

ATTITUDE TOWARDS COVID 19 VACCINE SAFETY IN THE COMMUNITY AND PERCEIVED INTANGIBLE NEEDS AMONG HEALTH CARE WORKERS IN ASSAM: A POPULATION BASED SURVEY

Dr. Antarika Gogoi, MDS*¹ and Dr. Aneesh Ganguly, MDS²

¹Dept of Public Health Dentistry.

²Dept of Oral and Maxillofacial Surgery.

Article Received on
02 July 2020,

Revised on 23 July 2020,
Accepted on 12 Aug. 2020,

DOI: 10.20959/wjpr20209-18433

*Corresponding Author

Dr. Antarika Gogoi

Dr. Ajoy Gogoi Dental
Clinic, Milan Nagar,
Dibrugarh, Assam India.

ABSTRACT

Background: Given the unprecedented times, vaccines are the only hope; but the speeding up of the conventional process of approval of covid-19 vaccine or the overlapping of the phases of clinical trial has raised doubts regarding the credibility of covid-19 vaccine and has led to increased hesitance to participate in the human trials. **Objectives:** The objectives of our study were to assess: a) the knowledge, attitudes of providers regarding administration of vaccine safety, schedules, cold chain storage of vaccines, recording vaccine doses administered, and vaccine management, AEFI reporting, acceptability of responsibility to administer covid-19 vaccine; and b) attitude of public

towards the acceptability and reasons for covid-19 vaccine hesitancy. **Methods:** Descriptive study conducted using questionnaire consisting of 14 questions sent via email. **Results:** 12% of the population demonstrated reluctance towards acceptance of covid-19 vaccine even if it were provided free of cost; and also strongly believed that it should not be made mandatory but rather be a choice of free will. 58.8% believed that vaccines should be provided in public hospitals. **Conclusion:** Awareness programmes would enable practitioners and HCWs to administer vaccines without fear of retaliation or violence in case of any untoward event and help combat misinformation.

KEYWORDS: Vaccine Safety, COVID 19 vaccine, Vaccine hesitance

INTRODUCTION

Healthcare workers (HCWs) have a vital role in informing, advising, and promoting vaccinations in accordance with the most up-to-date scientific evidence as a preventive measure for protection from the risks of contracting the vaccine-preventable diseases and, consequently, of their transmission to other members of staff and their patients, particularly the vulnerable groups. More than half of the world's population was on lockdown to limit the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Scientists are racing against time to provide a proven treatment. Beyond the current outbreak, in the longer term, the development of vaccines against SARS-CoV-2 and their global access are a priority to end the pandemic.^[1] However, the success of this strategy relies on people's acceptability of immunization: what if people do not want the shot? This question is not rhetorical; many experts have warned against a worldwide decline in public trust in immunization and the rise of vaccine hesitancy during the past decade, especially in whole Europe and in France.^[2,3] Vaccination is one of the greatest public health achievements of the 20th century and is one of the 4 horsemen of Public Health. Its success might now be its undoing, however. Around the world, vaccination rates are decreasing at a steady rate. This fall in immunization rate has coincided with an increasingly vocal anti-vaccination movement. Public health now seems more at threat than ever by anti-vaccination campaigns, and the reluctance to vaccinate has been affecting rates of uptake for other vaccines such as that for influenza A H1N1. The increase in anti-vaccination advocacy dovetails with a growing public mistrust of science that in recent years has manifested against genetically modified food, stem cells, and, most recently, climate change. Public decision making related to vaccine acceptance is not driven by scientific or economic evidence alone, but is also driven by a mix of scientific, economic, psychological, sociocultural, and political factors, all of which need to be understood and taken into account by policy and other decision makers.^[4] Vaccines are among the most effective tools available for preventing infectious diseases and their complications and sequelae. High immunization coverage has resulted in drastic declines in vaccine-preventable diseases, particularly in many high- and middle-income countries but unfortunately, public concern about real or perceived adverse events associated with vaccines has increased. This heightened level of concern often results in an increase in the number of people refusing vaccines. Given the unprecedented times, vaccines are the only hope; but the speeding up of the conventional process of approval of covid-19 vaccine or the overlapping of the phases of clinical trial has raised doubts regarding the credibility of covid-19 vaccine and has led to increased hesitance to participate in the human trials. This cross-sectional questionnaire

based study was conducted to assess the attitude towards COVID 19 vaccines and vaccine safety in the community and perceived intangible needs among Health-Care Workers (HCW) in an inter-district study in Assam.

