

Knowledge And Awareness About The Need To Take Covid-19 Vaccination Among General Population - A Cross Sectional Survey

Priyanka R¹, Dr. Gheena.S², Dr. Sandhya³

¹Saveetha Dental college & hospitals, Saveetha Institute of Medical and Technical Science (SIMATS) Saveetha University, Chennai-600077, India Mail id: 152001034.sdc@saveetha.com

²Professor, Department of Oral Pathology, Saveetha Dental college, Saveetha Institute of Medical and Technical Science (SIMATS) Saveetha University, Chennai-600077, India Mail id: gheena@saveetha.com Phone. No: 9884033777

³Senior lecturer, Department of Dental Anatomy(Oral Pathology), Saveetha Dental college, Saveetha Institute of Medical and Technical Science (SIMATS) Saveetha University, Chennai, India Mail id: sandhyas.sdc@saveetha.com

ABSTRACT

BACKGROUND: Getting immunised is very important for the community as it is a shield that covers the body from getting infected. Some of the early age mortality disease spread is still prevailing. Creating awareness through the survey can inculcate the importance of getting vaccinated.

AIM: To assess the Knowledge and awareness of the general public on the necessity and benefits of getting vaccinated against COVID-19.

MATERIALS AND METHODS: The population of age between 18- 40 was considered for the survey which was taken electronically- a Pre-tested, structured questionnaire containing 8 questions was sent to the participants. The data collected was tabulated and parameters were analysed by Pearson's chi-square test using the IBM SPSS software (version 23). **RESULTS:** About 28.13% are not aware about the necessity and benefits of getting vaccinated. And about 43.75% have not taken any vaccination in the course of time while 35% had ill effects after getting vaccinated. And about 38.13% have tested negative for COVID-19 in which 21.88% of females and 41.25% of males have tested negative in which 15.63% of people aged to 18-20, 33.75% of people aged to 20-30 and 13.75% of people aged to 30-40.

CONCLUSION: The overall awareness level of the people was inadequate. Educating the public through awareness programs, camps and research programs can improve their attitude and perception towards vaccination. Increasing knowledge and benefits of COVID-19 vaccination would ensure widespread, positive uptake of them.

KEYWORDS: Awareness, Benefits, Covid- 19 Vaccine, Immunisation, Innovative study

INTRODUCTION:

Vaccination is the administration of a vaccine to help the immune system develop protection from a disease. It is biologically prepared to increase the immunity against the particular disease and is prepared from typically resembling disease causing microorganisms for the action against the harmful disease (1). It is prepared from weakened or killed microbes. It prevents deadly contagious disease from spreading. Enhancing the information about vaccines that is distributed in the market helps people make proper decisions (2).

The COVID-19 threatens not only the human body but also human beings' day-to-day life activities and livelihood. The pandemic has decimated jobs and placed millions of livelihoods at risk. These include workers in the formal economy and in poorly protected and low-paid jobs, including youth, other workers and migrants. Vaccination remains a key preventive measure to reduce disease burden and mitigate future outbreaks. If not vaccinated, then the infectious diseases can make you very sick, cause you permanent disability, or even kill you. Not all vaccines are completely effective. For example, the COVID-19 vaccine is about 90% effective. This means that some people who are vaccinated might still get disease symptoms if they're exposed to the virus. But if this happens, people get less severe symptoms and usually recover more quickly (3).

Vaccines work really well against the disease causing microbes but no medicine can be perfect, but mostly child vaccines produce immunity about 90-101% of the time (4). Our body has its own immunity, where once attacked by a disease it has its own defense called 'memory attacks' where it is retaken if the vaccine isn't required (5). Unvaccinated population threatens the health protection of the community and its safety (6). Campaigns were conducted in order to vaccinate people door to door by UNICEF in the USA (7). The government of India launched an expanded programme for immunization in 1978 for getting vaccinated and the key area under National Rural Health Mission (NRHM) (8). Eventually, India is still experiencing some of the highest preventable childhood mortality of any country in the world (9).

The major drawback that India faces is the lack of awareness of vaccination and its benefits, making coverage to the entire population complex due to geographical diversity (10). The other reasons are inadequate health response, lack of accountability, inadequate supervision and monitoring, lack of micro planning at district level and lack of coordination between state and central government. Falsification and over-reporting of vaccine coverage rates are some of the big threats that make people think about security and interfere with minds (11). To overcome all these barriers, it is very important to make people more aware about vaccines and its benefits.

For many people, vaccination attitudes are shaped not only by healthcare workers but also by other informational sources. The anxiety while getting vaccination is more among young, aged people as hesitation to the injunction prevails most in spite of the benefits and knowledge (12). Our team has extensive knowledge and research experience that has translated into high-quality publications(13)(14)(15)(16)(17)(18)(19). The current study aims to evaluate the knowledge and awareness of the general population about getting vaccinated against COVID-19.

MATERIALS AND METHODS:

A close ended, standardised questionnaire was prepared and circulated using an online platform (google forms). There were 8 questions taken on aspects such as history, knowledge, and attitude about getting vaccinated. . Only the literate population was considered and to minimise the sampling bias, random sampling was done. The data obtained were tabulated and Statistical analysis was performed in Statistical Package for the Social Sciences (SPSS) software version 23.0 (IBM, Chicago, USA). Descriptive statistics were performed to present the frequency distribution of the options of the question items. Also, Pearson's chi-square association was done to find the influence of education on the awareness about vaccination and the measures taken among the participants. p value <0.05 was considered to be significant.

RESULTS:

In total, 104 participants responded. Where 27.50% of the participants in 18-20 years, 48.13% of the participants in 20-30 years and 24.38% of participants in the 30-40 years age group. 57.50% of participants were male and 42.50% of them were females. The results were concluded based on the responses from the participants. About 38.07% of participants have agreed that their local representatives have taken initiative to get them vaccinated (Fig.1). About 39.75% of participants were aware of the benefits of vaccines (Fig.2) which includes 26.25% of males and 13.13% of females. (Fig.2a)

, the majority age group of 20-30 about 21.88% of participants were aware (Fig.2b). While 65% of the participants stated that there was no ill effect after getting vaccinated (Fig.3) in which 41.14% of males and 23.42% of females said no ill effects (Fig.3a), the participants of the age group 20-30 about 33.54% said no ill effects (Fig.3b). About 58.13% of participants prefer private hospitals over government hospitals for getting vaccinated (Fig.4).

Due to the post COVID-19 scenario, as the spread of rumors about vaccines are more, 34.38% of participants yet to decide whether to get vaccinated (Fig.5) in which 11.25% of females and 23.13% of males, yet to decide about vaccination (Fig.5a) and the age group of 20-30 19.38% of participants were yet to decide whereas 16.88% of the same age group have taken the vaccine (Fig.5b). About 38.13% have tested negative for COVID-19 (fig.6). Since other vaccinations are also important for the community about 43.75% stated no for other immunisations such as for rabies, swine flu, chicken pox etc.,(Fig.7). As for the government response, it is more important for the pandemic situation about 37.50% of the participants stated that the rate of government response is normal (3.0) and about 20.63% of participants stated that governmental actions are extraordinary (5.0) (Fig.8).

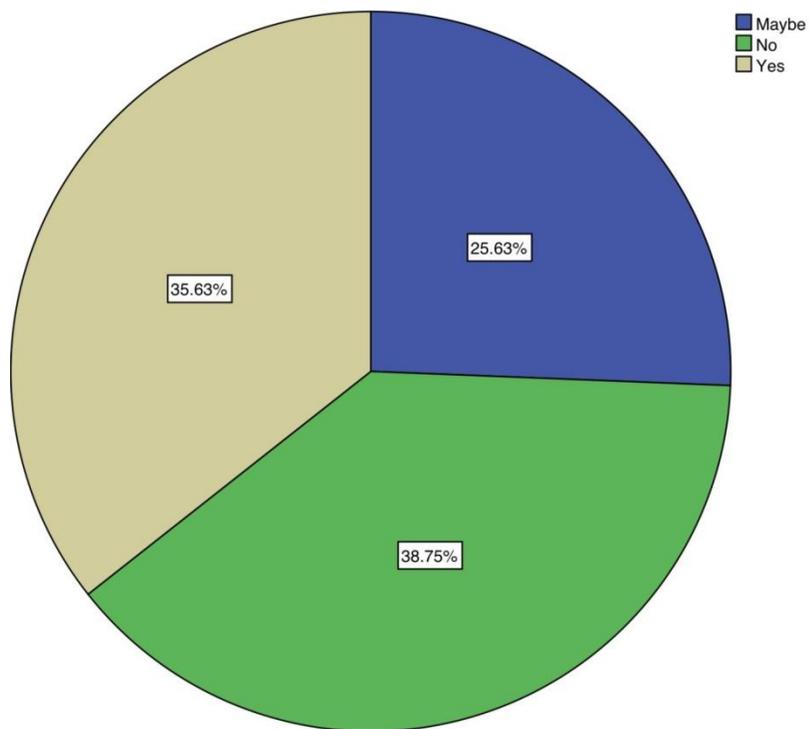


Figure 1: Pie chart represents the response of the study participants regarding the initiatives taken by their local representatives to get them vaccinated against COVID-19. Beige denotes 'yes', green denotes 'no' and blue denotes 'may be'. Majority of the participants (38.75%) completely disagreed, 35.63% of the participants agreed whereas 25.63% of the respondents were not aware of any initiatives.

