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Social Determinants of Awareness about Covid Vaccine in an Urban Setting

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Abstract - As has already been widely noted, the COVID-19 pandemic, a global health concern of proportion rarely encountered by the humanity in the recent past had created a havoc, mayhem and panic worldwide. The pandemic was triggered by the infectious spread of the Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2). The corona virus was first traced in an outbreak at Wuhan, a Chinese city in December 2019. Owing to several secretive and reticent initiatives and practices by the governmental and scientific communities efforts to contain its spread proved futile, as a consequence of which the virus to spread to other parts of Asia and later to the other continents of the world. The World Health Organization (WHO) declared the outbreak a public health emergency of international concern (PHEIC) on 30 January 2020. The symptoms of COVID-19 most commonly include fever cough, congestion and fatigue. Most often, the transmission takes place through airborne particles released through cough and sneeze. In later phase, several mutations of the virus with varying degrees of infectivity and virility were observed among the infected people rendering it difficult to diagnose and treat. As of now, there are no specific antiviral therapies to treat COVID-19, and vaccination is considered as the only possible and cost effective measure or intervention to counter the COVID-19 infections and its spread. is considered to be one of the most cost-effective health interventions for the prevention and control of the pandemic (1,2,3). It has indeed been noted and is a proved fact that so far as public health is concerned, vaccination has been the most effective means or measure of controlling and mitigating the spread of communicable diseases (4).

Keywords - COVID-19, Pandemic, Social determinants, Population, Vaccination.

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INTRODUCTION

However, the Indian Government initiated the world's largest vaccination drive involving about 900 million people on 16th January 2021(5) Indian population had access to only two vaccines in the beginning, one was Covishield produced by Oxford-AstraZeneca combine and the other was the first indigenous vaccine named as Covaxin, produced by Bharat Biotech, which were specifically approved by the Central Drugs Standard Control Organization (CDSCO) of India, for restricted emergency use keeping in view the urgency, severity and the enormity of the situation being faced(6). The vaccine was made available free at public health institutions and availing vaccination was voluntary. People could register with the Co-WIN Portal and schedule their vaccination appointment(7) However, despite these efforts by the government, the response from the people public during the begriming of the first phase was rather lukewarm. The overall turnout after registration was only 53 % on the first day, 44 % on the second day and 48 % on the third day. In all 6, 31,417 people were vaccinated in the first three days which was far below what was expected(8). This poor turnout was attributed to several factors including the concern about the t efficacy and safety of the vaccine and the lack of awareness as well as misinformation being circulated in the social and mass media being offered(9). The Hindustan Times, a leading daily reported that only 4percent of the registered recipients turned out for the second dose in February 2021, when the those having taken the first dose were eligible for the second dose after the stipulated time lapse between the first and the second doses(10).

These dismal figures of vaccination seem to indicate that people were not adequately counseled about the advantages of opting for vaccination and there appeared to be a sense of apprehension, fear and lack of trust in the efficacy and effectiveness of the vaccine on the one hand and fear of side effects and long term negative implications of vaccine put in circulation on the social and mass media. Hence, it is logically and rationally assumed that the performance and success of the vaccination drive depends to a large extent on the knowledge and awareness about the vaccine among the people at large and even the healthcare workers (11). It is precisely on these assumptions and premises, an empirical study focusing on the extent of accurate knowledge and level of awareness about the COVID vaccine and the social variables that determine the level of awareness appears to be justified and warranted as the findings of such a study could be of important suggestive value in dealing with vaccine hesitancy and poor levels of vaccine acceptance so widely prevalent among the people at large.

OBJECTIVES

Keeping in view the foregoing discussion and the applied significance and implications of the empirical study on the vaccination drive in India the present study seeks to address itself to empirically ascertain the level of awareness about COVID vaccine and the social determinants of the observed levels of awareness among cross section of society represented by 200 respondents from an urban setting, representing the city of Bangalore. Based on these findings a few suggestions have been attempted which could help enhance the level of awareness about vaccine among the Indian masses.

