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A Prospective Observational Study on Covid-19 Vaccination Across the Telangana State, India

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Conflicts of Interest: Nil

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ABSTRACT

Background: Vaccine hesitancy was defined by the WHO Strategic Advisory Group of Experts (SAGE) as delay in acceptance or refusal of vaccination despite availability of vaccination service. Vaccine acceptability is determined by three factors: confidence, convenience, and complacency. Many people have doubts about vaccine safety, and governments to increase the widespread acceptance of the vaccines. Moreover, vaccination convenience refers to the relative ease of access to the vaccine that includes physical availability, affordability, and accessibility.

Methodology: A total of 1024 study subjects were included in this study via participation in self understandable questionnaire form and was across the states of Telangana. The questionnaire was structured into 7 sections includes demographic characters of participants, health status knowledge determinants of COVID 19, perception of COVID 19 vaccination, perspective and acceptance of COVID 19 vaccine, side effects assessment, and personal hygiene evaluation during this pandemic.

Results: 54% of the study participants Exhibited positive results towards COVID19 vaccine in terms of side effects, most of the vaccinatedindividuals reported with the following adverse effects such as Tiredness or weakness in the body (41%), Fever (39%), Muscle aching (35%), local pain at the injection site (33%). Education was found to be having quite a significant relationship with respect to the vaccination status.

Conclusion: Most of the Study participants have relatively good perception and perspective on the acceptance of COVID19 vaccine. At the same time individuals should be educated regarding vaccine safety, and potential Side effect.s

Keywords: COVID19 vaccine, vaccine hesitancy, Vaccine side effects of COVID19, acceptance of COVID19 vaccine.,

Introduction

On December 31, 2019, mysterious cases of pneumonia were detected in the city of Wuhan in China's Hubei Province. On January 7, 2020, the causative agent was identified as a new corona virus (2019-nCoV), and the disease was later named as COVID-19 by the WHO.

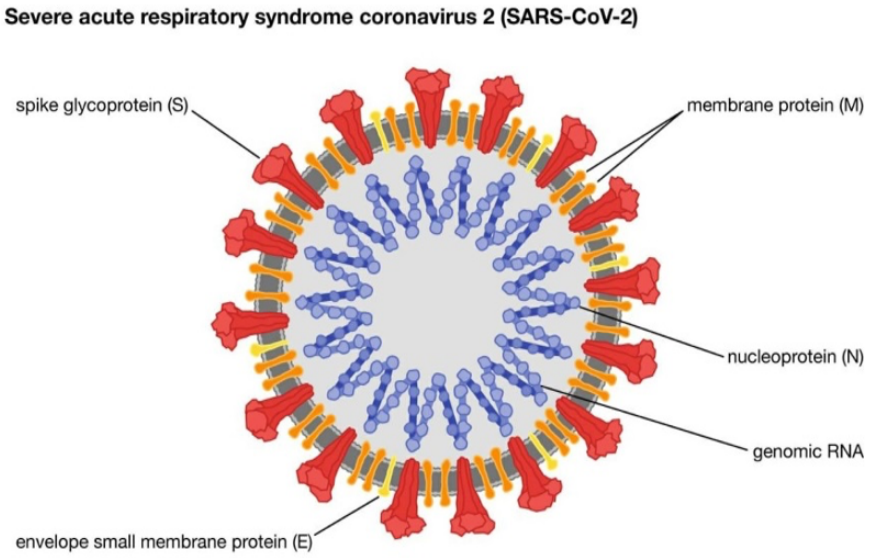
Coronaviridae is a family of viruses with a positive-sense RNA that possess an outer viral coat. When looked at with the help of an electron microscope, there appears to be a unique corona around it.. These viruses can infect animals as well. Up until the year 2003, corona virus (CoV) had attracted limited interest from researchers. However, after the SARS (severe acute respiratory syndrome) outbreak caused by the SARS-CoV, the corona virus was looked at with renewed interest.[1]

In December 2019, almost seven years after the MERS 2012 outbreak, a novel Corona virus (2019-nCoV) surfaced in Wuhan in the Hubei region of China. The outbreak rapidly grew and spread to neighboring countries. However, rapid

communication of information and the increasing scale of events led to quick quarantine and screening of travelers, thus containing the spread of the infection. The major part of the infection was restricted to China, and a second cluster was found on a cruise ship called the Diamond Princess docked in Japan.