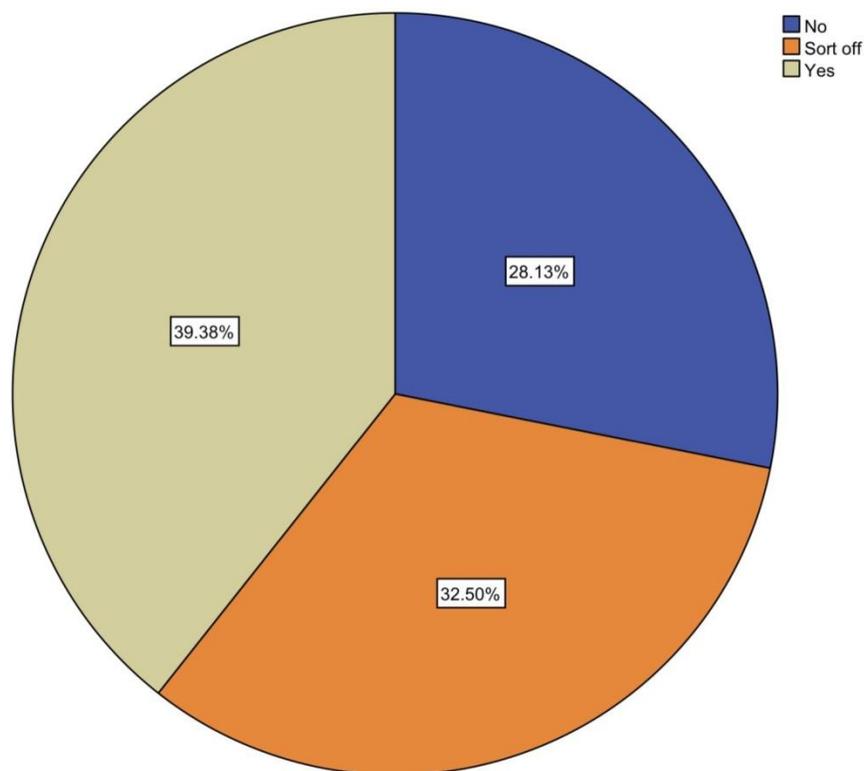


Figure 2: Pie chart representing the awareness about the benefits of getting vaccinated. Beige denotes 'yes', Blue denotes 'no' and Orange denotes 'sort of'. 39.38% of participants were aware whereas 32.50% were not sure and 28.13% were not completely aware of the benefits of vaccination.

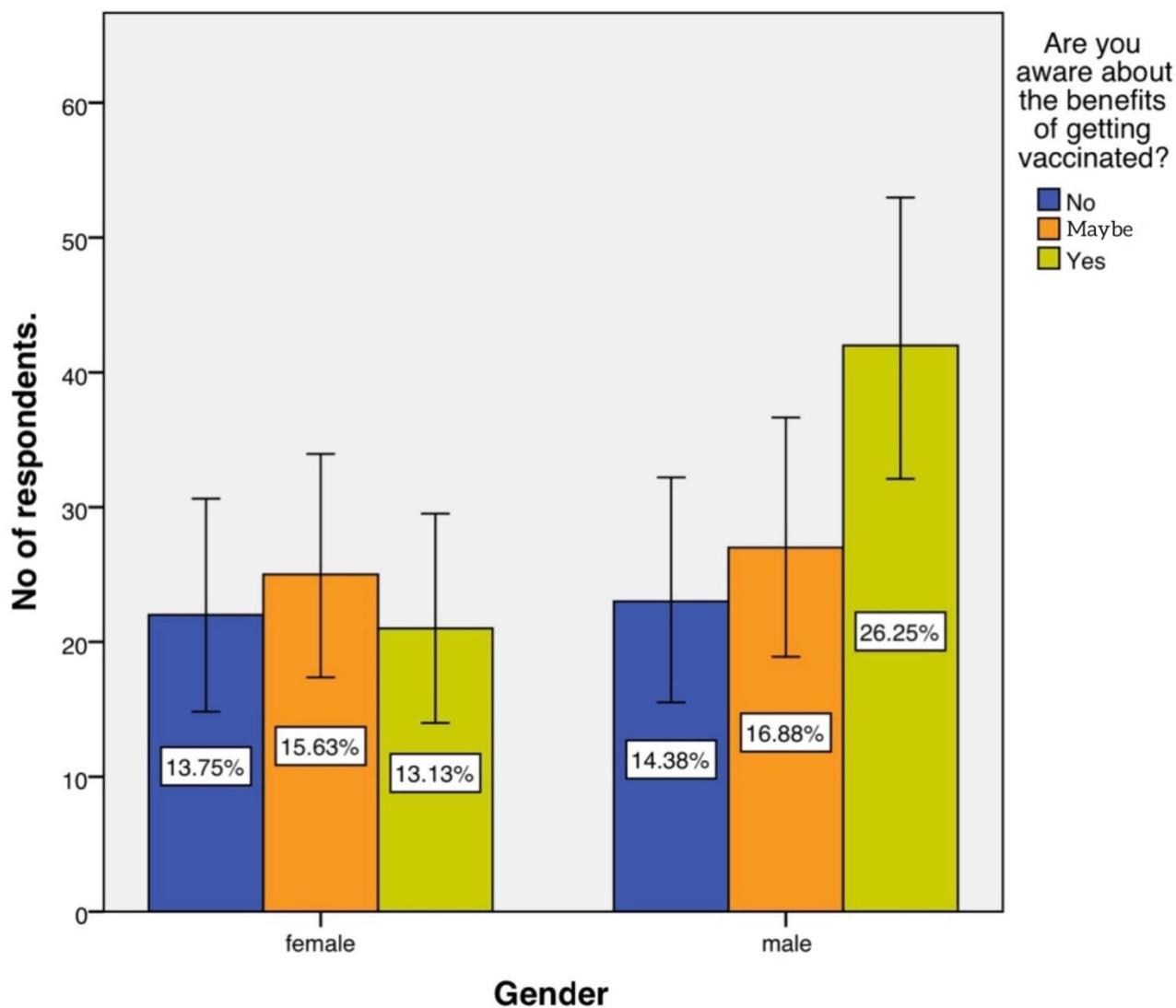


Figure 2a: Bar graph represents the percentage of male and female participants aware about the benefits of getting vaccinated. The X axis denotes the gender of the participants and the Y axis denotes the number of the participants. Where 'Blue' depicts no, 'Orange' depicts maybe and 'Beige' depicts yes. 26.25% of males and 13.13% of females were aware ; 13.75% of males and 14.38% of females were not aware .This difference between the groups was statistically significant (chi-square test; p value=0.04)revealing that there's a significant percentage of people who are not aware of the benefits of vaccination.