METHODS

Instrument of data collection:

In consonance with the nature of the study and its objectives as well as the respondents from whom the data were to be gathered, an interview schedule was prepared consisting of questions and statements based on the responses to which a scale of awareness was devised. This scale was employed to ascertain the level of awareness about the vaccine. The introductory section of the interview schedule consisted of questions aimed at eliciting information pertaining to the social background of the respondents which could be employed as the explanatory or independent variables in the identification and analysis of social determinants of the level of awareness.

Sampling:

In order to draw a sample of respondents as representative of the city of Bangalore as possible in its composition, 5 wards were selected keeping their socio-cultural and economic background, on the assumption that awareness could be conditioned or influence by their social standing. In all, 200 respondents were selected taking 40 respondents from each of the five wards. Forty households were randomly selected from each ward and one member from each household was interviewed.

Analysis:

The primary data gathered by introducing the field instrument were coded by devising a suitable coding key to convert the qualitative data into quantitative data and by employing SPSS package the data were analyzed to generate linear (frequency) tables and bi-variate tables for both descriptive and analytical requirements of the study. Further association and strength of association between the dependent and independent or causative variables could be ascertained by employing chi-square and 'C' tests. Further the findings of the study, both descriptive and inferential, have been presented in a manner that suit best the purpose through tables and diagrams.

SOCIAL PROFILE OF THE RESPONDENTS

Social profile of the study group is an important component of sociological study of any group or issues concerning society. It provides a bird's eye view of the context and even determines the predictability, scope of application and validity of the findings. Even more significantly the social profile can help derive independent or causative variables for identification and analysis of causal association between the dependent and independent variables.

Age

Age is an important background of variable in a sociological study of attitudes orientations and dispositions as the age of a person not only determines his or her status or social standing and functional importance but also represents the level of maturity and thereby their dispositions and responses to the situations in which they find themselves. It also determines their aptitude and adaptation to the social realities they come to face.

Table - 1: Age Distribution of the Respondents

	Frequency	Percent
No response	1	.5
Less than 20 years	28	14.0
20 to 30 years	123	61.5
31 to 40 years	27	13.5
41 to 50 years	12	6.0
More than 50 years	9	4.5
Total	200	100.0

The table reveals that nearly two thirds (61.5 percent) of the respondents are from the age group of 20 to 30 years and less than ten (9.5) percent are above the age of 41 years. About 14 (13.5) percent are in the age group of 31 to 40 years and another 14 percent are of the age below 20 years. If we classify the respondents on the basis of age as young, middle aged and elderly- about 75 percent belong to the young category and about 20 (19.5) percent are from the middle age group and only about 5 (4.5) percent are the elderly respondents. On the whole it appears that a majority of respondents are in the younger age group.

Gender:

Gender is another important social variable in sociological studies as it is believed that the social and physical or material conditions of existence of an individual is mainly viewed as the function of gender. It is more so in case of traditional societies with orthodox ways of life like India. . Despite the influence of these harbingers of social change or transformation gender continues to condition or regulate diverse aspects of one's social life including access opportunities as well as attitudes and orientations.

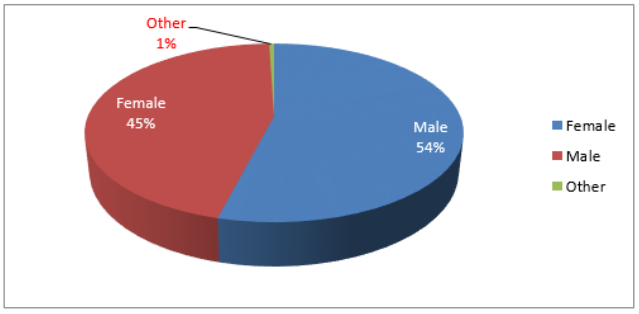

Chart – 1: Gender Distribution of the Respondents

The data presented in the pie chart reveals that male respondents are in greater proportion among the respondents (54 percent) as compared to the female respondents who constitute about 46 percent of the sample. It is rather expected because it was the male respondents who were more willing to be interviewed or felt free to give an interview than their female counterparts among whom there were a few drop outs. As stated in the foregoing section gender is used as an independent variable in the analysis of awareness about COVID vaccine.