Epidemiology of COVID-19:

In December 2019, Wuhan City, Province of China, became the center of an outbreak of novel contagious corona virus disease (COVID-19) of unknown etiology. Corona virus disease 2019 (COVID-19) is spreading rapidly across China and is being exported to a growing number of countries, some of which have seen onward transmission. According to the World Health Organization (WHO), COVID-19 continues to emerge and represents a serious problem to public health. On 2 May of March 2020, more than three million confirmed cases of COVID-19 reported by the World Health Organization. Of these, more than 240 000 have been fatal. About 83,959 cases were confirmed in China, and 4637 deaths were confirmed (Figure 1). The growing global tally includes spikes in Korea, Iran, Italy, Spain, France, and Germany. The virus is also continuing to spread to African countries including Algeria, South Africa, Senegal, Burkina Faso, Cameroon, Nigeria, and Côte d'Ivoire. In addition to the confirmed case, Moroccan's health ministry says that Morocco has more than 4500 confirmed cases of the Corona Virus.[2]



Pathophysiology:

On gaining entry via any of the mucus membranes, the single-stranded RNA-based virus enters the host cell using type 2 Transmembrane serine protease (TMPRSS2) and ACE2 receptor protein, leading to fusion and endocytosis with the host cell. The uncoated RNA is then translated, and viral proteins are synthesized. With the help of RNA-dependant RNA polymerase, new RNA is produced for the new virions. The cell then undergoes lysis, releasing a load of new virions into the patients' body. The resultant infection causes a massive release of pro-inflammatory cytokines that causesa cytokine storm.[3]

Clinical Presentation:

The virus has an incubation time of 2–14 days, which is the reason why most patients suspected to have the illness or contact with an individual having the illness remain in quarantine for the said amount of time. Infection with SARS-CoV-2 causes severe pneumonia, intermittent fever, and cough Symptoms of rhinorrhoea, pharyngitis, and sneezing have been less commonly seen. Patients often develop acute respiratory distress syndrome within 2 days of

hospital admission, requiring ventilator support. It has been observed that during this phase, the mortality tends to be high. Chest CT will show indicators of pneumonia and ground-glass opacity, a feature that has helped to improve the preliminary diagnosis[4]

Vaccine hesitancy:

Vaccine hesitancy was defined by the WHO Strategic Advisory Group of Experts (SAGE) as ‑delay in acceptance or refusal of vaccination despite availability of vaccination services‖. Vaccine acceptability is determined by three factors: confidence, convenience, and complacency Confidence is defined as the trust in the safety and effectiveness of the vaccine, trust in the delivery system as the healthcare system, and the trust in the policymakers

Many people have doubts about vaccine safety, and this is going to be a major challenge to be resolved by health care providers, policymakers, community leaders, and governments to increase the widespread acceptance of the vaccines. Moreover, vaccination convenience refers to the relative ease of access to the vaccine that includes physical availability, affordability, and accessibility. Vaccine complacency isassociated with a low realized risk of the vaccine-preventable disease and hence more negative attitudes towards the vaccines.

The results of current study could assist the policymakers to undertake proactive campaigns and well-designed strategies by highlighting the importance of vaccinationto the community and encouraging vaccine uptake and acceptance, especially by vulnerable patients to stop further deaths and to confine the spread of the pandemic.[6]

Vaccine hesitancy puts India's gains against Corona Virus at risk:

Health workers face stiff resistance from people who believe that vaccines cause impotence, serious side effects and could even kill. Some simply say they do not need the shots because they're immune to the Corona Virus. Rumors about jabs disrupting the menstruation cycle and reducing fertility have also contributed to fear and skewed the data in favor of men. In almost every Indian state, more men are getting vaccinated than women — and that gap is widening further every day.[7,8]

The COVID-19 vaccination program kick started on 16th January, 2021 in India. The first group of beneficiaries included healthcare and frontline workers. The second group, comprising people over 60 years of age (as of January1st, 2022) and those in the age-bracket of (45–59) years with comorbid conditions started receiving vaccinations from March 1st, 2021 while vaccination for those above 45 years of age started from April 1st, 2021 (Ministry of Health and Family Welfare, Govt. of India, 2021). Covishield ® (AstraZeneca's vaccine manufactured by Serum Institute of India) and Covaxin ® (manufactured by Bharat Biotech Limited) are the two vaccines that have been granted emergency use authorization by the Central Drugs Standard Control Organization (CDSCO) in India. In the initial launching phase of the vaccination program, the beneficiaries were advised to receive two doses at a minimum time gap of 28 days[9].