METHODOLOGY

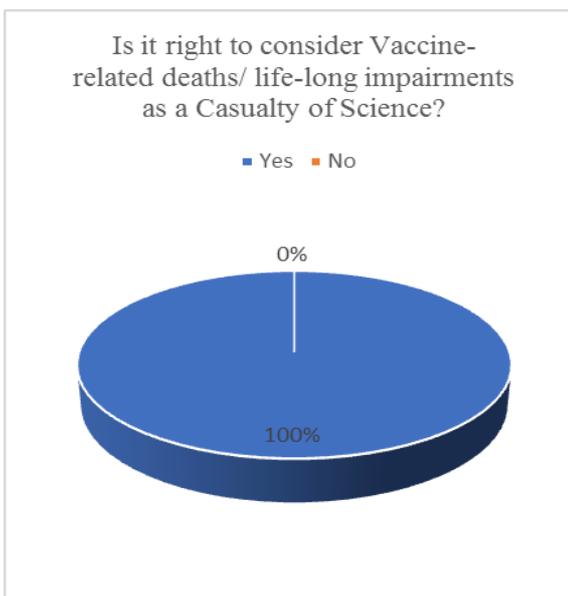
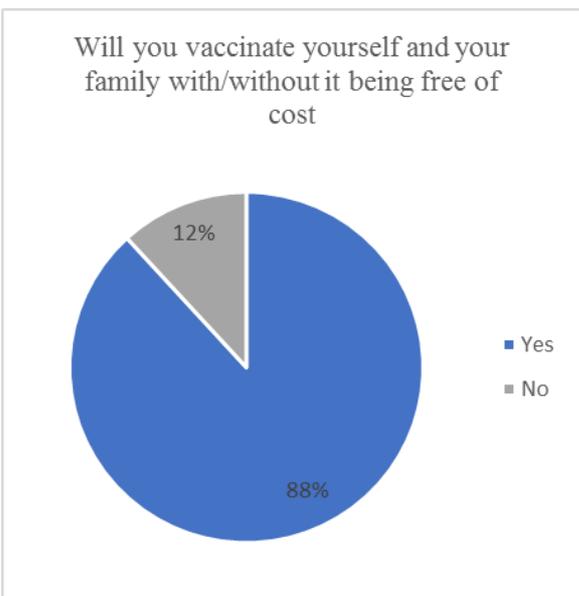
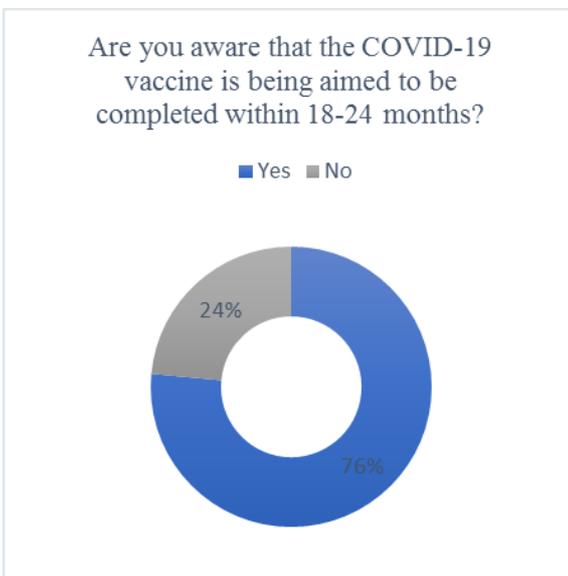
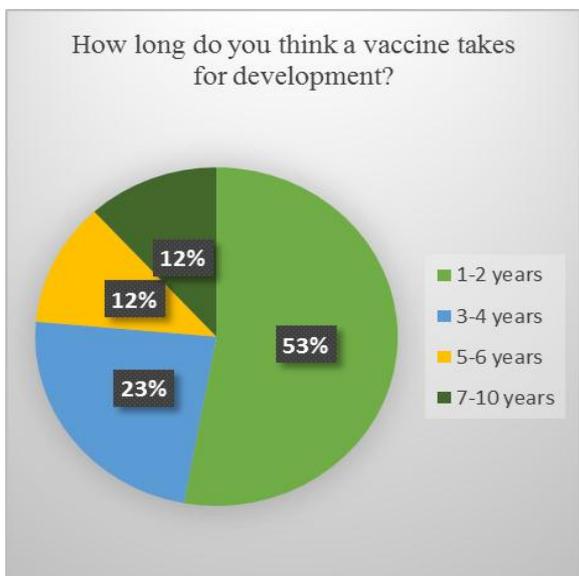
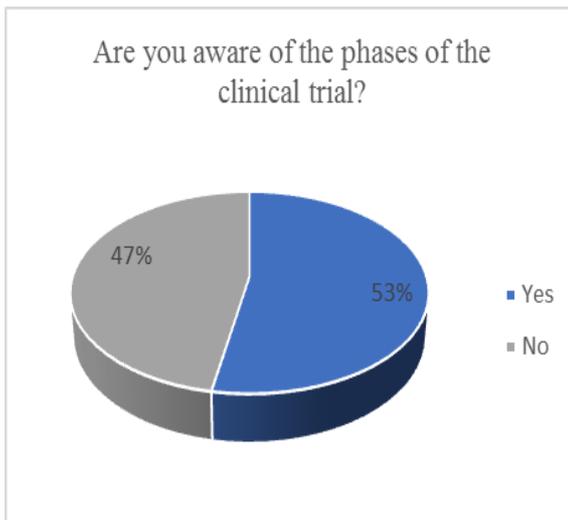
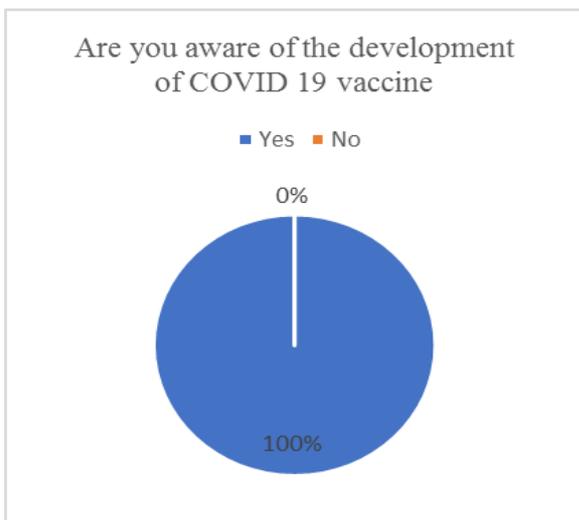
This study is characterized as a quantitative descriptive based on primary data collection through questionnaires that have been sent through email to healthcare workers and the general public to assess their attitude regarding their acceptance of the covid-19 vaccines which are in human trial phase currently at the time of writing this article and are being developed at a pandemic speed. The questionnaire was developed and adapted in accordance to and in reference with Vaccine Hesitancy Survey Questions Related to SAGE Vaccine Hesitancy Matrix.^[5] The study was conducted as a part of population survey; the questionnaire was sent to 2500 participants working in various professions and among the 1390 people who returned the questionnaires, 560 were frontline health workers working in actively treating covid-19 positive patients in various public and private institutions. The response rate was 55.6%. The questionnaire was divided into two parts to be answered by both the general public and health professionals and a part to be completed only by the health workers. The questionnaire consisted of 13 direct, closed ended questions and 1 descriptive open ended question regarding the attitude of public towards doctors, and what precautions should be taken to safeguard the well-being of doctors in case of Adverse Effects Following Immunization (AEFI), given the recent manhandling and violence reported in various parts of India during the sample collection for covid-19 testing. The questionnaire also collected demographic details and socioeconomic data of the participants. The study was conducted for 3 months (May-July,2020) with the news of development of mRNA vaccines underway and the start of human trials with the volunteers. The objectives of our study were to assess: a) the knowledge, attitudes of providers regarding administration of vaccine safety, schedules, cold chain storage of vaccines, recording vaccine doses administered, and vaccine management, AEFI reporting, acceptability of responsibility to administer covid 19 vaccine; and b) attitude of public towards the acceptability and reasons for covid-19 vaccine hesitancy. As time progressed and with the recent uproar against trials first to be conducted in African countries at a larger population scale, the questionnaires were rapidly returned. The returned questionnaires were assessed for completion and the data was converted into tables and charts using Microsoft Excel software.