Religion:

Further with regard to the religious affiliation of the respondents the data seem to indicate that the religious composition of respondents corresponds more or less with the religious compositions of the general population in the community around. As a multi-cultural multi-religious pluralistic society India presents in itself a sociologically challenging and fascinating arena for the study of implications and ramifications of religious affiliation for diverse aspects of social and physical conditions of existence. An attempt hence is made in the section to present the religious background of the respondents assuming that, the levels of awareness about COVID vaccine may vary significantly with the religious background of the respondents.

Table - 2: Distribution of Respondents by Religion

	Frequency	Percent
No response	3	1.5
Hindu	123	61.5
Muslim	37	18.5
Christian	29	14.5
Other	8	4.0
Total	200	100.0

It may be observed from the table above that about two-thirds that is (61.5) percent of the respondents are Hindus followed by Muslims who represent about one fifth, that is (18.5) percent of the total respondents. Christians and others who were Jains Sikhs Buddhists and Parsis constitute another one-fifth of the total respondents. Three respondents, representing less than 2 (1.5) percent chose not to reveal their religion. Looking at the data presented above it may be stated that Christians were over represented in the sample viewed in the light of their proportions in the population at large.

Caste:

Caste is a unique feature of Indian society and no sociological study on Indian society can afford to lose sight of or ignore the caste dimension of irrespective of any issue or aspect of Indian society

being focused upon. It is assumed that the caste is one of the dominant determinants of an individual status, opportunities attitudes and dispersion of the individuals and as such it is assumed in this study that caste background of the respondents could be significantly associated with their levels of awareness about COVID vaccine. As has been acknowledged, there are numerous castes and sub-castes to which people belong in Indian society. As such, the castes are divided into three major categories as “High” “Intermediate” and “low” caste based on occupations ritual status and food habit, which is considered in Indian sociological circles as a more realistic measure of relative status of castes. The caste background which is employed as an explanatory variable in the core chapters in presented in the table below.

Table - 3: Distribution of Respondents by Caste

Caste	Frequency	Percent
No response	8	4.0
High	80	40.0
Intermediate	101	50.5
Low	11	5.5
Total	200	100.0

Coming to the caste composition of the respondents, it is evident that those belonging to the intermediate caste are in largest proportion among the respondents. Although the respondents belonged to diverse castes and sub-castes, based on the criteria stated earlier in the chapter they were classified into three categories as “High” “Intermediate” and “Low”.

The data presented in the table indicates that those coming from intermediate castes constitute about one-half (50.5) percent of the total number of respondents which is the largest single caste category among the respondents. Another 40.0 percent of the respondents are from higher castes only about 6 (5.5) percent of the respondents belonged to the low castes. Eight respondents representing 4-0 percent did not respond or preferred not to disclose their castes based on the caste distribution stated above it appears that respondents belonging to lower castes were under represented given the fact that they represent about 18 percent of the general population. On the other hand, those belonging to higher (upper) castes were over represented in the light of their proportion in the general population. the light of their proportion in the general population.

Education:

Education is another social trait which is viewed as of significant relevance in sociological analysis. Although, of late, significant proportion of people in urban setting are not associated with or pursuing their traditional occupation owing to forces and processes of social change, it is pertinent to note that occupation of a person is a function of his or her educational attainments and in turn determines the income and standard of living which in turn could be of relevance in the analysis of awareness, about COVID vaccine. The distribution of respondents by education is as presented in the table below.

Table - 4: Distribution of Respondents by Level of Education

Level of Education	Frequency	Percent
No response	5	2.5
High	56	28.0
Moderate	117	58.5
Low	22	11.0
Total	200	100.0

It may be observed from the data presented in the table that about three fifth (58.5 percent) of the respondents have a moderate level of education who could be pursuing occupations, that are non-professional and non-manual in nature. Among the remaining, (28 percent) have higher educational attainments and could be pursuing occupations of professional nature and about one tenth (11.0 percent) have a lower educational level, who could also include illiterates and those who had little schooling. As stated earlier in the chapter, the educational level, which obviously determines occupation, income and social standing could be significantly influencing the extent of awareness about COVID vaccine.

Income:

Income is another background trail of social relevance in research as it determines standard of living and access to necessities of life. It also determines the life chances and choices, safety and security. In this study level of income of respondents which classified into three categories as “High” “Middle” and “Low” is applied as an independent variable in determining the levels of awareness about COVID Vaccine. The following chart depicts classification of respondents on the basis of their income. As in the case of occupation the family income is taken into consideration if the respondent is not yet employed.