The vaccine is free and participation in the vaccination drive is voluntary. One can register on the Co- WIN Portal and schedule his/her vaccination appointment or local government health workers at Corona Vaccination Centers (CVCs) can help the beneficiaries with on- the-spot registration, appointment, verification, and vaccination on the same day in case the latter fail to get themselves registered online.[10]

Methodology

Study area:

The study was conducted through online platform by creating a Questionnaire‘s form in Telangana state, India.

Study design:

A Prospective observational study was conducted through online at Telangana state, India. The study was aimed to collect the data from subjects who have vaccinated and non-vaccinated. The data received through online is recorded and evaluation was conducted from February to May 2021.

Study population:

At about 1024 subjects around Telangana state, India, were participated in this online Survey study.

Selection Criteria:

Inclusion criteria:

Subjects from age groups above 18 yrs. Who have vaccinated and non-vaccinated were included in the study.

Exclusion criteria:

Subjects aged below 18 years and pregnant woman were excluded from the study and also people were not willing to participate in this study.

Survey plan and participants:

The study was conducted from February to May 2021. During this period the first phase of COVID 19 Vaccination was initiated among the population. All the citizens were following the safety measures provided by WHO like social distancing, wearing mask, washing hands, and using hand sanitizers. Due to lockdown, it was not feasible as well as advisable to conduct offline Survey we conducted an online Survey through Google forms from various social media platforms like what's app, Instagram, Face book, twitter. The respondents were from Telangana state, India Who has voluntarily participated in this online Survey study.

Questionnaire's form:

The questionnaire used in this study was developed based on the literature review. The subjects participated in the study were ensured confidentiality for their details. The questionnaire was structured into 7 sections, multiple choice questions were developed. The first section of the form includes all the demographic characters of participants, the second section includes health status, third section includes knowledge determinants of COVID 19, fourth section includes perception of COVID 19 vaccination, fifth section includes perspective and acceptance of COVID 19 vaccine, sixth section includes side effects assessment, seventh section includes personal hygiene evaluation during this pandemic.

Statistical Analysis:

The descriptive statistics were performed using Microsoft Excel to determine the differences between the groups for selected demographic variables with respect to knowledge and acceptance towards COVID-19 vaccination.

Results

A total of 1024 subjects reached out and participated in this study upon receiving the pre designed structurally organized questionnaire. Out of 1024 participants of this Prospective Cross-sectional study, 56.1% of them were female and 43.9% were Male subjects belonging to a considerably Non healthcare educational background (57.3%) while only 42.7% of them were from healthcare background.

Demographics

A) AGE

Upon Demographics assessment, subjects were found to be in considerable high frequency of 82% in the age group of 23-35 while a quite low number of 1.6% were in the 18-22 age groups. Relatively low numbers were seen in the age groups of 36-50 (9%) and above 50 (7.5%).

Table 1: showing the distribution of subjects among different Age groups- Mean+/- SD of subjects (N=1024)

Age groups (years)	Frequency of subjects (percentage)	Percentages
18 -22	20	1.6
23-35	836	81.6
36-50	92	8.9
Above 50	76	7.5

B) GENDER

Upon observation, majority of the participants were found to be female (480) under the age group of 23-35 category. While the same age category revealed much prominent male participants (356).

Quite less prominent percentages were recorded in the age groups of 18-22 year males (4), females (16) followed by 23-35 years group consisting of males (356), females (480), in contrast to last category of above 50 years with males (48) and females (28).

Table 2: shows the Distribution of participants Gender among different age groups (N=1024)

Age groups	Male	Female
18-22	4	16
23-35	356	480
36-50	44	48
Above 50	48	28

C) EDUCATION LEVEL

The Frequency of participants were calculated for educational history, quite high numbers were exhibited in the undergraduate (64%) followed by the second of postgraduate (16.9%), School education (7.5%), Diploma (7%), Graduates (1.2%),No formal education (4.2%) respectively.