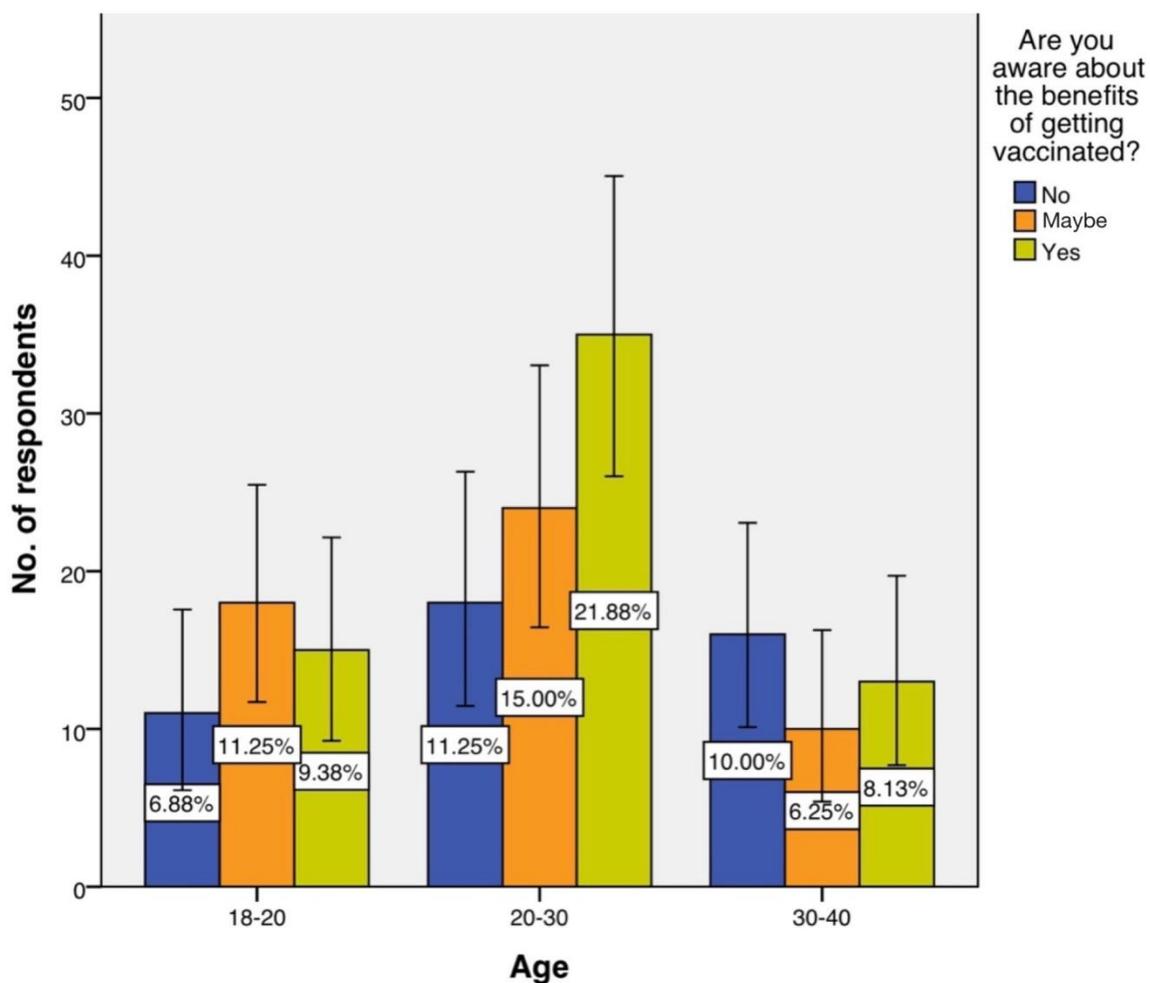


Figure 2b: Bar graph represents the percentage of participants according to age. The X axis denotes the age group of participants aware about the benefits of getting vaccinated and the Y axis represents the number of participants. ‘Blue’ depicts no, ‘Orange’ depicts ‘maybe’ and ‘Beige’ depicts yes. About 9.38% of people aged to 18-20, 21.88% of people aged to 20-30 and 8.13% of people aged to 30-40 are aware about the benefits of getting vaccinated whereas about 6.88% of people aged to 18-20; 11.25% of people aged to 20-30 and 10% of people aged to 30-40 are not aware about the benefits of getting vaccinated. This difference was statistically significant (chi-square test; p value =0.04) implying that there's a significant percentage of people who are not aware of the benefits of vaccination.

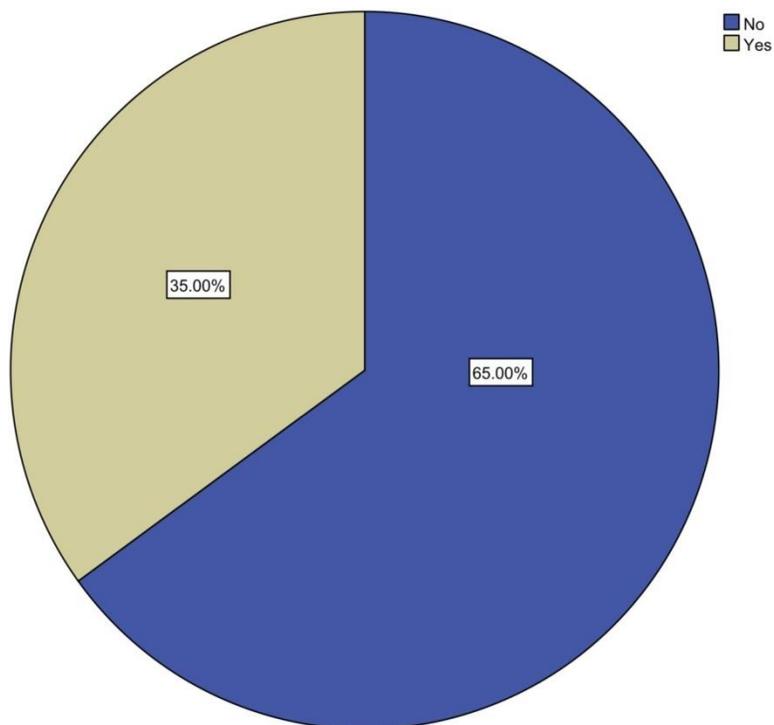


Figure 3: Pie chart represents the percentage of participants whether they have any sort of adverse side-effects after getting vaccinated against COVID-19. Blue denotes 'no' and Beige denotes 'yes'. 65% of participants did not experience any adverse side-effects after getting vaccinated whereas 35% of participants had experienced various side-effects after getting vaccinated against COVID-19.

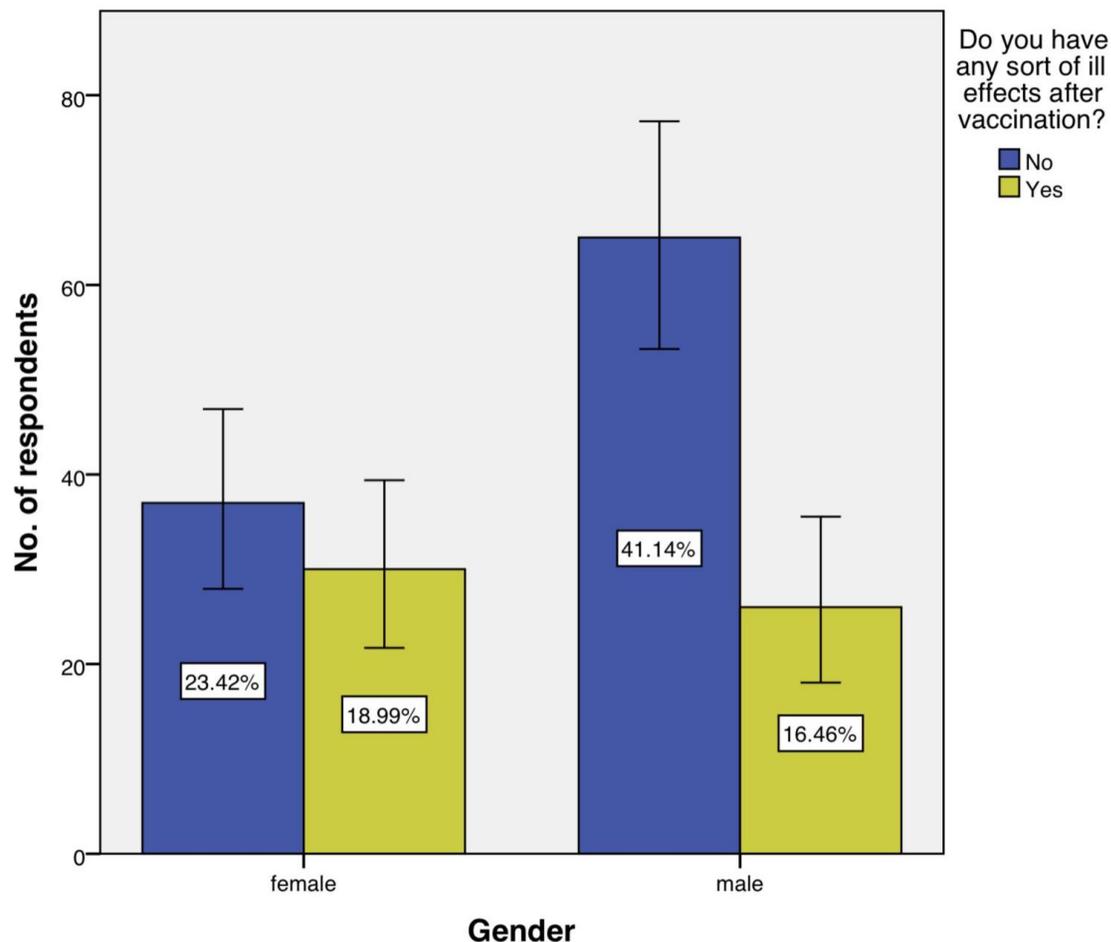


Figure 3a: Represents the percentage of male and female participants. Where the X axis denotes the gender of the participants who have any sort of ill effects after getting vaccinated and Y axis represents the number of the participants. 'Blue' depicts no and 'Beige' depicts yes. About 23.42% of females and 41.14% of males did not have any sort of ill effects after getting vaccinated whereas 18.99% of females and 16.46% of males did have some sort of ill effects after getting vaccinated. This difference was statistically significant (chi-square test; p value =0.04)there's a significant percentage of people who do not have any ill effects after getting vaccinated.