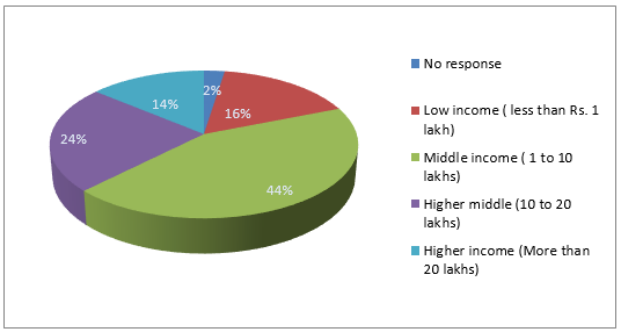

Chart – 2: Distribution of Respondents by Income

Keeping in view the urban context where the study was carried out the respondents were classified as those with low, middle, higher middle, and higher income with annual income ranging from less than one lakh to more than twenty lakhs, which may be put as those with less than ten thousand rupees per month to more than one and half lakh rupees per month. The data on the family income of the respondents reveals that nearly one- half (43.5percent) are from middle income group that is one third (37.5 percent) of the respondents are from higher middle- and higher-income groups. It may be observed that less than one-fifth (16.5 percent) of the respondents are from low-income families. As such it may be stated that the respondents are from middle and higher middle-income groups.

LEVEL OF AWARENESS

Awareness about anything or an issue plays an important role in one attitude orientation and disposition toward that thing or an issue. During COVID Pandemic there were widespread misconceptions and misbelieves among people surrounding the COVID Pandemic in general and about COVID Vaccine in particular as the COVID Vaccines were developed in record time without following well established vaccine protocols and procedures and as these vaccines were approved for emergency use. Hence, the vaccine hesitancy among the people was justifiably attributed to the lack of awareness about vaccine which in turn had contra implications for vaccine acceptance. In order to promote awareness about COVID Pandemic and the vaccine being made available, several awareness campaigns were initiated and organized by several public and private agencies. Despite these initiatives and efforts several misconceptions and misunderstandings were widely prevalent among people resulting in vaccine hesitancy and lower coverage under vaccination. Hence, vaccine awareness is considered as a key to success of vaccination programmes. As such to study the level of awareness about vaccine among the people is the prime focus of this study.

Several questions were included in the interview schedule which could ascertain and assess the level of awareness among the respondents and based on these questions a scale of awareness was developed. On the basis of their responses to these questions the respondents were graded as High Moderate and Low on this scale of awareness.

Further respondents themselves were asked as to how do they assess their own level of awareness about the COVID Vaccine and it was observed that quite a few respondents assessed their own level of awareness about vaccine as quite adequate.

Table - 5: Distribution of Respondents by Self-Assessment of Awareness about Vaccine

	Frequency	Percent
No response	1	.5
Adequate	98	49.0
Somewhat adequate	84	42.0
Inadequate	17	8.5
Total	200	100.0

It may be observed from the table above that about one half (49.0 percent) thought that their level of awareness is adequate and another 40 (42.0 percent) stated that their level of awareness is somewhat adequate meaning they are moderately aware about the efficacy, safety and effectiveness of the vaccine. It is important to note that less than 10 (8.5) percent of the respondents regarded their awareness about vaccine is inadequate. Hence, on the basis of their own self-assessment the respondents were quite happy or satisfied with their awareness and understanding of intricacies surrounding the COVID Vaccine. However, this assumed level of awareness would be compared with actual level of awareness based on application of awareness scale in the following analysis

Coming to the awareness and knowledge about COVID Vaccine the respondents were posed with a series of questions to assess their level of awareness. These questions were about what side are the most frequently experienced side effects of COVID Vaccine? What kinds of tests are prescribed for detecting COVID infection? What are the major symptoms of corona infections? How many doses of vaccines are recommended? What is the time gap prescribed between the doses? When is the booster dose given and for what purpose? How long it takes to become immune to infection after vaccination? What are the different brands and types of vaccines available in India? What is the the relative efficacy of these vaccines? Who are advised to not to get vaccinated? Whether one can take two different brands or types of vaccines to complete the dosage? Which group of people are prioritized to be given vaccination? Children below what age are not given vaccination? Whether a person who has recovered

from COVID infection should also take vaccination? Can a vaccinated person infect the non-vaccinated person? Can a person consume alcohol after vaccination? Is it safe to donate blood after getting vaccinated? How long the immunity lasts after getting vaccinated? Can a pregnant woman and breastfeeding woman take vaccination? What is the difference between quarantine and isolation? Should one stop taking precaution like masking and social distancing once vaccinated?