RESULTS

The main socio-demographic and professional characteristics of the study participants are displayed in Table 1. The mean age was 45.8 years (range 23–66), 56.7% were female, 52% were married, 61.6% had a child, the majority (49.8%) of the HCW were nurses, and among them 16% worked in pediatric/neonatal wards, and the mean length of practice was 10.9 (1–41) years. All the participants were aware of the development of the covid-19 vaccine but only 53% were aware of the phases of the clinical trial involved in the conventional process of vaccine development and approval. Only 12% understood that vaccine development is a long process and takes several years to test and develop completely; while most participants (53%) thought that it took 1-2 years. 24% of the participants were unaware that the vaccine against covid-19 was being developed in record time of 18-24 months. 12% of all participants reported to be unwilling to vaccinate themselves and their family even if vaccines were provided free of cost and all agreed that the deaths/life-long impairments caused by vaccines should be considered as a casualty of science. 12% did not agree that covid-19 vaccines must be made mandatory but rather free of choice as herd immunity is greatly in talks.

41% of the study participants were unaware of the adverse effects following immunization (AEFI) and 32% of the HCWs were unaware of the vaccine safety handbook by World Health Organisation. However, 17.6% were willing to participate in mass vaccination campaigns and 33% were aware that National Regulatory Authority is the body responsible and acts as a guarantor for safeguarding vaccine safety and quality being administered to the Indian population.

The results of the present survey showed that the HCWs had an average level of knowledge, since only 44.1% were aware and knowledgeable about all vaccines recommended in the National Immunization schedule. The vast majority of the HCWs stated that they had obtained information about COVID-19 vaccines (81.5%). The preferred method for acquiring information was the internet (38.6%), followed by educational activities (36.9%), scientific journals (31.3%), colleagues (27.4%), and professional associations (24.7%). Moreover, 58% of HCWs reported the need for additional information about vaccinations in general.