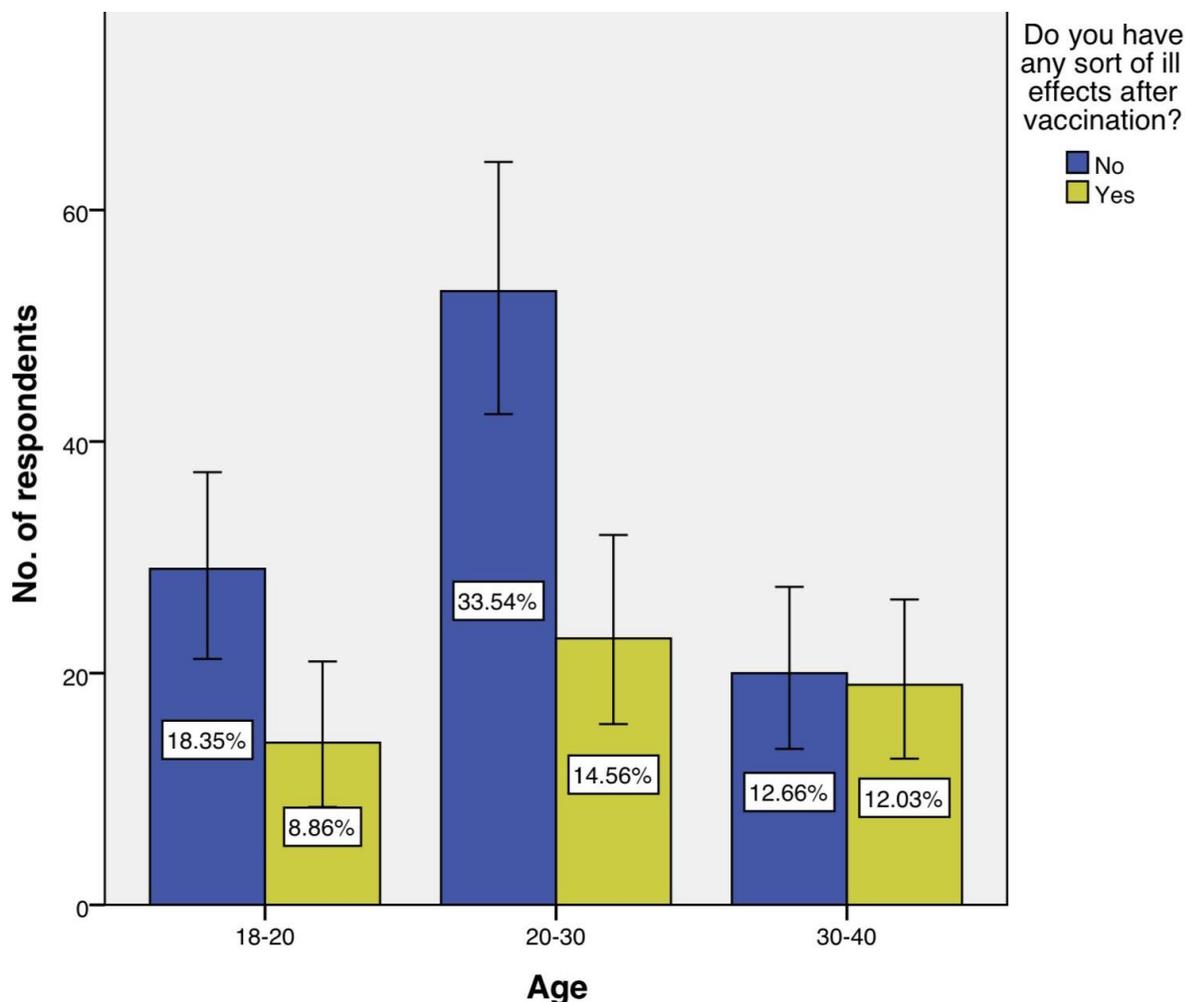


Figure 3b: Bar graph represents the percentage of participants according to age. Where the X axis denotes participants who have any sort of ill effects after getting vaccinated and Y axis represents the percentage of the participants. 'Blue' depicts no and 'Beige' depicts yes. About 18.35% of people aged to 18-20, 33.54% of people aged to 20-30 and 12.66% of people aged to 30-40 did not have any sort of ill effects after getting vaccinated whereas about 8.86% of people aged to 18-20, 14.56% of people aged to 20-30 and 12.03% of people aged to 30-40 did have ill effects after getting vaccinated. This difference was statistically significant (chi-square test; p value =0.04) there is a significant percentage of participants who did not have any ill effects after getting vaccinated.

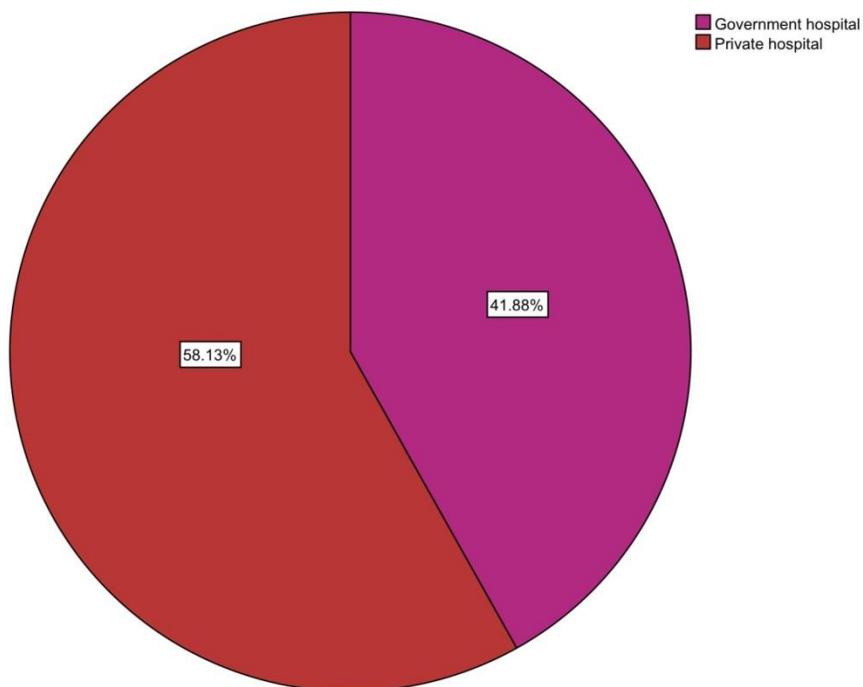


Figure 4: Pie chart represents the percentage of participants' preference of hospital for getting vaccination. Pink denotes 'government hospitals' and Red denotes 'private hospitals'. 58.13% of participants' prefer getting vaccinated in private hospitals whereas 41.88% of participants' prefer government hospitals for getting vaccinated.

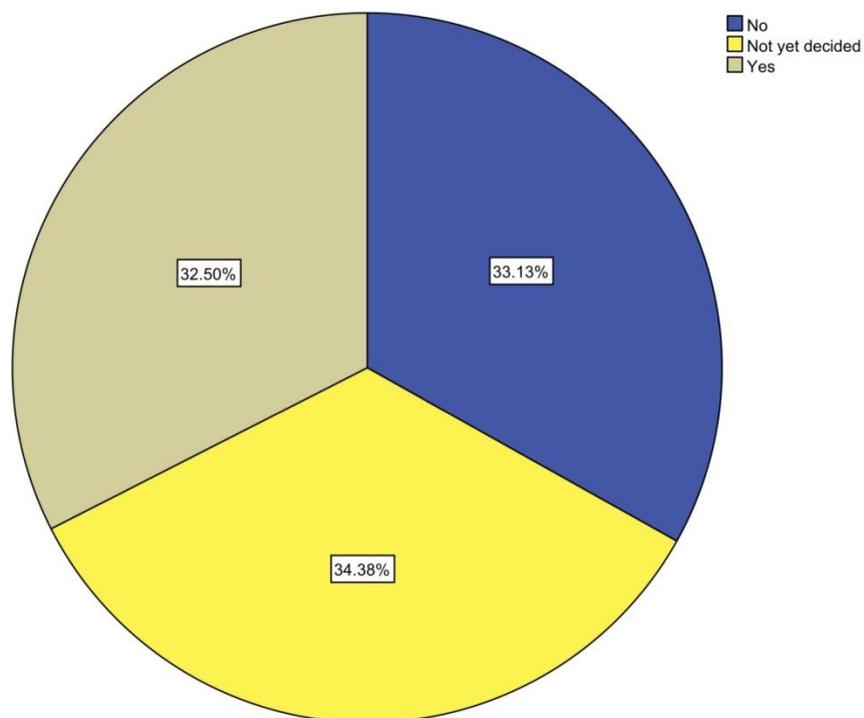


Figure 5: Pie chart represents the percentage of participants willing or not willing or yet to decide about getting COVID-19 vaccinated. Beige depicts 'yes', Yellow depicts 'not yet decided' and Blue depicts 'no'. About 34.38% have not yet decided about getting vaccinated, 33.13% not willing to get vaccinated and 32.50% willing to get vaccinated for COVID-19.