The responses of the respondents were scored using suitable scoring techniques correct response was given a score of "2" the wrong response was given the score of "0" (zero) and "Not Sure" or partial correct responses were given a score of "1". The maximum and minimum score of "0 zero to forty and employing suitable and rational scoring techniques the respondents were classified as belonging to three categories as those with "High" "Moderate" and "Low" Level of awareness. The data pertaining to the classification of respondents on the scale of awareness as explained above is given in the table below.

Table - 6: Distribution of Respondents Level of Awareness.

Level of Awareness	Frequency	Percentage
Low	44	22.00
Moderate	82	41.00
High	74	37.00
Total	200	100.00

The data pertaining to the level of awareness among the respondents appears to be moderate to high as depicted in the table above. Nearly one-half (41.00 percent) of the respondents exhibit moderate level of awareness as ascertained from their responses to the statements which is the largest single categories of respondents. This is followed by the percentage of respondents who have exhibited high level of awareness about the complexities and intricacies pertaining to the COVID Vaccine. It is rather heartening to note that less than one-fourth (22.0 percent) of the respondents have low level of awareness though it may not be a welcome situation given the wide publicity and awareness campaigns initiated and organized by several private and public agencies and numerous NGO's. Further what is a matter of solve and comfort that more than three fourths (78.00 percent) of the respondents exhibit moderate to high levels of awareness, which is ascertained on a rather conservative scale, made up of 20 intricate and complex questions and statements. This level of awareness may also be viewed as more than satisfactory in a society which is viewed as a developing economy and the extent of population exposed to and having access to ICT facilities and devices.

As has been outlined in the introductory chapter dealing with statement of problem and objectives the study seeks more significantly to probe into the determinants or factors responsible for levels of awareness acceptance and extent access observed among the respondents. As has been explained in the introductory chapter, the primary independent or causative variables the influence or implication of which is examined on the dependent variables like level of awareness degree of acceptance and the extent of access are age, gender, education, religion, caste, occupation and income.

Here in this chapter an attempt is made to analyses the role or implications of these independent variables for the respondents. Age being one of the most important personal traits in determining awareness about diverse issues and events an attempt is made here to assess the level of awareness in the light of the age of respondents.

Table -7: Age and Level of Awareness about COVID Vaccine

Age	Awareness			Total	Chi square
	Low	Moderate	High		
Less than 20 years	6 (21.43) (13.04)	14 (50 (17.28)	8 (28.57) (9.88)	28 (14)	6.240 (NS) C= 0.012
20 to 30 years	28 (22.58) (60.87)	48 (38.71) (59.26)	47 (37.90) (58.02)	124 (62)	
31 to 40 years	8 (29.63) (17.39)	9 (33.33) (11.11)	10 (37.03) (12.34)	27 (13.5)	
41 to 50 years	1 (8.33) (2.17)	7 (58.33) (8.64)	4 (33.33) (4.94)	12 (6)	
More than 50 years	3 (33.33) (6.52)	3 (33.33) (3.70)	3 (33.33) (3.70)	9 (4.5)	
Total	46 (23)	81 (40.5)	72 (36)	200 (100)	

The data presented based on the analysis of level of awareness in the high of age the respondents seem to suggest that no significant variations or patterns could be discerned from it as the association between age and level of awareness was found to be statistically not significant. This could be so because, the level of awareness being generally high among the respondents irrespective of age this may also be attributed to widespread access to social media and ICT facilities of late, to all sections of society and people irrespective of age being active on social media and other forms of mass media. However, the analysis seems to suggest that though not statistically significant the proportion of those with high levels of awareness is largest among those in the age group of 20 to 30 years (37.90 percent) and those in the age group of 31 to 40 years the level of awareness was found higher (37.03 percent).