Table 3: shows the distribution of Education levels of subject's frequencies among Different age groups

Age group	School education	Diploma	Undergraduate	degree	Postgraduate	Un educated
18-22	0	1	12	4	0	3
23-35	0	40	604	20	166	6
36-50	28	24	12	6	16	6
>50	32	5	12	5	11	11

D) EMPLOYMENT STATUS

Most of the participants were observed to be in Student's category (65%) while the least number of subjects were found to be in Retired group (2%), followed by the second most of Employed category (20%), in contrast with Unemployed (13%).

Table 4: shows the distribution of Employment status of study participants

Employment status	Frequency of Subjects (Percentage)	Percentages
Employed	208	20.3
Unemployed	128	12.5
Student	668	65.2
Retired	20	1.95

KNOWLEDGE DETERMINANTS OF COVID19

A) SYMPTOMS OF COVID19 KNOWLEDGE

Majority of them showed to have quite high knowledge on the symptoms of COVID19 while most of the individuals opted for loss of smell and taste sensations (79%), Fever (79%), chills (37%), Diarrhea (14%) and even the relative numbers for the non-symptomatic (28%) though the least recorded were the Otitis media (7.4%).

Table 5: shows the frequency of Knowledge determinant Symptoms ofCOVID19 responses of Study participants

Symptoms of covid19	Frequency of subjects (n)	Percentages
Fever	812	79.2
Chills	380	37.1
Diarrhea	152	14.8
Otitis media	76	7.42
Loss of Smell and taste sensations	816	79.6
Non-symptomatic	288	28.1

B) COVID19 TRANSMISSION KNOWLEDGE

The knowledge of transmission of COVID19 infection was quite revealing among the individuals of this study. Quite high individuals (92%) opted for the transmission of COVID19 via Inhalational spread of the COVID19 followed by the Unclean food, drinking unclean water, touching wild animals (3.9%), miscellaneous reasons (2%). Very few of them (12) were not sure of the reason for transmission of COVID19.

Table 6: shows the frequency of Knowledge determinant transmission of COVID19 responses of Study participants

Transmission of covid19	Frequency of subjects (n)	Percentages
Drinking unclean water	92	8.9
Eating unclean food	104	8.0
Inhalation of respiratory droplets of the infected person	944	78.1
Eating or touching wild animals	40	3.9
Miscellaneous	20	2.0
Not sure of the reason	12	1.17

C) COVID19 PREVENTIVE MEASURES KNOWLEDGE

It was observed when questioning about preventive measures, major responses were recorded for Wearing face masks (92%) followed by not touching the face, eyes, nose (80%), while the least number of responses were found

Table 7: shows the frequency of Knowledge determinant Preventive measures of COVID19 responses of Study participants

Preventive measures of covid19 knowledge determinants	Frequency of subjects (n)	Percentages
Wearing face masks	952	92.9
Washing hands with soap, handwash	908	88.6
Using detergents	240	23.4
Social distancing	932	91.0
Avoid touching face, mouth, eyes, nose	828	80.8
Vitamin c consumption	532	51.9
Zinc consumption	324	31.6
Avoid eating meat (nonveg)	80	7.8
Being a vegetarian and consuming herb	92	8.9

D) PERSPECTIVE ON COVID19 CURE

The perspective on the belief of cure for COVID19 were evaluated and found that the most of individuals (64%) responded quite high for believing in the Cure for the COVID19 while a few of them (9.8%) have recorded with a No.

Table 8: shows the frequency of perspective on the belief of Cure for COVID19 of Study participants

Belief in covid19 cure	Frequency of subjects (percentage)	Percentages
Yes	656	64
No	100	9.76
Maybe	268	26.1

PERCEPTION OF COVID19 AND VACCINATION

A) PREVIOUS VACCINATION HISTORY

Previous history vaccination status of the study participants was assessed and revealed that considerably high number of individuals (66%) have been vaccinated for most common infections such Hepatitis B, Tetanus etc. While a considerably number(27%) of them have not got any history of vaccinations.