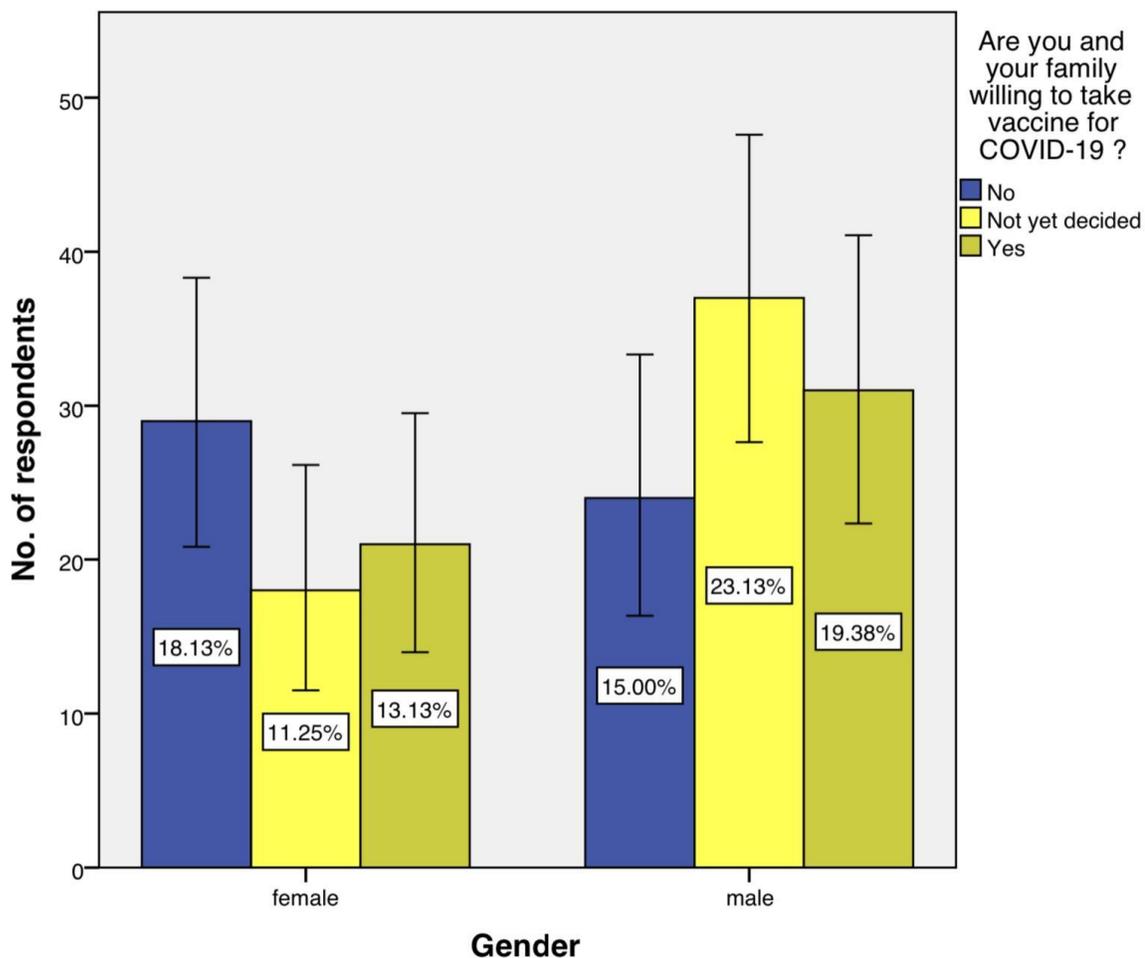


Figure 5a: represents the percentage of male and female participants. The X axis denotes the gender of the participants willing or not willing to get vaccinated and the Y axis represents the number of the participants. ‘Blue’ depicts no, ‘Yellow’ depicts not yet decided and ‘Beige’ depicts yes. About 18.13% of females and 15% of males have decided not to get vaccinated whereas 13.13% of females and 19.38% of males prefer to get vaccinated. This difference was statistically significant (chi-square test; p value =0.04) there is a significant percentage of male participants who are yet to decide about getting vaccination.

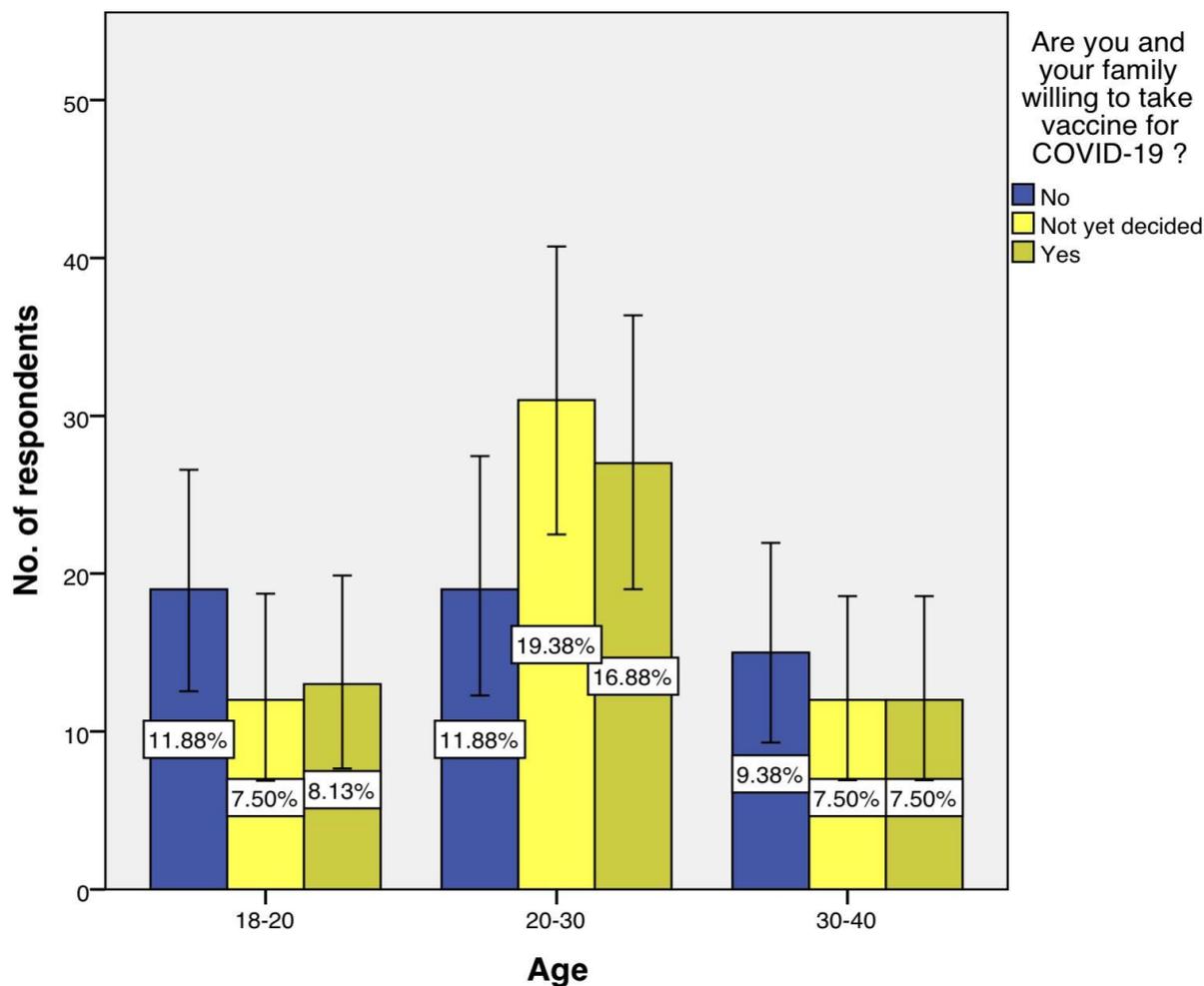


Figure 5b: Bar graph represents the percentage of participants according to age. Where the X axis represents the age group of the participants willing or not willing to get vaccinated and the Y axis represents the number of the participants. ‘Blue’ depicts no, ‘Yellow’ depicts not yet decided and ‘Beige’ depicts yes. About 11.88% of people aged to 18-20, 11.88% of people aged to 20-30 and 9.38% of people aged to 30-40 prefer not to get vaccinated whereas about 8.13% of people aged to 18-20, 16.88% of people aged to 20-30 and 7.50% of people aged to 30-40 prefer to get vaccinated. This difference was statistically significant (chi-square test; p value =0.04) there is a significant percentage of participants in the age group of 20-30 who are yet to decide about getting vaccinated.

