(International Print/Online Journal)

SJIF IMPACT FACTOR: 5.565
PUBMED-National Library of Medicine ID-101739732

ISSN (Print): 2209-2870
ISSN (Online): 2209-2862

International Journal of Medical Science and Current Research (IJMSCR)
Available online at: www.ijmscr.com
Volume 5, Issue 4 , Page No: 366-374
July-August 2022

IJMSCR

Effect Of Public Counselling In Addressing The Barriers For Covid-19 Vaccine

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Type of Publication: Original Research Paper
Conflicts of Interest: Nil

Abstract

Coronavirus disease 2019 (COVID-19) pandemic has affected more than 200 countries causing a devastating influence on world health and economics since its emergence. The accelerated development of the COVID-19 vaccine is vital, and early data suggests that it is both, safe and efficacious. Vaccination program against COVID-19 seems promising in providing protection against the virus. In addition to the efficacy of the vaccines, their uptake rate is also important to the effectiveness of preventing the spread of COVID-19 in future, as it needs to achieve certain levels to create herd immunity among the population. The objective of this study was the Effect of public counselling in addressing the barriers for Covid-19 vaccine acceptance. Our study was a cross-sectional study that was conducted by analyzing the data collected by a self-administered questionnaire that was shared online and directly across Southern Kerala in January 2021 – June 2021. The survey questionnaire evaluate the impact of counselling for vaccine hesistancy. Regarding impact of counseling provided to 86 participants who demonstrated their unwillingness for COVID-19 vaccine uptake, we were able to transform 76 (88%) participants out of 86 and made them willing to uptake the vaccine.

Keywords: COVID-19 Vaccine, Acceptance, Kerala, Hesistancy, Counselling

Introduction

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by SARS-CoV-2. Since its emergence it has resulted in a devastating influence on world health and economics [(1)].Despite implementation of several NPI to slow down the spread, COVID-19 has resurfaced again as second wave pandemic. As a result, the development of SARS-CoV-2 vaccination became the only way to stop the pandemic as vaccination has the potential to produce herd immunity in population, lowering disease incidence and thus lessening the disease's social and economic toll [(2)].In addition to the efficacy of the vaccines, their uptake rate is also important for a successful vaccination programme for preventing the spread of COVID-19.

COVID- 19 Vaccines

Vaccines are effective intervention that can reduce the high burden of disease globally. A vaccine has the power to generate herd immunity in the communities, which will reduce the incidence of disease, block transmission and reduce the social and economic burden of the disease. Vaccine stimulates the body to produce specific antibodies, with anamnestic response when the body is exposed to this pathogen again [(3)].

COVID-19 Vaccine greatly reduce the risk of infection by training the immune system to recognize and fight pathogens such as viruses and bacteria. Vaccine involves generating responses to all or part of the spike protein that is unique to the virus that

causes COVID- 19. When a person receives the vaccine, it will trigger an immune response. If the person is infected by the virus later on, the immune system recognizes the viruses and because it is already prepare to attack the viruses and protects the person from COVID-19[4].To successfully deploy a safe and effective vaccination, it is vital to identify barriers to vaccine uptake. The vaccine acceptance can be enhanced by addressing the barriers.

