat COVID 19[12].Compared to other domains, the participants had less myths and misconception regarding vaccination which could be as it was relatively new for the people during the time of study

44.69% of the participant had high level of myths related to COVID 19 in study done by Reddy et al which is slightly lesser than findings in our study (52.99%)(6). At the end of questionnaire, the participants were directed to a link which had a video regarding the questions asked in the study with explanation (created by the author). The strength of the study was that majority of the participants provided positive feedback that they were benefited with the health education video and obtained accurate informationregarding COVID-19.The limitation was that the study was done through online mode and only people with internet access were able to be assessed.

CONCLUSION:

This study is just a tip of ice berg. The study suggests that proportion of people with high level of myths related to COVID-19 was highin a metropolitan city like Chennai which hasenormous accessibility to COVID 19 information through various media. The access to social media is an important factor in spread of myths and facts related to COVID 19.It is acombined responsibility of the individual and media not to share misinformation without verifying the source and facts of information. Efforts are need to be made to verify the information regarding COVID 19 in social media so that transmission of myths is blocked.

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