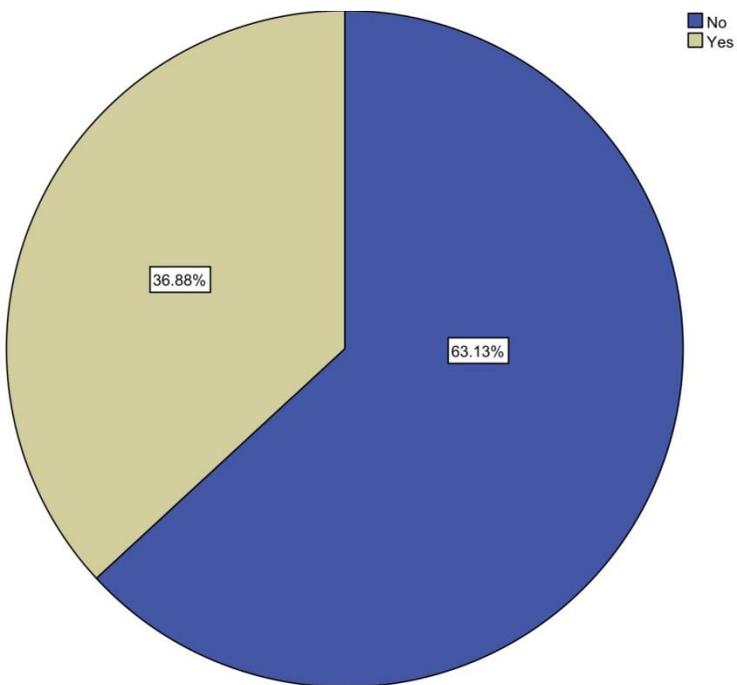


Figure 6: Pie chart represents the percentage of population tested positive for COVID-19. Blue depicts 'no' and Beige depicts 'yes'. About 63.13% have tested negative whereas 36.88% have tested positive for COVID-19

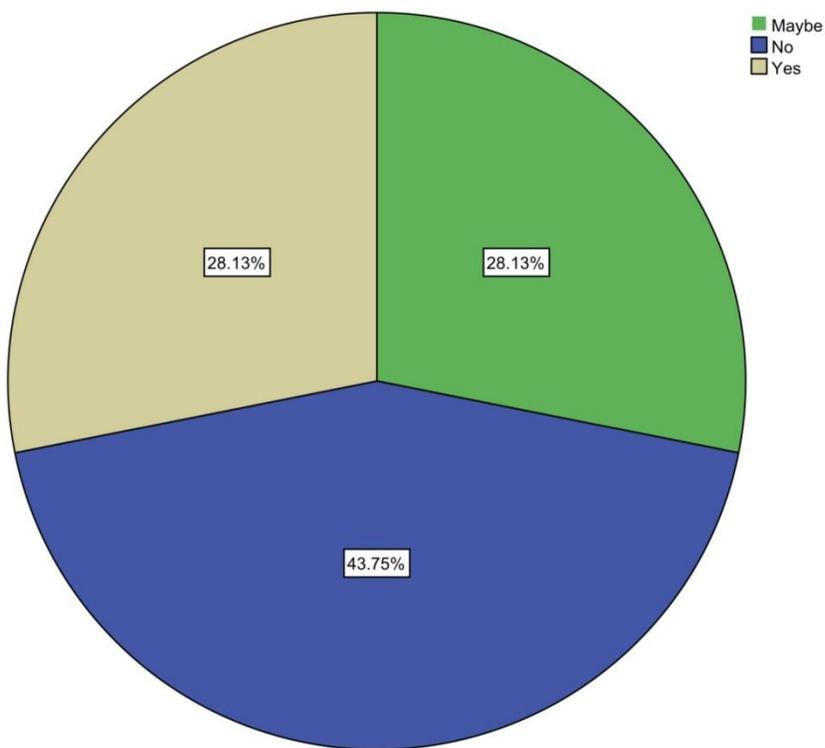


Figure 7: Pie chart represents the percentage of participants who took other vaccinations such as swine flu, rabies etc., Beige depicts 'yes', Blue depicts 'no' and Green depicts 'maybe'. 28.13% of participants took other vaccines, 43.75% of participants have not taken other vaccines and 28.13% of participants may have taken other vaccines.

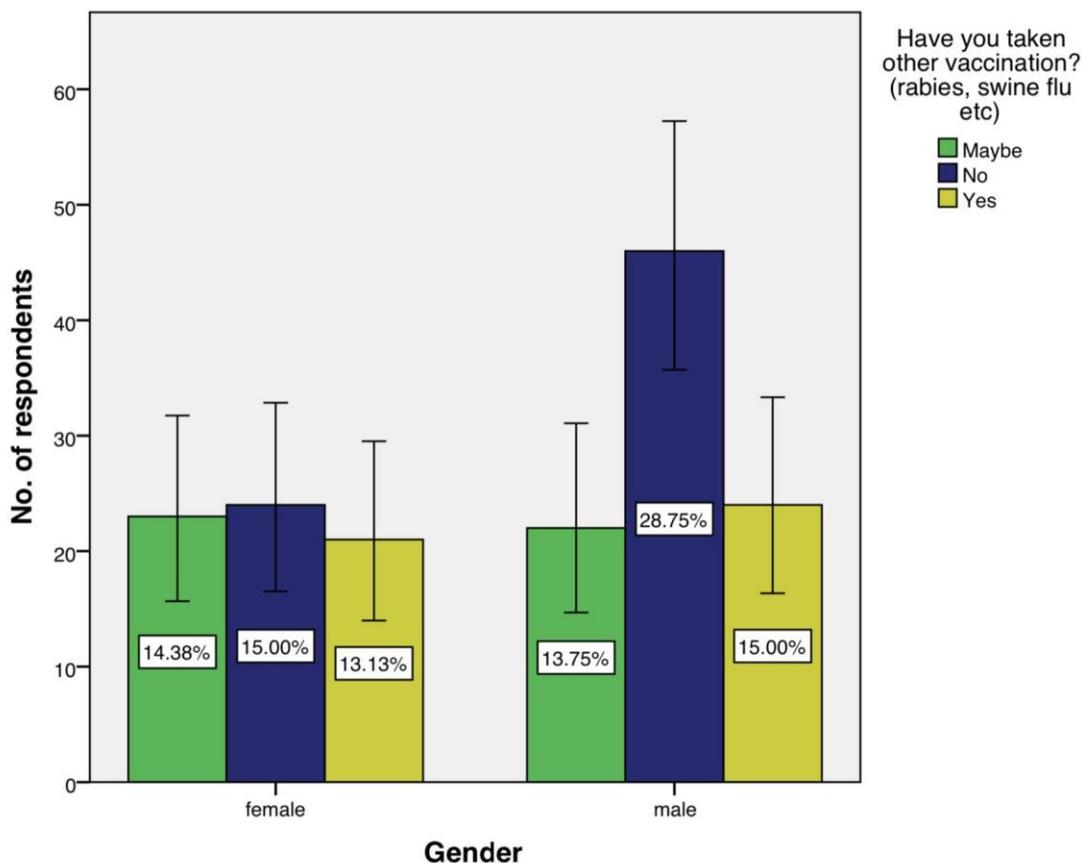


Figure 7a: represents the percentage of male and female participants. Where X axis denotes the gender of the participants who have taken other vaccines such as for swine flu and rabies etc and Y axis represents the number of the participants. 'Blue' depicts no, 'Green' depicts not yet decided and 'Beige' depicts yes. About 15% of females and 28.75% of males have not taken other vaccines whereas 13.13% of females and 15% of males have taken other vaccines. This difference was statistically significant (chi-square test; p value =0.04) there is a significant percentage of male participants who have not taken other vaccinations.