Similarly, the proportion of those with low level of awareness was highest (33.33 percent) among

those in the age group of 50 years and above. It may further be observed that highest proportion of those with moderate level of awareness about COVID Vaccine (58.33 percent) was found among the respondents belonging to the age group of 41 to 50 years. The analysis on the whole seems to be in commensuration with fact that level of awareness may not be a function of age per-se but the profitability and propensity of different age groups getting access and exposure to social and mass media that carry information pertaining to various issues and concerns surrounding the COVID Vaccine.

In view of age also being a criterion being adhered in vaccination programmes with elderly having to be covered under vaccination on priority it is pertinent to note that people across the age have moderate to high levels of awareness regarding various aspects and issues concerning COVID Vaccine.

As has been contemplated in the introductory section gender is another social trait that conditions the social and physical conditions the social and physical conditions of existence people across the societies and cultures including access to information and means of ICT.

Table -8: Gender and Level of Awareness about COVID Vaccine

Gender	Awareness			Total	Chi square
	Low	Moderate	High		
Male	21 (19.63) (47.73)	47 (43.93) (57.31	39 (36.44) (52.70)	107 (53.5)	7.804 (NS) C= 0.0134
Female	23 (24.73) (52.27)	35 (37.63) (42.68)	35 (37.63) (47.30)	93 (46.5)	
Total	44 (22)	82 (41)	74 (37)	200	

The data presented in the table reveals that the proportion of those with high level of awareness is slightly higher at 37.63 percent among female respondent as compared to their male counterparts (36.44 percent) and interestingly even the proportion of those with low level of awareness is also much higher at one fourths among female respondents (24.73percent) as compared to the male respondents among whom it is 19.63 percent with regard to the proportion of those with moderate level of awareness is higher at 44 (43.93 percent) as compared to 37.63 percent among the female respondents.

As has been stated earlier the awareness level among the respondents in general mainly ranges between moderate to high and the analysis here seems to reveal that it is so irrespective of the gender of respondents and as such no statistically significant association or variations could be found in the level of awareness in terms of gender. It may mean that sources of information pertaining to COVID Vaccine are equally accessible across genders.

Coming to religion as a determinant of the level of awareness about COVID Vaccine among the respondents, the analysis of data reveals that those respondents belonging to Hinduism and Christianity had a higher proportion of those with high level of awareness about COVID Vaccine than their Muslim counterparts.

Table -9: Religion and Level of Awareness about COVID Vaccine

Religion	Awareness			Total	Chi square
	Low	Moderate	High		
Hindu	28 (20.89) (63.64)	54 (40.29) (65.85)	52 (38.80) (70.27)	134 (67)	5.607 (NS) C= 0.0115
Muslim	8 (21.62) (18.18)	18 (48.65) (21.95)	11 (29.72) (14.87)	37 (18.5)	
Christian	8 (27.59) (18.18)	10 (34.48) (12.19)	11 (37.93) (14.86)	29 (14.5)	
Total	44 (22)	82 (41)	74 (37)	200	

It may be observed from the data that the proportion of those with high level of awareness is 38.80 percent among Hinds and 37.93 among Christians and 29.72 percent among Muslims. However, the proportion of those with moderate level of awareness was among Muslims at 48.65 percent whereas the proportion of those with moderate level of awareness was relatively lower among Hindus at 40.29 percent and lowest among Christians at 34.48 percent. It is also significant to note that the proportion of respondents with low level of awareness is highest among Christians at 27.59 percent whereas the corresponding proportion is lowest among Hindus at 20.89 percent with 21.62 percent of Muslim respondents belong to this category of low level of awareness. The variation of the level of awareness about COVID Vaccine was found to be statistically not significant though it could indicate to a vague pattern without any predictive value.

With regards to caste background of the respondents as an explanatory variable in determining the level of awareness about COVID Vaccination, the analysis of data indicates to rather unanticipated or unintended patterns.