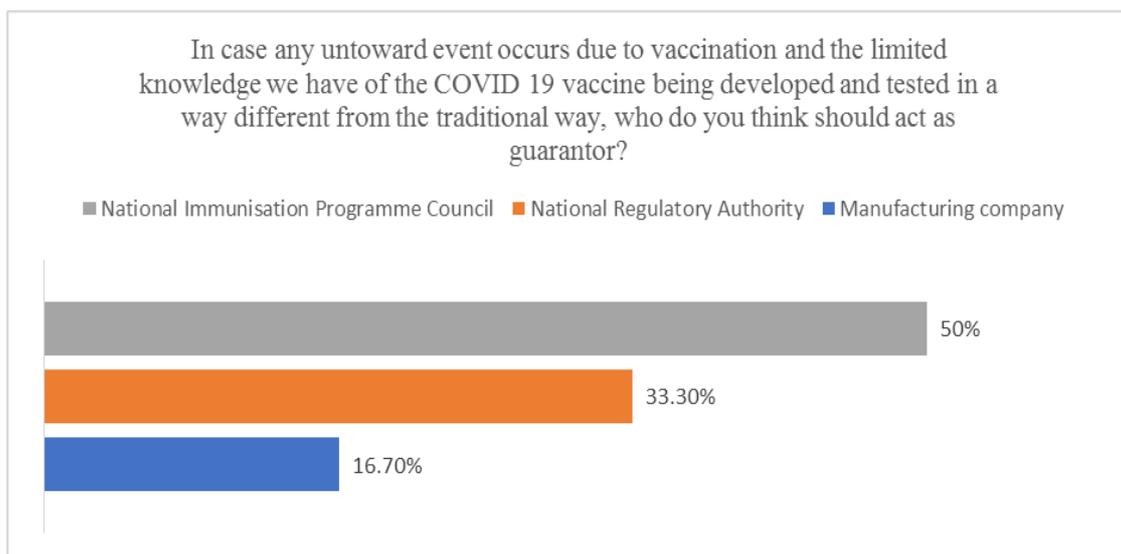
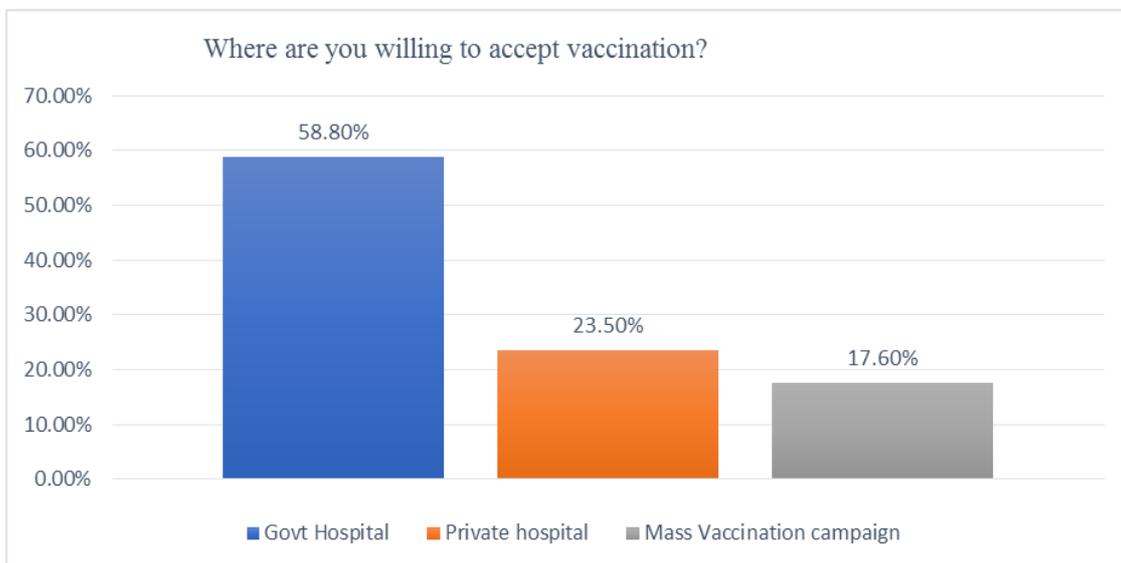
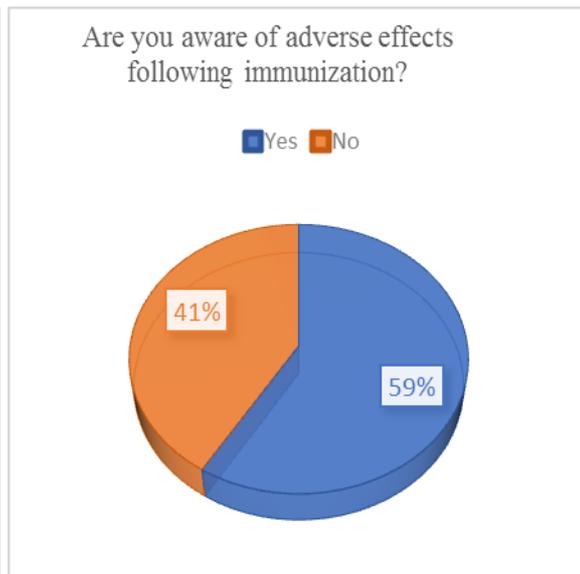
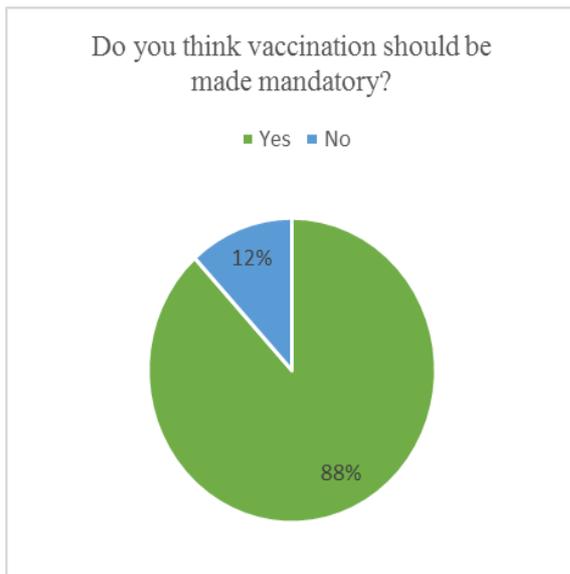


Table 1: Participants' socio-demographic and professional characteristics.