Table 9: shows the frequency of responses of previous vaccination history of Study participants

Previous vaccination history such tt, hep b etc	Frequency of Subjects	Percentages
Yes	676	66
No	300	29.2
Maybe	48	4.6

B) COVID-19 INFECTION PERCEPTION

Subjects were evaluated for the knowledge of previous COVID19 infection history of different groups. Upon observation, almost equal numbers of friends (41%) and Family members (42%) of the participants have got infected with COVID19.

Table 10: shows the frequency of responses of COVID19 Infection perception of Study participants

Covid19 infection perception	Frequency of subjects	Percentages
Myself	156	15.2
A family member	432	42.1
A friend	424	41.4
Colleague	128	12.5
A neighbor	404	39.45

C) PAST COVID19 INFECTION STATUS OF THE SUBJECTS

Infection history of COVID19 of the study participants exhibited quite high responses for No history of COVID19 in comparison to only over a few of them (148) have already got infected with COVID19 earlier

Table 11: shows the frequency of responses of Study participants about Perception on Infection status of COVID19 Infection

Infection status of subject with covid19	Frequency no of subjects	Percentages
Yes	178	17.3
No	846	82.6

D) ONSET OF COVID19 INFECTION

Note worthily for Onset of COVID19 infections, well over a remarkable number of individuals (216) were infected within 1-3 months period in contrast only a few (24) got before one year.

Table 12: shows the frequency of responses of Study participants about Perception on Onset of COVID19 Infection

Onset of infection subject with covid19	Frequency of subjects	Percentages
Before 1-3 months	98	55
Before 4-6 months	36	20.2
Before 6 months - 1 yr.	27	15.1
Before one year	17	9.5

VACCINATION STATUS FOR COVID19

Vaccination status of the subjects is quite predictably high in the unvaccinated (59%) groups in comparison with fully vaccinated (15%) and partially vaccinated (26%).

Table 13: shows the frequency of responses of Study participants about Perception on Vaccination status for COVID19 (N=1024)

Vaccination status	Frequency of subjects	Percentages
Fully vaccinated	148	14.45
Partially vaccinated	268	26.17
Unvaccinated	608	59.3

PERSPECTIVE ON ACCEPTANCE OF COVID19 VACCINE

A) PERSPECTIVE ON SAFENESS OF COVID19 VACCINES

The study participants perspective on the safety associated with taking the COVID19 shots were found to be recorded with majority of them (66%) agreeing on the safeness of COVID19 vaccines while very few individuals (8%) responded not safe.

Table 14: shows the frequency of responses of Study participants about Perspective of Safety regarding the COVID19 vaccines

Subjects perspective on thinking that Covid19 vaccines are safe	Frequency of Subjects	Percentages
Yes	680	66.40
No	84	8.20
Maybe	160	15.6
Not quite sure of it	100	9.76

B) PERSPECTIVE ON VACCINE ABILITY TO PREVENT THESPREAD OF COVID19

Study individual's perspective on the ability of vaccines to prevent the spread of COVID19 have exhibited quite positively in high numbers (66%) for _Yes while only a minimal (8%) of them recorded _No.

Table 15: shows the frequency of responses of Study participants about Perspective of Vaccines preventive ability to reduce the spread of COVID19

Subjects perspective on thinking that covid19 vaccine can reduce the spread	Frequency of subjects	Percentages
Yes	680	66.40
No	84	8.20
Maybe	196	19.14
Not quite sure of it	64	6.25

C) PERSPECTIVE ON WILLINGNESS TO ACCEPT A COVID19VACCINE

Study participants have showed the remarkable numbers for the acceptance of COVID19 vaccines recorded in quite high numbers (54%) for _Definitely will accept while there were slightest responses for the _Definitely will.

Table 16: shows the frequency of responses of Study participants about Perspective on willingness to accept a COVID19 Vaccine shot

Subjects willingness to accept a shot of vaccine for covid19	Frequency of subjects	Percentages
Definitely will	390	54
Probably will	172	19.53
Probably will not	28	4.4
Definitely will not	18	42.3
Already got vaccinated	416	40.6

FACTORS ASSOCIATED WITH COVID19 VACCINE HESITANCY

Vaccine hesitancy for COVID19 has been associated with many factors of the study participants and the results have manifested in relatively huge numbers for the Side effects (21%) and the accessibility or Shortage of Vaccines (23%). The lowest and least concerned was for the religious or personal beliefs (1.1%).