Barriers In Acceptance Of COVID-19 Vaccine

Vaccine Hesitancy

Vaccines have been a successful measure of disease prevention for decades. However, vaccine hesitancy and refusal are significant concerns globally, prompting the World Health Organization (WHO) to declare this uncertainty among the top 10 health threats in 2019[5]. Based on the Strategic Advisory Group of Experts on Immunization (SAGE), vaccine hesitancy is the term used to describe: "delay in acceptance or refusal of vaccination despite availability of vaccination services".[6] Vaccine hesitancy poses threats to the success of the COVID-19 vaccination drive. The acceptance and hesitancy are largely determined by people's knowledge, attitude, and practices and concerns regarding the safety, efficacy, risks and benefits associated with COVID-19 vaccination and participation in the COVID-19 vaccination program is also dependent on local socio-demographic and cultural correlates.The vaccine hesitancy could lead to refusal or delay of vaccination, may eventually cause a reduction in coverage rate of the vaccine and affect its effectiveness. Unfortunately, a significant proportion of eligible candidates are not turning up to get their dose of vaccine, which indicates hesitancy amongst people to participate in the COVID-19 vaccination program. The complex nature of motives behind vaccine hesitancy can be analyzed using the epidemiologic triad of environment, agent and the host factors. Environment factors include public health policies, social factors and the messages spread by the media. The agent (vaccine and disease) factors involve the perception of vaccine safety and effectiveness, besides the perceived susceptibility to the disease. The host factors are dependent on knowledge, previous experience, educational and income levels [6].Governments, public health officials and advocacy groups must be prepared to address hesitancy and build vaccine literacy so that the public will accept immunization when appropriate[7]. While many interventions have been tested to address one or more of the barriers to vaccine acceptance, three points must be emphasized. First, vaccine acceptance does not mean hesitancy is not present. Secondly, tailored multipronged strategies are more effective than single interventions across a broad population. Thirdly, what must not be lost in the focus on strategies to increase vaccine acceptance, is the importance of respect with empathy for different perspectives on immunization whether the conversation takes place in a public debate, one on one in a clinic, at a private social event or online. This overview provides a simplified mind map for addressing vaccine hesitancy in its many incarnations- detection, diagnosis and tailored intervention – in order to improve vaccine acceptance at the population and individual patient levels[8].

COVID-19 vaccines are now available to the general public. Several COVID-19 vaccines have been developed as a consequence of collaboration between scientists and pharmaceutical corporations. To promote the uptake of vaccine among the population, massive immunization programmes have been in effect. However, certain misconceptions and myths related to COVID-19 are spreading through the social media. Misconceptions and misinformation can act as major roadblocks in attaining vaccine acceptance among the population. People's self- reported willingness to get vaccinated against COVID-19 has been proven to be negatively affected by this misinformation [9, 10].

Methodology

This is a Cross sectional study conducted in Southern Kerala. 96% of eligible population vaccinated with a single dose till March 21. 82% of eligible population vaccinated with double dose till March 21. The study duration was Six months (January2021-June 2021). The study was conducted in 525 people after getting approval from Institutional Review Board of Nazareth College of Pharmacy. The inclusion criteria was people above age category 18. The exclusion criteria's ere people below age category 18 and pregnant and lactating women. Data was collected using a pre- designed structured questionnaire which has been validated. Participants were asked to fill a prepared Google form. The questionnaire was

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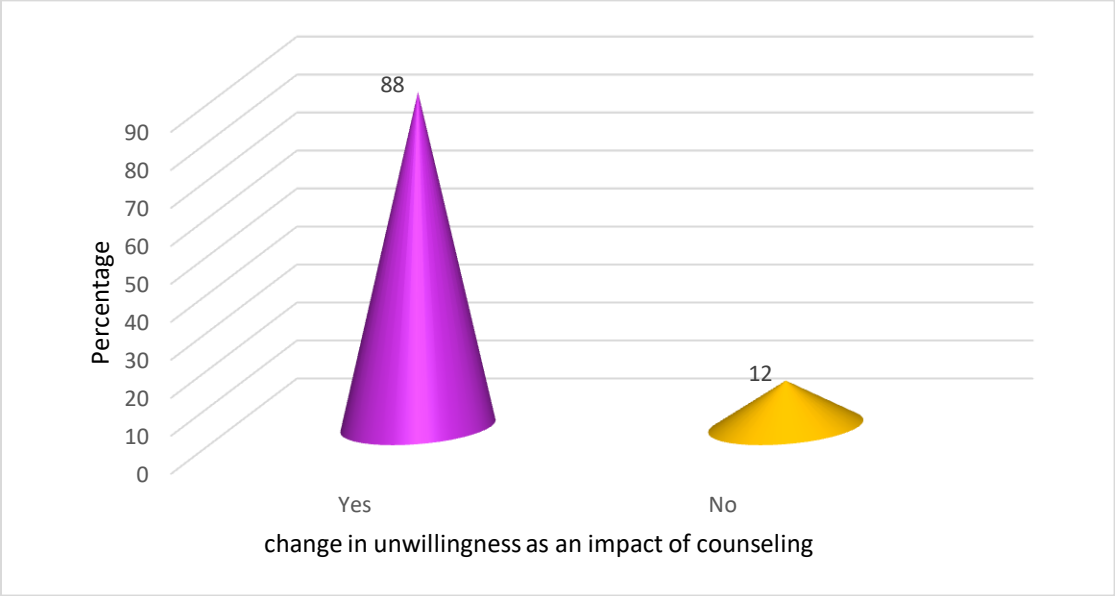
designed to assess knowledge and acceptance of COVID-19 vaccine. The participants who expressed unwillingness to get vaccinated were counseled based on their reason for hesistance and then the impact of counselling was also determined. The data analysis was done using Microsoft excel-2010 version and results were presented in tabular and graphical form as Frequency and Percentage.