Characteristics	N	%
Gender		
Female	868	61.7
Male	532	38.3
Age, years	45.8 ± 9.7	(23–66) *
< 36	221	15.9
36–45	422	30.4
> 45	747	53.7
Marital status		
Married	764	55
Unmarried/separated/ divorced/widowed	626	45
Marital status		
Married	764	55
Unmarried/separated/ divorced/widowed	626	45
Marital status		
Married	764	55
Unmarried/separated/ divorced/widowed	626	45
Marital status		
Married	764	55
Unmarried/separated/ divorced/widowed	626	45
Having a child		
No	492	35.4
Yes	898	64.6
Profession		
Nurses	692	49.8
Physicians	347	25
Other	351	25.2
Length of practice, years	10.9 ± 9.2 (1–41) *	
Workplace among HCWs (1039)		
Medical wards	580	55.8
Pediatric/neonatal wards	166	16
Emergency room	151	14.5
Intensive care unit	142	13.7
Workplace among HCWs (1039)		
Medical wards	580	55.8
Pediatric/neonatal wards	166	16
Emergency room	151	14.5
Intensive care unit	142	13.7

* Mean ± standard deviation (range)

DISCUSSION

Although the global rate of vaccinations are modest, much has been discussed about the vaccine hesitancy, backlash and politicization of COVID-19 vaccine. As different developed countries race to produce vaccines and gain the trust of developing countries to conduct their clinical trials, many educated people have raised the concerns towards human trials in the under- and rapidly developed COVID 19 vaccine, as being treated as lab rats and have expressed their fear of adverse effects following immunization due to the time in which the authorities like FDA has approved the vaccines to run the trial phase. Many debates are still continuing as to who should get the first doses of the vaccine, once it has been developed and available commercially. It is well known that HCWs have a vital role in vaccinations, and they should have adequate knowledge in order to correctly inform the population and the most fragile and susceptible patients. Indeed, several recent investigations among different groups of individuals conducted in the same geographic area have underlined that HCWs are the most important and trusted source of information on vaccine-preventable infectious diseases.^[6-9] The participants of the study had acquired knowledge about the covid-19 vaccine mostly from the internet, hence awareness was reliable in comparison to the study conducted by Gargano^[10] in which the authors had reported that the greatest barrier to vaccinating children with routine immunizations, reported by pediatricians was lack of parental awareness of their importance. The response rate in this study 55.6% which was quite low in comparison to other studies conducted by Thacker N^[8] and Choudhury P.^[11] to assess polio vaccinations; pneumococcal, Haemophilus influenzae type b and rotavirus vaccines by Gargano LM^[12], immunization service providers by Hagan.^[13] The main reason for this low rate of response could be due to mode of delivery of the questionnaires. 53% of the study participants believed that it took only 1-2 years for developing vaccines which in reality takes 15-20 years in phase 4 for adequate surveillance for adverse events. 12% of the population demonstrated reluctance towards acceptance of covid-19 vaccine even if it were provided free of cost; and also strongly believed that it should not be made mandatory but rather be a choice of free will. 58.8% believed that vaccines should be provided in public hospitals as they believed that the HCW would be more experienced and knowledgeable and also would cost less in comparison to private hospitals. Hence, it can be concluded that the vaccine hesitancy towards covid-19 vaccine exists in this part of the country and future interventions will be required to prevent missed opportunities to vaccinate and also to address the misconceptions about vaccinations in general.

The main limitations of the study was that the results could be compared to other vaccines like polio, pneumococcal vaccines and not to covid-19 vaccine due to the novelty of the disease, but the present study leaves a door for further studies being conducted in other regions. The study was conducted in an online survey, as it was not possible to conduct face to face interviews due to social distancing and constraint of time to meet HCW in person.

CONCLUSION

Awareness programmes must be conducted by the Govt. of India by using various media platforms and also take an initiative to host talk shows on radio and TV programmes by experts to reach the remote parts of the country to eliminate the misconceptions about vaccinations. This would provide better acceptance of the covid19 vaccine when it is issued for administration in a greater scale to prevent contracting the disease. Factors like case reporting and AEFI reporting must be held accountable and HCWs must be provided adequate knowledge about handling and reporting adverse events. This would enable practitioners and HCWs to administer vaccines without fear of retaliation or violence in case of any untoward event.