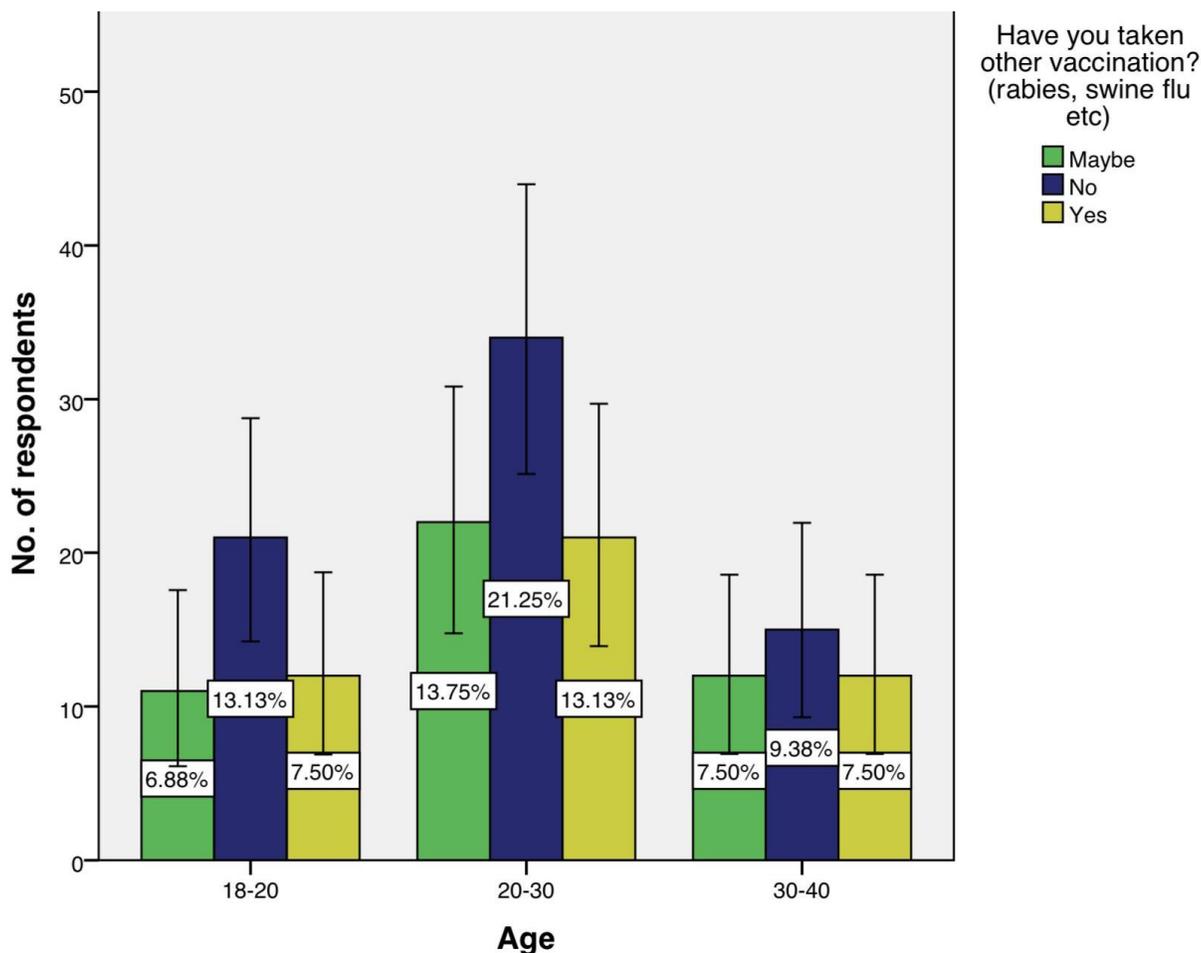


Figure 7b: Bar graph represents the percentage of participants according to age. Where X axis denotes the age group of the participants who have taken other vaccines such as swine flu and rabies etc and Y axis represents the number of the participants. 'Blue' depicts no, 'Green' depicts maybe and 'Beige' depicts yes. About 13.13% of people aged to 18-20, 21.25% of people aged to 20-30 and 9.38% of people aged to 30-40 have not taken vaccines whereas about 7.50% of people aged to 18-20, 13.13% of people aged to 20-30 and 7.50% of people aged to 30-40 have taken other vaccines. This difference was statistically significant (chi-square test; p value = 0.04) there is a significant percentage of participants in the 20-30 yr old age group who have not taken other vaccinations.

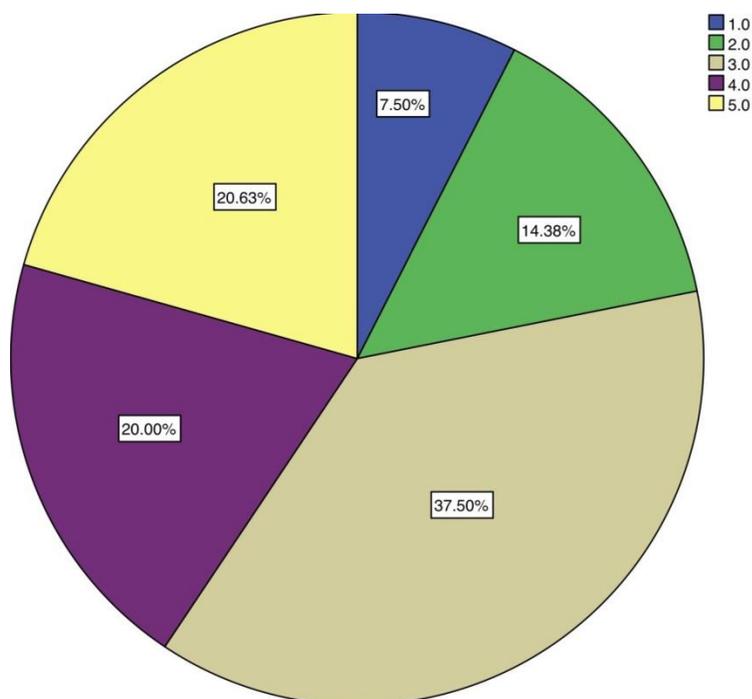


Figure 8: Pie chart represents the percentage of participants rate on governmental actions. Blue depicts '1.0', green depicts '2.0', beige depicts '3.0', purple depicts '4.0' and yellow depicts '5.0'. 7.50% have rated 1.0 on governmental actions, 14.38% have rated 2.0 on governmental actions, 37.50% have rated 3.0 on governmental actions, 20% have rated 4.0 on governmental actions and 20.63% have rated 5.0 on governmental actions.

DISCUSSION:

By present study, about 39.75% are aware of the benefits of getting vaccinated and 58.13% prefer to get vaccinated in a private hospital. Whereas in a related article, about 98.8% knew the meaning of vaccination and 98.9% of the participants knew the reason behind getting vaccinated as it helps in development of immunity (20). About 53.14% preferred taking vaccines in governmental hospitals which is contradictory to the present study (21).

About 35% stated that there were ill-effects after getting vaccinated but according to (22) about 98.6% responded that there is no ill-effect after getting vaccinated. Mission Indradhanush was launched in December 2014 by the Ministry of Health and Family Welfare to reduce the child deaths occurring due to vaccine preventable diseases. It aimed to achieve more than 90% full immunization coverage by the year 2020 (23).

Posters should be put up in the hospitals in the local language to spread awareness about vaccination. About 73.4% of the people in our country are not aware of the leading reason of why we need to get vaccinated? (24). Even though people were aware about the vaccine some of the in-depth knowledge lacks as of identifying the vaccine that prevents the respective disease. In a previous survey conducted by (25) about 48.76% were able to identify the right vaccine for the appropriate disease. In another survey conducted for > 19 years, about 63.4% to 94% reported awareness about HPV, 71.5% are aware about tetanus, 72% aware about pertussis, 75.4% aware about HZ, 75.8% are aware about hepatitis B and 83.1% are aware about pneumonia (26). Hence, the awareness that vaccines prevent diseases, knowledge is very much important.

Rumours that prevent people from getting vaccinated are very tiresome. In a survey conducted, misinformation about Human Papillomavirus (HPV) vaccine safety led to suspension of a Japanese government campaign called off (27). Thus leading us to the answer of why 34.38% of people are yet to decide about getting vaccinated against COVID-19. Gaps in young people's knowledge on antibiotics and vaccinations can be linked to their high antibiotic consumption and the insufficient vaccination coverage also identified in the 30-40 age group. According to the survey conducted by (28) , states that adolescents are really aware about vaccination but they are easily getting influenced by the media as a result the number of people getting vaccinated annually is gradually decreased and so is the immunity for the adolescents. It is very much important to create positive awareness about vaccination and encourage people to visit doctors if they have any doubts regarding vaccines as the coverage done by the media can be somewhat exaggerated.

FUTURE SCOPE

For further studies, a huge population in each category needs to be considered as it may lead to a more accurate answer because each category belongs to a different generation of timeline. To spread more awareness about vaccines and its benefits along with newspaper more posters, memes and articles need to be circulated in social medias like facebook, instagrams, snapchats etc., as it enhances the 14-18 population group to know about vaccination in depth.

LIMITATIONS

For the present study the reference articles were taken from the internet and those which are published in english were considered. And the survey was gathered through google form reply which made the answer less accurate as no supervisor was present and also due to pandemic situation face to face

survey wasn't possible to gather more intel about their thoughts on getting vaccinated and a fair idea about vaccines.