Table 22: shows the frequency of responses of Study participants about Factors associated with hesitancy of COVID19 Vaccine shot

Factors associated with vaccine hesitancy of covid19	Frequency of subjects	Percentages
Side effects	224	21.87
Lack of proper information	148	14.45
Safety in terms of health risks	92	8.98
Doubts regarding the effectiveness	168	16.40
Accessibility of the vaccines/ shortage of vaccines	236	23.04
Peer pressure from your neighbours and friends influencing you not to	24	2.34
Injection's phobia or pain related to the injections	72	7.03
Religious or personal beliefs	12	1.17
Does not apply to me/ already got vaccinated	416	40.6
Misc	16	1.56

REASONS ASSOCIATED FOR HIGH-RISK CATEGORIZATION FOR COVID19 INFECTION

The reasons for considering under high-risk category towards the COVID19 infection were revealed to be maximal responses among the options for Low immunity (96), followed by aging old (56) and minimal was seen for heart diseases (16) though the already vaccinated group occupies the quite highest of these responses (884), it's still not considered as reason for them.

Table 28: shows the frequency of responses of Study participants of reasons associated with consideration for High-risk category of COVID19 Infection

Reasons for high risk of covid19 infection consideration	Frequency of subjects	Percentages
Old aged person	56	5.46
Low immunity (immunocompromised) due to my diseases/ medications	96	9.37
respiratory illness such as asthma, copd (emphysema, bronchitis)	36	3.51
heart related diseases	16	1.56
Other illnesses that make me get seriously receptive towards acquiring covid19	24	2.34
Don't think i'm in high risk	884	86.32

HISTORY OF SIDE EFFECTS ASSOCIATED WITH COVID19 VACCINE

COVID19 vaccine associated side effects have been evaluated for the prevalence and found that most of them are the in majority in Tiredness or weakness in the body (424), followed by second most Fever (400) while the least being the allergic rashes (16) and syncope (16).

Table 29: shows the frequency of responses of Study participants experienceregarding the side effects upon getting vaccinated for COVID19

Side effects of covid19 vaccines	Frequency of subjects	Percentages
Tiredness or weakness in the body	424	41.40
Muscles aching or pain	360	35.15
Fever	400	39.06
Headache	324	31.64
Local pain at injection site	340	33.20
Joint pain	200	19.53
Nausea (vomiting sensation)	100	9.76
Diarrhea	48	4.68
Sore throat	52	5.07
Insomnia (sleeplessness)	48	4.68
Chills and shivering's	60	5.85
Allergic rashes	16	1.56
Syncope (fainting	16	1.56
None of the above	52	5.07
Unvaccinated	608	59.37

PREVENTIVE PRACTICES OF HYGIENE FOR COVID19INFECTION

Personal preventive practices of subjects themselves were subjected to analysis from the frequencies obtained for different measures of hygiene for COVID19. Washing hands (924) and social distancing (872), Face mask usage (860) have the most dominant frequencies while the slightest numbers were found to be in none of the options.

Table 33: shows the frequency of Personal preventive practices of Subjects for COVID19

Preventive practices of subjects for covid19	Frequency of subjects	Percentages
Washing hands with soaps, handwash, sanitizers	924	90.23
Facemask usages	860	83.98
Double masking of triple layered	588	57.42
Single mask dual layered	340	33.20
Washing face, nose and gargling mouth frequently with hot water	580	56.64
Social distancing	872	85.15
None of the above	36	3.51
Alkaline foods	76	7.42
Multivitamin supplements	280	27.34

Discussion

This study aimed to understand the factors associated with hesitancy of COVID19 vaccines along with the evaluation of existing knowledge about COVID19 symptoms and preventive measures while rising the awareness of possible side effects of the COVID19 vaccine and assess the preventive practices for COVID19 among the study participants. This has been achieved by properly analyzing the study participants perception and perspective on the acceptance of COVID19 vaccines

Demographics:

Study participants demographic data was revealed to be having most of the male and female participants in the age groups of the 23-35 years (81.6%) who were in unmarried (76.9%), studying in the undergraduate levels (64%) being students (65%) stemming relatively in good numbers from the non-health related (57%) educational background.