Table -10: Caste and Level of Awareness about COVID Vaccine

Caste	Awareness			Total	Chi square
	Low	Moderate	High		
High	17 (19.31) (40.47)	28 (31.82) (32.94)	43 (48.86) (53.09)	88 (44)	5.086 (NS) C= 0.0109
Intermediate	23 (22.77) (54.76)	45 (44.55) (52.94)	33 (32.67) (40.74)	101 (50.5)	
Low	4 (36.36) (9.52)	5 (45.45) (5.88)	2 (18.18) (2.47)	11 (5.5)	
Total	42 (21)	78 (39)	78 (39)	200	

It may be observed from the table data presented in the table that about 40 (40-47) percent of those with low level of awareness are from high caste background whereas those with low caste background constitute only about 10 (9.52) percent. However, viewed from the angle of caste as an explanatory variable it is evident that as many as more than one-third (36.36 percent) of those belonging to lower castes are formed with low levels

of awareness whereas proportion of those with low level of awareness is much lower at 22.77 percent among respondents belonging to intermediate castes and still lower at 19.31 percent among respondents coming from higher castes.

It is further significant to note that among those with higher levels of awareness a majority that is 53.09 percent are from high caste background and other 40.74 percent of respondents are from intermediate castes with those coming from lower castes representing just under 3 (2.47) percent. Although the very low representation of those belonging to lower castes could be the reason for skewness in the distribution and though no statistically significant relationship was found between caste background and the level of awareness about COVID Vaccine the analysis of the data seems to suggest that level of awareness about the COVID Vaccine is on the lower side among the respondents coming from lower castes as only about 18 (18.18) percent of them exhibit high level of awareness as compared to 49 (48.86) percent among those coming from higher castes and 33 (32.86) percent among the respondents coming from intermediate castes. Thus, might indicates that those belonging to lower castes suffer deprivation or barriers when it comes to access to information and exposure to ICT facilities.

It is assumed that educational level and awareness level are mutually complementary primarily owning to literacy exposure and proficiency in accessing information through different sources and by applying different means and mechanism. Hence, educational level has been employed as an independent variable to ascertain whether educational level is significantly associated with and hence influences the level of awareness about the COVID Vaccine. However, surprisingly enough the findings based on the analysis reveal that there is no statistically significant relationship between the two.

Table -11: Education and Level of Awareness about COVID Vaccine

Educational level	Awareness			Total	Chi square
	Low	Moderate	High		
High	13 (19.67) (29.54)	18 (37.70) (22.78)	30 (42.62) (38.96)	61 (30.5)	
Moderate	26 (22.22) (59.09)	49 (41.88) (62.02)	42 (35.89) (54.54)	117 (58.5)	7.218 (NS)
Low	5 (22.72) (11.36)	12 (54.54) (15.19)	5 (22.72) (6.49)	22 (11.00)	C= 0.0129
Total	44 (22)	79 (39.5)	77 (38.5)	200 (100)	

The data presented in the table seem to suggest that although statistically not significant, the level of awareness about COVID Vaccine increases with increasing level of education among those with high educational level the proportion of those with low level of awareness is less than 20 (19.67) person which increases to over one third (37.70 percent) with those having moderate level of awareness, finally among the respondents with high educational level the proportion of those with high level of awareness increases to more than 40 (42.62 percent) which is higher than such proportion among those with moderate level of education at 41.02 percent and 22.72 percent among those with low level of education. It is also pertinent to note here that among those with high level of awareness, the proportion of those with low level of awareness is as low as 6.49 percent only.

As expected among those respondents with moderate level of education the level of awareness is moderate (41.88 percent) to high (35.89 percent). Conversely, among those with moderate level of awareness those with moderate level constituted close to two thirds representing 62.02 percent. On the whole though there appears to be a positive relationship between level of education and level of awareness the association was found to be statistically not significant.

Finally, coming to income as an explanatory variable the findings based on the analysis of the data seem to indicate that the level of awareness about COVID Vaccine is relatively higher among respondents belonging to the middle and higher middle-income groups that is those who constitute the so-called middle class of society.