REFERENCES

1. Yamey G, Scherhoff M, Hatchett R, Pate M, Zhao F, McDade KK. ensuring global access to COVID-19 vaccines. *Lancet*, 2020; 395: 1405–06.
2. Shetty P. Experts concerned about vaccination backlash. *Lancet*, 2010; 375: 970–71.
3. Larson HJ, de Figueiredo A, Xiaohong Z, et al. The state of vaccine confidence 2016: global insights through a 67-country survey. *EBioMedicine*, 2016; 12: 295–301.
4. Larson HJ, Jarrett C, Eckersberger E, Smith DM, Paterson P. Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: a systematic review of published literature, 2007-2012. *Vaccine*, 2014 Apr 17; 32(19): 2150-9.
5. Vaccine hesitancy survey Questions related 53% of the to SAGE vaccine Hesitancy Matrix
https://www.who.int/immunization/programmes_systems/Survey_Questions_Hesitancy.pdf?ua=1
6. Bertoldo G, Pesce A, Pepe A, Pelullo CP, Di Giuseppe G. Collaborative Working Group. Seasonal influenza: Knowledge, attitude and vaccine uptake among adults with chronic conditions in Italy. *PLoS ONE*, 2019; 14: e0215978.

7. Napolitano, F.; D'Alessandro, A.; Angelillo, I.F. Investigating Italian parents' vaccine hesitancy: A cross-sectional survey. *Hum. Vacc. Immunother*, 2018; 14: 1558–1565.
8. Thacker N, Choudhury P, Gargano LM, Weiss PS, Pazol K, Bahl S, Jafari HS, Arora M, Dubey AP, Vashishtha VM, Agarwal R, Kumar A, Orenstein WA, Omer SB, Hughes JM. Comparison of attitudes about polio, polio immunization, and barriers to polio eradication between primary health center physicians and private pediatricians in India. *Int J Infect Dis.*, 2012 Jun; 16(6): e417-23. doi: 10.1016/j.ijid.2012.02.002. Epub 2012 Mar 30. PMID: 22464934
9. Gargano LM, Thacker N, Choudhury P, Weiss PS, Pazol K, Bahl S, et al. Predictors of administration and attitudes about pneumococcal, Haemophilus influenzae type b and rotavirus vaccines among pediatricians in India: a national survey. *Vaccine*, 2012; 30: 3541–5. doi:10.1016/j.vaccine.2012.03.064.
10. Gargano LM, Thacker N, Choudhury Attitudes of paediatricians and primary health centre physicians in India concerning routine immunization, barriers to vaccination, and missed opportunities to vaccinate, 2012 Feb; 31(2): e37-42. doi: 10.1097/INF.0b013e3182433bb3.
11. Choudhury P, Thacker N, Gargano LM, Weiss PS, Vashishtha VM, Amladi T, Pazol K, Orenstein WA, Omer SB, Hughes Attitudes and perceptions of private pediatricians regarding polio immunization in India. *JM. Vaccine*, 2011 Oct 26; 29(46): 8317-22. doi: 10.1016/j.vaccine.2011.08.099. Epub 2011 Sep 3. PMID: 21893150
12. Gargano LM, Thacker N, Choudhury P, Weiss PS, Pazol K, Bahl S, Jafari HS, Arora M, Orenstein WA, Hughes JM, Omer SB. Predictors of administration and attitudes about pneumococcal, Haemophilus influenzae type b and rotavirus vaccines among pediatricians in India: a national survey. *Vaccine*, 2012 May 21; 30(24): 3541-5. doi: 10.1016/j.vaccine.2012.03.064. Epub 2012 Apr 1. PMID: 22475859
13. Hagan J, Knowledge, Attitudes, and Practices of Private Sector Immunization Service Providers in Gujarat, India. Available at https://www.who.int/immunization/sage/meetings/2017/april/4_Hagan_et_al._Knowledge_Attitudes_Practices_Private_Sector_Immunization_Service_Providers_Gujarat.pdf