Results

Figure 1: Distribution of data on change in attitude among unwilling participants about COVID-19 vaccine acceptance as an impact of counseling



According to the illustration, as an impact of patient counseling, Out of 86subjects who were previously not willing to take the vaccine, the 76(88%) subject decided to take the vaccine. Despite of counseling 10 subjects still expressed unwillingness.

Table 1: Distribution of data on assessment of knowledge about vaccine mechanism in providing immunity

Sl. No:	Response	Frequency	Percentage
1	Yes	86	100
2	No	0	0
	Total	86	100

According to the study, as the impact of counseling the entire study population, who were not previously willing to take the vaccine, understood how the vaccine works by providing immune response.

Table 2: Distribution of data about impact of counseling in addressing unforeseen future adverse effects concerns

Sl.No:	Response	Frequency	Percentage
1	Yes	61	71

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2	No	25	29
	Total	86	100

The graphical data shows that the counseling was effective in addressing the concern about unforeseen future adverse effect of vaccine of 29%, while 71% still had concerns about unforeseen ADR.

Table 3: Distribution of data on impact of counseling in changing misconceptions about use of hygiene measures after vaccination

Sl.No:	Response	Frequency	Percentage
1	Yes	78	90.7
2	No	8	9.3
	Total	86	100

The above graph shows that, Out of 82 study subject who were previously not willing to use hygiene measures after vaccination 90.7% (78) will continue the use of hygiene measures after vaccination while remaining 9.3%(8)are against the use of hygiene measures.

Table 4: Distribution of data on impact of counseling session in updating knowledge about COVID-19 vaccine

Sl.No:	Response	Frequency	Percentage
1	Yes	80	93
2	No	6	7
	Total	86	100

The graph reveals that out of 86 subjects, the counseling section was effective in updating the knowledge about Covid-19 vaccine of 93% of population (80). While of 7% (6) responded that it was ineffective.

