

First & Second Wave of Covid-19: A Study On Knowledge, Awareness and Hygiene Practices Among People in India

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Abstract

Background: information about COVID_19, from where it started, global impact of COVID-19, family of COVID-19, impacted sectors because of COVID-19, information about both the waves, the sources of information, from where people are getting information about this virus, etc have been taken.

Past Study: Balvir Singh Tomar, Pratima Singh, Sandeep Tripathi & Dushyant Singh Chauhan(2020) entitled “Indian Community’s Knowledge, Attitude & Practice(KAP) towards COVID-19”

Objectives: To investigate the awareness & hygiene about COVID-19 among the general population of India. To identify their level of knowledge for taking necessary precautions about COVID-19.

Hypothesis: There is no significant difference between the age group & level of awareness among the people. There is no significant relation between age & illness.

Eligible data: For comparing both the waves two questionnaires has been prepared, the only difference is symptoms and time period. The first questionnaire was for first wave which was for spring-March2020 to April,2020 and the second questionnaire is for second wave which is from March 2021 to April,2021.

Statistical Analysis: For data collection, online platform of Google forms is used. For statistical analysis, SPSS package version 12. For awareness Kruskal Wallis test has been applied and significance value 0.05 was considered for analysis. For perceptive the illness because of COVID-19 and between diverse age groups in both the waves chi-square test is used as both variables are independent in nature.

Conclusion: In examining the situation of both waves, people are now more aware compare to first wave, government and people both are taking necessary steps. Necessary precautions should be taken for further safety.

Keywords: COVID-19, Age, Knowledge, Illness, Awareness.

Background:

The word COVID-19, broadly known as Coronavirus disease comes from the family of viruses named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was diagnosed on November 17, 2019 originated in Wuhan, China. It was reported to WHO on 31 December, 2019 (MAJID MALEK). Another family member of these viruses is Severe Acute Respiratory Syndrome (SARS) in 2003 and Middle-east respiratory syndrome (MERS) in 2012 (Jagdishbhai, 2020). In a less than few months this virus spread over more than 210 countries/territories. As this virus spread so rapidly, it was declared as pandemic on March 11, 2019 by World Health Organization. To control this pandemic each country has taken different steps to prevent public from this pandemic. The government of India has also taken steps to control the spread of COVID-19 transmission. Those measures include closure of schools, business organizations, public gatherings, tourism, educational institutions, etc. a

smart lock-down policy has been applied all over the nation. Which is appreciated by WHO representatives.

There are around two waves of this virus, first wave has been seen in spring 2020 and the second wave emerged in end of 2020. The basic difference between in these two waves are the symptoms and age differences. In the first wave the common symptoms noticed that are problem related to respiratory, cough/fever, Sore Throat Pneumonia, etc. which mostly affected at elder age group. In the second wave the symptoms are loss of smell, Fatigue, Sore Throat, Muscle Pain/Body Ache, Dizziness, etc.

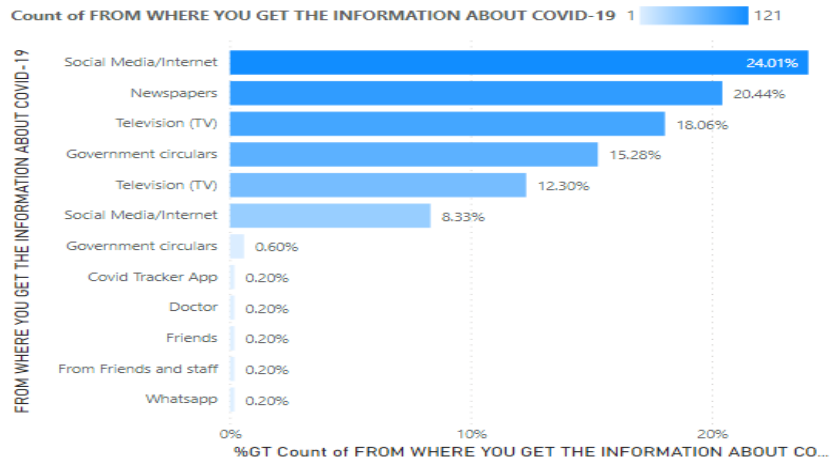


Figure 1: Sources of Information of First Wave

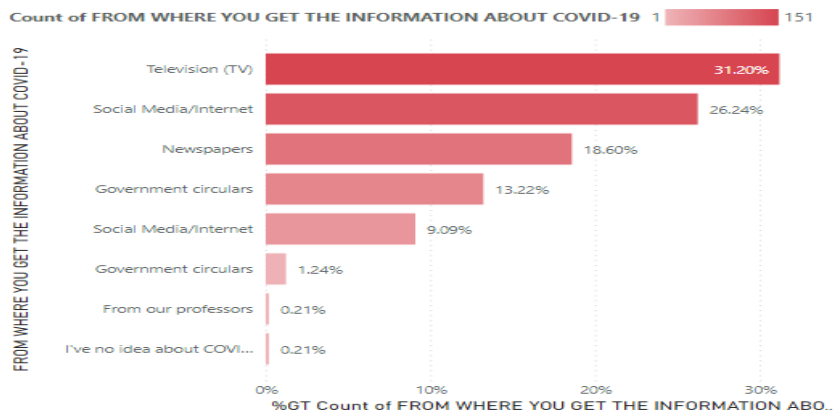


Figure 2: Sources of Information of Second Wave

Past Studies:

Balvir Singh Tomar, Pratima Singh, Sandeep Tripathi & Dushyant Singh Chauhan(2020) entitled “Indian Community’s Knowledge, Attitude & Practice(KAP) towards COVID-19” is a web based cross sectional survey was conducted in march, 2020 with 19 set of questionnaires arranged for fulfilling the objectives that are to assess the KAP regarding COVID-19 among the general population of India and to assess the factors associated with KAP. The chi-square test was used to compare categorical data. The result obtained from the statistical analysis was study population characteristics, knowledge related to COVID-19, Attitude Score related to COVID-19, Practice Score related to COVID-19, Correlation between knowledge, attitude and practice scales Most of the Indian population established with good knowledge, positive attitude and good practice about COVID-19. Other than that Government policy makers and health workers has worked well in fighting back with the disease. (Tomar & Singh, 2020)

Objectives:

1. To investigate the awareness & hygiene about COVID-19 among the general population of India.
2. To identify their level of knowledge for taking necessary precautions about COVID-19.

Hypothesis:

1. There is no significant difference between the age group & level of awareness among the people.
2. There is no significant relation between age & illness.

Material & Methods:

For comparing both the waves two questionnaires has been prepared, the only difference is symptoms and time period. A cross sectional study was conducted with the help of questionnaire which consisted on 19 set of questions including nominal (multiple choice & check-box questions), & scale Date (Likert scale various levels) questions. The questionnaire contains socio-demographic (name, age, contact details, educational qualification, etc) and questions related to COVID-19 such as taking necessary precautions, awareness about symptoms, level of fear, public gatherings, travel information, level of risk, action against not following guidelines, etc are included. A pilot study was done to understand the hurdles faced by respondents and sequence of the questionnaire. The questionnaire made available to all the participants through various social media such as WhatsApp, LinkedIn, Facebook, etc. all the responses collected online as face-to-face meet is not possible in this pandemic. The front page of both the questionnaire covers the basic information about COVID-19 and consent has been taken from participants regarding authenticity and confidentiality is to be maintained by the author. The first questionnaire was for first wave which was for spring- March2020 to April,2020 and the second questionnaire is for second wave which is from March 2021 to April,2021. The respondents are mostly from India & outside India but more responses are covered from Kachchh District as per the availability of online Networks.

Statistical Analysis :

For data collection, online platform of Google forms is used. For statistical analysis, SPSS package version 12. Demographic variables such as age education etc are taken for analysis along with questions related to COVID-19 that are awareness, risk, wearing mask and knowledge about symptoms are taken into account. For knowing the level of awareness among the different age group, three awareness factors have been taken such as risk factor, wearing mask and awareness level and they are hypothesized with different age group for both the waves, Kruskal Wallis test has been applied and significance value 0.05 was considered for analysis. For perceptive the illness because of COVID-19 and between diverse age groups in both the waves chi-square test is used as both variables are independent in nature. And in chi-square test testing the level of significance level which is 2- sided, Pearson's Chi – square p-value 0.05 has been used for analysis. Lastly for comparing the symptoms of both the waves data collected from google forms and analysis was done in POWER BI software powered by Microsoft is used for data visualization.

Demographic Characteristics

For Demographic Characteristics mean & Standard deviation are obtained and percentage number has been taken for both the questionnaire. And for checking the normality of data, dependent variables are put into the software. To check the normality of data there are lots of ways i.e., 1. the data is normally distributed with the help of Histograms, Normal Q-Q plots and box plots. 2. With the help of Skewness & Kurtosis. 3. Lastly, with the help of Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MASK	.384	197	.000	.685	197	.000
AWARENESS	.350	197	.000	.724	197	.000
RISK_FACTOR	.334	197	.000	.736	197	.000

a. Lilliefors Significance Correction

Table1: Normality Test of First Wave

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
AWARENESS	.399	197	.000	.666	197	.000
MASK	.447	197	.000	.589	197	.000
RISK_FACTOR	.388	197	.000	.679	197	.000

a. Lilliefors Significance Correction

Table2. Normality Test of Second Wave

In order to check normality of data, Shapiro-Wilk test is applied, also Q-Q plots have been checked. As per the test of normality, in Shapiro-Wilk test, if the value of significance is greater than

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0.05, the data is normal. And if, it is less than 0.05 then data is significantly deviate from normal distribution. Here, table 1 shows the significance value is .000 which means it is less than 0.05, so data is not normal and non-parametric test has been applied for further hypothesis. As well as in the table 2 the value of significance is .000 which means for both the data, non-parametric test has been taken for hypothesis testing and for obtaining results.