CONCLUSION:

The overall awareness level of the people was inadequate. People were willing to get vaccinated but the awareness about the vaccination was only high among the literate population. Educating the public through awareness programs, camps and research programs can improve their attitude and perception towards COVID-19 vaccination.

AUTHOR CONTRIBUTIONS

Author 1: Priyanka Rajesh, carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis and in the preparation of the manuscript.

Author 2: Dr.S.Gheena, Dr.Sandhya aided in conception of the topic, designing the study and supervision of the study, correction and final approval of the manuscript.

ACKNOWLEDGEMENT:

The author would like to thank all the participants for their valuable support and Saveetha Dental College and Hospitals for conducting the study.

SOURCE OF FUNDING:

This study is funded by Saveetha Institute of Medical and Technical Science and Indusind bank PVT Ltd, chennai.

CONFLICTS OF INTEREST

The authors hereby declare that there is no conflict of interest in this study.

REFERENCES:

1. Wolfe RM, Sharp LK. Anti-vaccinationists past and present. *BMJ*. 2002 Aug 24;325(7361):430–2.
2. Zimmerman RK, Raviotta J. Steps for clinicians and public health officials to take to reach persons of faith, for the sake of protecting all against vaccine-preventable diseases [Internet]. *Vol. 31, Vaccine*. 2013. p. 2009–10. Available from: <http://dx.doi.org/10.1016/j.vaccine.2013.02.021>

3. Saxena SK. Coronavirus Disease 2019 (COVID-19): Epidemiology, Pathogenesis, Diagnosis, and Therapeutics. Springer Nature; 2020. 213 p.
4. Chen RT, Kochhar S, Condit R. The Brighton Collaboration standardized templates for collection of key information for benefit-risk assessment of vaccines by technology (BRAVATO; formerly V3SWG). Vaccine [Internet]. 2020 Nov 6; Available from: <http://dx.doi.org/10.1016/j.vaccine.2020.10.072>
5. Ada G. The Importance of Vaccination [Internet]. Vol. 12, Frontiers in Bioscience. 2007. p. 1278. Available from: <http://dx.doi.org/10.2741/2146>
6. Typhoid vaccine (including typhoid-paratyphoid vaccine) [Internet]. Meyler's Side Effects of Drugs. 2016. p. 234–6. Available from: <http://dx.doi.org/10.1016/b978-0-444-53717-1.01610-3>
7. Hussain RS, McGarvey ST, Shahab T, Fruzzetti LM. Fatigue and fear with shifting polio eradication strategies in India: a study of social resistance to vaccination. PLoS One. 2012 Sep 26;7(9):e46274.
8. Maity S, Ghosh M. Measuring the status and identifying the factors influencing child immunisation in Darjeeling District of West Bengal, India [Internet]. Vol. 15, International Journal of Indian Culture and Business Management. 2017. p. 1. Available from: <http://dx.doi.org/10.1504/ijicbm.2017.10006290>
9. Shrivastwa N, Wagner AL, Boulton ML. Analysis of State-Specific Differences in Childhood Vaccination Coverage in Rural India. Vaccines (Basel) [Internet]. 2019 Feb 24;7(1). Available from: <http://dx.doi.org/10.3390/vaccines7010024>
10. Vashishtha VM, Kumar P. 50 years of immunization in India: Progress and future [Internet]. Vol. 50, Indian Pediatrics. 2013. p. 111–8. Available from: <http://dx.doi.org/10.1007/s13312-013-0025-0>
11. Mukherjee S, Madhivanan P, Li T, Albatineh A, Srinivas V, Jaykrishna P, et al. Correlates of completing routine vaccination among children in Mysore, India. J Infect Public Health. 2015 Jan;8(1):62–71.
12. Kim HW. Attitude and intention of HPV vaccination among Korean university students [Internet]. Available from: <http://dx.doi.org/10.26226/morressier.59ba7298d462b80296ca2071>

13. Princeton B, Santhakumar P, Prathap L. Awareness on Preventive Measures taken by Health Care Professionals Attending COVID-19 Patients among Dental Students [Internet]. Vol. 14, European Journal of Dentistry. 2020. p. S105–9. Available from: <http://dx.doi.org/10.1055/s-0040-1721296>
14. Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial [Internet]. Vol. 24, Clinical Oral Investigations. 2020. p. 3275–80. Available from: <http://dx.doi.org/10.1007/s00784-020-03204-9>
15. Website [Internet]. Available from: R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene [Internet]. Vol. 130, Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 2020. p. 306–12. Available from: <http://dx.doi.org/10.1016/j.oooo.2020.06.021>
16. Donbrow M. Microcapsules and Nanoparticles in Medicine and Pharmacy. CRC Press; 2020. 347 p.
17. Sarode SC, Gondivkar S, Sarode GS, Gadbail A, Yuwanati M. Hybrid oral potentially malignant disorder: A neglected fact in oral submucous fibrosis [Internet]. Vol. 121, Oral Oncology. 2021. p. 105390. Available from: <http://dx.doi.org/10.1016/j.oraloncology.2021.105390>
18. Raj Preeth D, Saravanan S, Shairam M, Selvakumar N, Selestin Raja I, Dhanasekaran A, et al. Bioactive Zinc(II) complex incorporated PCL/gelatin electrospun nanofiber enhanced bone tissue regeneration. Eur J Pharm Sci. 2021 May 1;160:105768.
19. Subramanyam D, Gurunathan D, Gaayathri R, Vishnu Priya V. Comparative evaluation of salivary malondialdehyde levels as a marker of lipid peroxidation in early childhood caries [Internet]. Vol. 12, European Journal of Dentistry. 2018. p. 067–70. Available from: http://dx.doi.org/10.4103/ejd.ejd_266_17
20. Waheed A, Waheeb Y, Hassan A, Fahim A. Seasonal influenza vaccination coverage and barriers among healthcare workers in an Egyptian Province. Med Lav. 2020 Oct 15;111(6):449–56.
21. Sankar BK, Rameh S, Sunny A. A Study to Assess and Correlate the Knowledge, Attitude and Practices of Vaccination among Mothers with Educational Status in a Teaching Hospital in South

- India [Internet]. Vol. 08, Primary Health Care Open Access. 2018. Available from: <http://dx.doi.org/10.4172/2167-1079.1000290>
22. Mohapatra I, Kumar A, Mishra K. A study on awareness and utilization of Mission Indradhanush in an urban slum of Bhubaneswar. *J Family Med Prim Care*. 2018 Nov;7(6):1294–9.
23. Burton A. WHO and UNICEF estimates of national infant immunization coverage: methods and processes [Internet]. Vol. 87, *Bulletin of the World Health Organization*. 2009. p. 535–41. Available from: <http://dx.doi.org/10.2471/blt.08.053819>
24. Nath DC, Patowari B. Modernization of the Indian Decennial Census: An Illustration of Vaccination Coverage for Validity of Estimates [Internet]. Vol. 5, *Journal of Statistics Applications & Probability*. 2016. p. 165–72. Available from: <http://dx.doi.org/10.18576/jsap/030116>
25. Joseph N. A study of the knowledge and attitude towards pulse polio immunization in semi urban areas of South India [Internet]. *Australasian Medical Journal*. 2011. p. 81–6. Available from: <http://dx.doi.org/10.4066/amj.2011.532>
26. Lu P-J, O'Halloran A, Kennedy ED, Williams WW, Kim D, Fiebelkorn AP, et al. Awareness among adults of vaccine-preventable diseases and recommended vaccinations, United States, 2015. *Vaccine*. 2017 May 25;35(23):3104–15.
27. Failure to vaccinate and vaccine failure [Internet]. Vol. 4, *Nature Microbiology*. 2019. p. 725–725. Available from: <http://dx.doi.org/10.1038/s41564-019-0450-5>
28. Naylor R, Dollinger M, Mahat M, Khawaja M. Students as customers versus as active agents: conceptualising the student role in governance and quality assurance [Internet]. *Higher Education Research & Development*. 2020. p. 1–14. Available from: <http://dx.doi.org/10.1080/07294360.2020.1792850>

ANNEXURE: 1

1. Did your local representative have the vaccine and initiated the people to get vaccinated and reminded about its benefits? maybe/no/yes
2. Are you aware about the benefits of getting vaccinated? no/sort of/yes
3. Do you have any iff-effects after getting vaccinated? no/yes

- | | |
|--|------------------------|
| 4. Which hospital do you prefer for getting vaccinated? | Government/Private |
| 5. Have you decided to get a dosage of COVID-19 vaccine? | no/not yet decided/yes |
| 6. Have you tested positive for COVID-19? | no/yes |
| 7. Have you taken any other antidote or vaccine? | maybe/no/yes |
| 8. Rate the government actions in your locality | 1/2/3/4/5 |