Table -12: Income and Level of Awareness about COVID Vaccine

Income	Awareness			Total	Chi square
	Low	Moderate	High		
Low income (less than Rs. 1 lakh)	7 (21.21) (15.91)	20 (60.60) (24.69)	6(18.18) (8)	33 (16.5)	
Middle income (1 to 10 lakhs)	18 (19.56) (40.91)	35 (38.04) (43.21)	39 (42.39) (52)	92 (46)	
Higher middle (10 to 20 lakhs)	9 (19.14) (20.45)	17 (36.17) (20.99)	21 (44.68) (28)	47 (23.5)	11.856 (NS) C= 0.016
Higher income (More than 20 lakhs)	10 (35.71) (22.73)	9 (32.14) (11.11)	9 (32.14) (12)	28 (14)	
Total	44 (22)	81 (40.5)	75 (37.5)	200 (100)	

The data presented in the table, rather surprisingly indicates to a relatively lower levels of awareness about COVID Vaccine among the respondents belonging to higher income groups. It is observed that among those coming from higher income groups, the proportion of those with lower levels of awareness is highest at over one third that is as high as (35.71) percent, whereas the corresponding proportion even among those coming from lower income groups is as low as 21 percent as compared to middle income (19.56 percent) and higher middle income groups (19.14 percent), that is almost at par with the above groups indicating that lower income is not all that sever a handicap when it comes to being aware about COVID Vaccine.

It may further be observed that as stated earlier the highest proportion of those with high level of awareness is found among the respondents coming

from higher middle-income group with as high a percentage as 44.68 followed by respondent belonging to middle income group (42.39 percent) further followed by high income group (32.14 percent). Finally, it is also significant to note that although having lowest proportion (18.18 percent) of those with higher level of awareness respondents coming from lower income group have significantly higher proportion (60.60 percent) of those with moderate level of awareness about COVID Vaccine as compared to those coming from middle income group (38.04 percent), higher middle-income group (36.17 percent) and those coming from higher income group (32.14 percent). This may be indicating to the fact that income may not have a notably significant role to play when it comes to accessing and acquainting oneself with base and moderate amount of information to render oneself if not exceptionally or absolutely informed at least adequately informed to be at least moderately aware of matters and issues concerning their wellbeing and sustenance.

CONCLUSIONS

As stated in the foregoing discussion of the findings, it is heartening and gratifying as well to note that more than three-fourths of the respondents exhibit moderate to high levels of awareness about COVID-19 vaccine, and only about one-fifth of them being low on the extent of such awareness, though it may not be a very comforting situation given the wide publicity and awareness campaigns initiated and organized by several private and public agencies and numerous NGO's. Though not statistically significant, the findings seem to indicate that the the level of awareness is relatively low among the younger population, despite greater access and exposure to social media and other sources of information

The findings of the study also appear to indicate that, though marginally, the level of awareness is relatively higher among women compared to their male counterparts, negating the unfounded assumption that men are better informed. Further, the findings seem to indicate that among other social background variables, educational level has an important role to play when it comes to promoting the level of awareness about COVID vaccine among the people. Though not statistically significant, the findings seem to indicate to a positive association between the level of educational attainment and the level of awareness about COVID vaccine. However, other social variables like caste, religion and income, with an exception of educational level, appeared to be of little or negligible implications for the level of awareness about the COVID vaccine as the analysis revealed no statistically significant association between these background variables and the level of awareness.

SUGGESTIONS

1. More concerted and focused efforts and interventions need to be initiated by the public and private agencies and civil society organization to disseminate accurate information and knowledge about the vaccine among the people to ward off unwarranted and unfounded misconceptions misgivings surrounding the vaccine
2. Social media platforms and mass media ought to be apprised about their role in providing authentic and genuine information and knowledge to the public to prevent negative rumors and unfounded facts to be in circulation.
3. Younger generation needs to be specifically addressed and involved in awareness campaigns as it is this section of society is relatively low on awareness matrix despite society having greater stake in this section in the future.
4. Biased on the findings of the study, it may be suggested that, people belonging to the disadvantaged sections of society including the minorities ought to be give greater priority and precedence in awareness initiatives and interventions to fill the negligible, yet perceptible lag in the awareness levels.
5. The findings of the study seem to indicate, rather convincingly and logically as well, that education per-se plays an important role in promoting and fostering awareness about the COVID vaccine. In view of a positive association observed between educational level and level of awareness about vaccine. Hence, education of people in general needs to be assigned prime priority, not only to counter epidemics and pandemics, but to counter evil of every other kind.

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