Awareness Level:

Table 3 shows the results of hypothesis of first wave, Kruskal Wallis test was run to examine if there were any age group associated with that are the people aware about the past study of COVID-19, wearing mask can protect them from corona & risk of getting infected COVID-19 near you.

Test Statistics^{a,b}

	AWARENESS	MASK	RISK_FACTOR
Chi-Square	12.744	9.639	5.926
Df	3	3	3
Asymp. Sig.	.005	.022	.115

a. Kruskal Wallis Test

b. Grouping Variable: AGE

Table3: First Wave: Kruskal Wallis Test

As per the Test Statistics for age which is associated with awareness, $H(1) = 12.744$, $p < 0.005$, with mask $H(1) = 9.639$, $p < 0.022$, with risk factor $H(1) = 5.926$, $p > 0.115$. This leads to reject the null hypothesis of difference between how age group affects awareness, mask & risk factor.

Test Statistics^{a,b}

	AWARENESS	MASK	RISK_FACTOR
Chi-Square	10.753	2.224	9.215
Df	3	3	3
Asymp. Sig.	.013	.527	.027

a. Kruskal Wallis Test

b. Grouping Variable: AGE

Table4: Second Wave: Kruskal Wallis

Table 4 shows the test of hypothesis of second wave, the variables are same as for first wave & which gives the results as follow: As per the Test Statistics for age which is associated with awareness, $H(1) = 10.753$, $p < 0.13$, with mask $H(1) = 2.224$, $p > 0.527$, with risk factor $H(1) = 0.027$, $p > 0.027$. This leads to reject the null hypothesis of difference between how different age groups affects different level of awareness.

Level of Illness :

For testing the level of illness second hypothesis for first wave of COVID-19 is generated which is based on two categorical variables one is independent i.e., age factor another one is falling ill due to covid-19. For testing the two categorical data chi-square tests has been applied for observed & expected frequencies for both the waves. Using chi-square in SPSS becomes quite easy to know the result as it examines the association between categorical variables. For testing the chi-square test in the SPSS for the first wave, cross processing summary shows all data sets are valid, no missing data is found. cross tabulation age and illness factors are tabulated.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.635 ^a	3	.651
Likelihood Ratio	2.975	3	.396
Linear-by-Linear Association	.107	1	.744
N of Valid Cases	197		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .14.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.091	.651
	Cramer's V	.091	.651
N of Valid Cases		197	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table5: Chi Square Test of First Wave

A significance level of p-value plays an integral role as 5% risk of concluding that when there is no actual association and concluding variables between the variables. While reading the table, the results indicates here that $X(1) = 1.635$, $p = .485$. This explains that there is no statistically relationship between age and illness. As per the symmetric measure's values, Phi & Cramer's V values are 0.091 which are relatively moderate. So, we accept the null hypothesis.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.301 ^a	3	.512
Likelihood Ratio	2.284	3	.516
Linear-by-Linear Association	2.163	1	.141
N of Valid Cases	197		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .19.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.108	.512
	Cramer's V	.108	.512
N of Valid Cases		197	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table 6: Chi Square Test of Second Wave

For the second wave of COVID-19 in the second hypothesis, cross processing summary shows all the valid data, no missing data is originated in the second wave as well. Cross tabulation of age and illness are tabularized with different age group & illness. A table of Chi-square test displays that the value of Pearson Chi-Square $X(1) = 2.301$, $p = 0.512$ clarifies that there is no significant relationship

between age and illness. As per symmetric measures value of Phi & Cramer’s V is relatively moderate, so we accept the null hypothesis.

i. Knowledge of symptoms of First Wave V/s Second Wave:

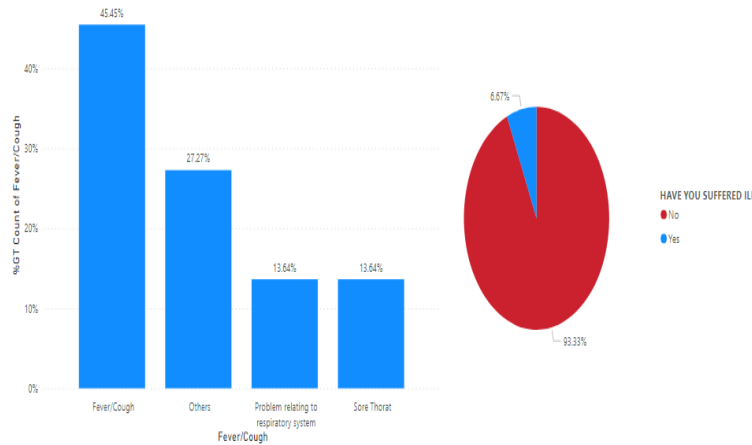


Figure3: Knowledge of Symptoms of First Wave

For the respondents who said yes that they have suffered illness recently are mentioned above and who said various list of symptoms is given to them. The above graph represents the various symptoms connected with COVID-19 wave -1. These are some common symptoms which are taken in account for research although there are 14 different symptoms for COVID-19 which were noticed. Here the most common symptom seen is Fever/Cough after that Other symptoms apart from these symptoms, problem related to respiratory and Sore throat were noticed. From this we can say that there was not any kind fixed symptom is found from which this virus can b detected.

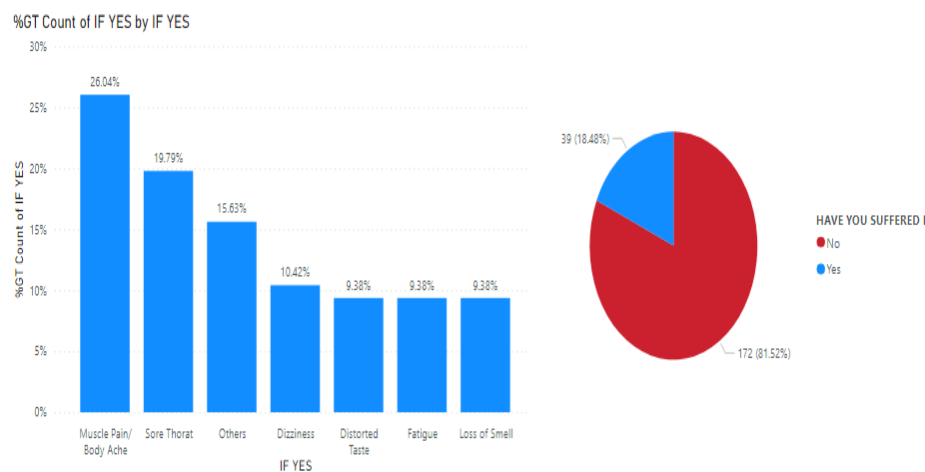


Figure 4: Knowledge of Symptoms of Second Wave

In the second wave of COVID-19 which seems to be quite serious for young age people. For the second wave of COVID-19 as well same question about illness have been asked and respondent who said yes have given few options of symptoms which were different from wave -1 and has been noted commonly among the COVID-19 patients. The major common symptom has been seen Muscle Pain/ Body Ache after that Sore throat. Sore throat has been noticed in both the waves. And also, few other extra symptoms noticed. Apart from these symptoms other symptoms are Loss of smell, Distorted Taste & fatigue symptoms are shown in the graph.

Conclusion:

The current scenario of COVID-19 is very awful for human lives. It affected globally, not only damaged lots of lives of human beings but also effects on their mentally, physical, socio-cultural and emotional health. These times are very crucial for every human being as for the very first time we have to take care for our own to overcome from this virus as no such vaccine or medicine is created till now, which can save human directly. In the first wave it has been noticed that people who were suffering from already such kind of illness and found COVID-19 has been noticed severe to overcome from this disease. But in the second wave the situation is rather different as young age people affected the most, they are losing their lives because of not maintaining their oxygen level. And for enhancing their knowledge and awareness about this disease such kind of web-based questionnaire have been prepared. The first wave data was taken when the COVID-19 has just arrived in India and I would like to reconnect with the participants to appraise their level of awareness and knowledge at the flow of current second wave. And from these data we can evaluate a huge difference in the level of awareness, knowledge and precautions are taken, etc. Both are different in both the waves, in the first wave, the level of risk was higher and people were most careful for their health and awareness. The situation was faded in the second the second wave people are less aware as compared to first wave and they are used to with all kinds of guidelines although the COVID-19 hits hard in the second wave.

Respondents are mostly aware about government policies and they are careful as well. The majority of people are taking necessary precautions by following social distancing, concept of wearing masks, frequent hand sanitization, etc have been followed. Nonetheless these are common possible explanation for reducing the confirmed cases in India. The hypothesis about knowledge awareness is practiced with the help of various software's and results were obtained for proving the hypothesis, awareness level is balanced up to some extent, but low level of knowledge is examined among the people. At present, India is affected largely but findings suggests that there is much more to be done in this regard. The government of India as well the people of India need to put same efforts to overcome from this pandemic. Necessary education programmes for literate as well for illiterate people should be there in various languages. Most importantly, the government should rebuild the trust among the people by providing necessary help and facilities in hospitals. In case of failure of these issues, there happen a rational possibility of a new wave of COVID-19 in India, as it happened globally.

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