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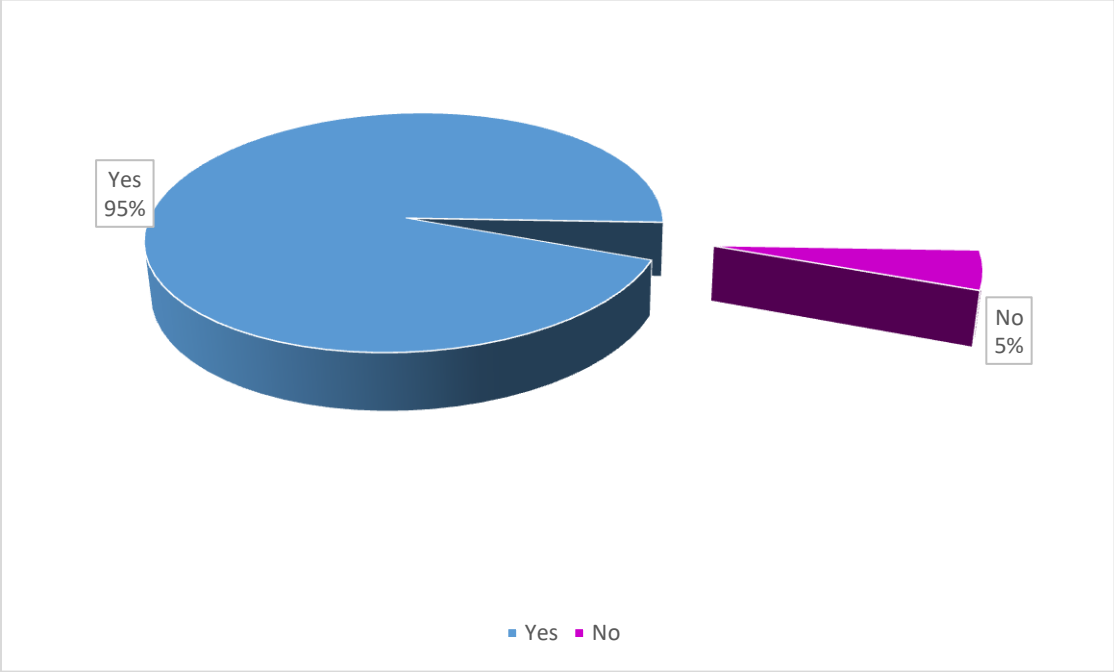
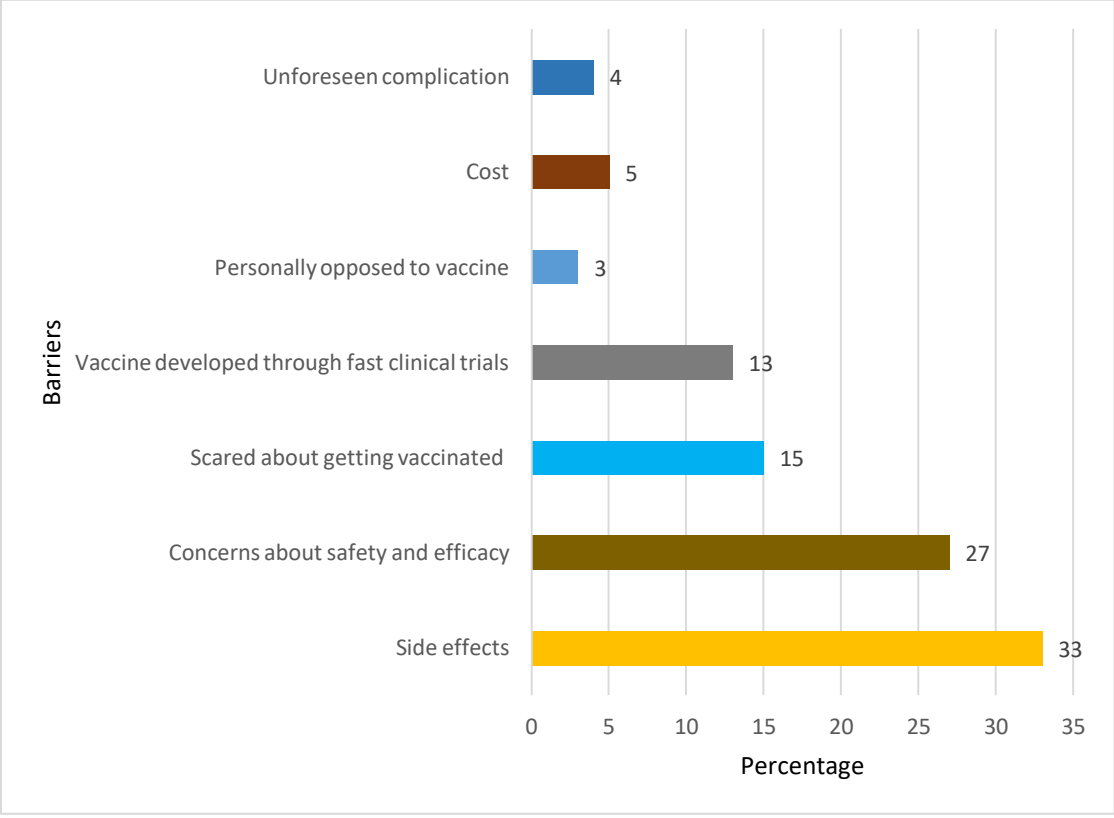
Figure 2: Distribution of data on impact of counselling in removing misconceptions regarding COVID-19 vaccine administration



The graph reveals that, Out of 86 subjects the counseling was effective in removing the misconceptions of 95 %(82), while for 5 %(4), it was ineffective.