In a US study conducted among the adult population, males were more willing to be vaccinated than females(Ruiz JB, Bell RA et al, 2021)31, in a similar study conducted in Saudi Arabia males were 1.55 times more willing than females to be vaccinated(Barry M, Temsah MH, Alhuzaimi A, et al. 2021)32. In the present study the results finding for age groups and gender versus unvaccinated found to be more in 23-35 age group (59.2%) among them (35.7%) female, (23.5%) male. Results of education background versus unvaccinated subjects showing health related participants unvaccinated (1.2%) and non-health related (59.2%).

Health status:

There is a need for guidelines in vaccinating people who are not considered eligible toreceive the vaccination as some of them may be high risk individuals . In the current study, most of the respondents have opted for the presence of existing chronic illness such as Diabetes mellitus, Hypertension etc. with No (95%), May be (1.9%) and only minimal numbers were with the Yes (3.1%) %) (Abebi et al. 2021)

Knowledge Determinants of COVID19:

The outcome regarding knowledge determinants about COVID-19 symptoms revealed that the majority of participants had an excellent level of knowledge that loss of smell and taste sensations (79.7%), fever (79.2%), chills (37.1%) and headache (84.9%) are the common symptoms of the disease.

Personal protective as well as workplace safety measures against COVID-19 infection such as social distancing, wearing personal protective equipment such as quite high for usage of face masks (92.9%), Social distancing (91%), frequent hands washing (88%), and several protective measures were also studied.

When participants were evaluated for the awareness of the COVID19 transmission yielded quite remarkable route of spread via Inhalation of infected persons droplets (92.18%) followed by eating unhygienic food (8%), even responded with drinking unclean water (8.9%) respectively.

The study subjects have exhibited quite mixed perspectives for believing the COVID 19 cure. It was recorded a relatively high positive numbers (64%) for believing in the cure while (28%) have responded with a Maybe and only a (9.79%) opted for not believing the thought of COVID19 cure.

It's evident that from both social media and health care workers are the primary sources of information on preventive measures during times of crisis (Nooh HZ, Alshammary RH, Alenezy JM, Alrowaili NH, Alsharari AJ, Alenzi NM et al, 2020)36, however other studies in foreign countries utilized traditional media like television and news as their primary sources of information on symptoms regarding COVID 19 pandemic (Meier K, Glatz T, Guijt MC, Piccininni M, Van Der Meulen M, Atmar K, et al ,2020)37

Perception of COVID19 and Vaccinations

The results for the assessment of the Perception of COVID19 vaccination have also showed relatively high numbers such as previous history of vaccination for Hep B, TT, etc.

Subjects were evaluated for the knowledge of previous COVID19 infection history of different groups. Upon observation, almost equal numbers of friends (41%) and Family members (42%) of the participants have got infected with COVID19.

Past infection status of the participants exhibited that only a relatively minimal persons (14%) were infected with COVID19 in contrast with(79%) of them have not been positive yet.

When study individuals were assessed for the time of infection of COVID19 positivity, many of them (21%) have acquired the infection within a period of 1-3 months range and least numbers (8%) have got it before the 6 months period. Participant's vaccination status was observed to be in maximum for the unvaccinated (60.8%) and moderate ranges for fully vaccinated (14.8%) and partially vaccinated (26.8%) which is highly predictable

Perspective on acceptance of COVID19 vaccine:

The study participants perspective on the safety associated with taking the COVID19 shots were found to be recorded with majority of them (66%) agreeing on the safeness of COVID19 vaccines while very few individuals (8%) responded not safe

Study individual's perspective on the ability of vaccines to prevent the spread of COVID19 have exhibited quite positively in high numbers (66%) for _Yes while only a minimal (8%) of them recorded _No.

Study participants have showed the remarkable numbers for the acceptance of COVID19 vaccines recorded in quite high numbers (54%) for _Definitely will accept while there were slightest responses for the _Definitely will.

In some studies, executed before the COVID-19 vaccination program (when the spread was intensive with alarming number of cases, registered per day) had started in India, varied acceptance levels of 86.3 % (Sharun et al. 2020)40, 77.3 % (Gautam et al. 2020)41, 74.5 % (Lazarus et al. 2021)42and 74 % (Kazi Abdul and KhandakerMursheda, 2020)43were recorded. Similarly, a high acceptance was observed in others countries like US (80 %) (Thunstrom et al. 2020)44, and China (72.5 %) (Fu et al. 2020)45 prior to vaccination. In our survey on knowledge and acceptance for COVID-19 vaccination, conducted during the 1st phase of vaccination in India, this study had showed around (54 %) acceptance rate (considering the option of ―Definitely will accept‖ as complete acceptance among the 1024 participants, hailing from state of Telangana of the country.

Factors associated with covid19 vaccine hesitancy

Vaccine hesitancy for COVID19 has been associated with many factors of the study participants and the results have manifested in relatively huge numbers for the Side effects (21%) and the accessibility or Shortage of Vaccines (23%). The lowest and least concerned was for the religious or personal beliefs (1.1%).

Reasons associated for high-risk categorization for covid19 infection

The reasons for considering under high-risk category towards the COVID19 infection were revealed to be maximal responses among the options for Low immunity (96), followed by aging old (56) and minimal was seen for heart diseases (16) though the already vaccinated group occupies the quite highest of these responses (884), it's still not considered as reason for them

Side effects assessment for COVID19 vaccines:

Study participants were assessed for the side effects associated with different COVID19 vaccine brands and found most common was the Tired or weakness in the body (41%) followed by the Fever (39%) while the least reported was for the allergic reactions and syncope (1.5%). Upon analysis, we could get the inference there is a quite high significant positive relationship between the occurrences of side effects and the individuals that got fully vaccinated.

In Emergency use approval (EUA), data was supplemented with safety data of all safety data of phase 1 and phase 2 including the details of serious adverse events, adverse events of special events and cases of severe COVID-19 infection (Joffe Set al, 2021). Presently, the reported ADRs due to COVID-19 vaccines are mild (Thomas K et al. 2020) although there have been newspaper reports on vaccine-associated deaths (Adhikari P, Adhikari K, Gauli B, Sitaula D)

Personal Hygiene practices during COVID19:

Only a fraction of individuals (16.4%) actually increased their hygienic preventive practices against COVID19 after getting vaccinated and even some reduced up their measures (3.1%) as they might have put their belief in the protective aspects of the COVID19 vaccines right after the vaccinations, while one third of the individuals (36%) maintained the same measure as before they got vaccinated, most of individuals (45.31%) marked as that doesn't apply to me as they haven't vaccinatedyet.

Limitations of the study:

The study was conducted based on the respective online platforms and relied on the circulation of the questionnaire link on different social media platforms for a certain period of time.

As deprived populations may not be able to participate in the survey there may be possible chances of bias.

However, when compared to the present population in India, the survey-sample was representative for participants of 18-22 years to the age of 50-60, students, and educated (more than a degree). The findings may not be a true representation from theperspective of the entire nation. A more systematic, community-based, inclusive sampling method (preferably conducted in local/social languages of different areas) is recommended to improve the representativeness and generalizability of the online survey findings.

Conclusion

Overall, most of the study participants had a relatively good perception and perspective on the acceptance of the COVID19 vaccine yet there appears to be an average level of vaccine acceptance of 79% despite the knowledge of the COVID19 prevails to be the questionable as the current social media-based health education patterns seemed to be not reaching well enough into the underrepresented populations such as inaccessible and uneducated communities living in the quite rural and remote locations of our country.

At current vaccination rate of our country India, only about 3.8% are fully vaccinated and still has a long way to reach in order to completely curb the COVID19 pandemic. Most common factors associated with COVID19 vaccine hesitancy were positively associated with the Vaccination status of the individuals while much deeper understanding is required on a bigger sample size.

It is critical to develop tailored strategies to increase acceptability of the COVID-19 vaccine and decrease hesitancy Because intention to

take the COVID-19 vaccine and factors mentioned in this study was so negatively correlated along with side effects of the COVID19 vaccine all these interpretations of this study dictate the measures that are needed to build confidence in the vaccine and much more bigger sample sized research studies are needed. Interventions should be implemented with different communication techniques to explain the risk of COVID-19 to the population. At the same time, individuals should be educated about herd immunity, vaccine safety, potential side effects associated with the vaccinations and how vaccines can help people to return to their daily lives. Decreasing vaccine hesitancy will help ensure better vaccine coverage. Opposition to vaccines may influence COVID-19 vaccine hesitancy. Hence, governments and health authorities should enhance efforts to encourage trust in vaccines and reduce misinformation.

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