Intervention

Figure 3: Distribution of data on impact of counseling session in removing the barriers



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The graph demonstrates that, the counseling session was effective in removing misconceptions about the various barriers. The study successfully address the concerns about side effects 33%(50), concerns about safety and efficacy 27%(40), scared about getting vaccinated15%(22), vaccine developed through fast clinical trials13%(19), personally opposed to vaccine3%(5), cost 5%(8) and unforeseen complications 4% (6)of the total study population.

Table 5: Distribution of data on impact of counseling in addressing each misconception

Sl.No:	Response	Frequency	Percentage
1	Concern about fake COVID-19 vaccine	31	33
2	Being young and healthy,so don't need vaccine	15	16
3	Vaccine affecting your genetic constitution	8	9
4	Infertility in women	1	1
5	Already affected by COVID-19,so need to take vaccine	3	3
6	Concerns of catching COVID-19 from vaccine	7	8
7	No risk of getting COVID-19	6	6
8	Delaying vaccination until further study about safety and adverse effects are published	10	11
9	Exacerbation of present medical condition	12	13
10	Not taking vaccine, due to religious/cultural beliefs	0	0
	Total	93	100

The table illustrate that, the counseling session was helpful in changing the misconception of COVID-19 vaccine. Out of 86 subjects, the counseling helped in removing the concerns about fake COVID-19 vaccine 33% of population. 16% of subjects were not willing to take vaccine because of being young and healthy. The counseling also effectively removed their misconceptions, 9% of subjects were not willing to take vaccine because of the vaccine altering the genetic constitution, it was also successfully addressed. 1% believed that the vaccine may induce infertility in women; this was also addressed during their counseling. 3%of subjects were not taking the vaccine because, they think that there was no need of

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vaccine, if they are already affected covid-19, their misconception was also removed. 8% & 6% of subjects had concerns about catching Covid-19 from vaccine and No risk of getting COVID-19 ,it was also successfully addressed. 11% & 13%of subjects were not willing to take vaccine because they are waiting for more publications on adverse effects and safety and exacerbation of present medical condition, it was also successfully addressed.

Discussion

Regarding impact of counselling provided to 86 participants who demonstrated their unwillingness for COVID-19 vaccine uptake, we were able to transform 76 (88%) participants out of 86 and made them willing to uptake the vaccine.

Regarding various reasons for hesitancy and impact of counselling in removing those concerns, according to a study conducted on "COVID-19 vaccine acceptance and hesitancy in low and middle income countries, the most commonly given reasons are the misconception about getting disease from the vaccine, not concerned about getting seriously ill, doesn't think vaccines are effective, doesn't think coronavirus outbreak is as serious as people say, doesn't like needles, allergic to vaccines, won't have time to get vaccinated, mentions a conspiracy theory, and other reasons. Another study conducted by Khan S *et.al;* titled "Belief and barriers associated with vaccination among general population in India" reported that 64.4% of total study population had concerns about vaccine side effects , 20% don't believe in the effectiveness of vaccine in curbing the pandemic,12.5 %believe that that the entire vaccine campaign is a conspiracy ,10.8% believe that they need not take vaccination as they are following preventive measures seriously 7.4% consider that they need not take vaccine as they are young and healthy,8.3% is afraid of injections and needles,42.5% had some other concerns.[(1)] In another study on addressing barrier to vaccine acceptance: an overview by MacDonaline N E, Butler R and Dude E concluded that vaccine acceptance does not mean hesitancy is not present. Overcoming hesitancy require detection, diagnosis and tailored intervention as there is no simple strategy that can address all of the barrier to vaccine acceptance. [(12)] Machingaidze S and Wiysonge C S did a study to understand COVID-19 vaccine acceptance and hesitancy. In which they found out that the reason for COVID-19 vaccine acceptance and hesitancy remain complex.[(13)] Emergence of new variance, lack of transparency of government reports and drawbacks in ADR reporting are increasing people concerns about vaccine are few. According to our study results the barriers associated with acceptance of COVID-19 vaccination were studied using a single question having multiple responses. Among the study population, 36% were concerned about the COVID-19 vaccine side effects and 30% were concerned about the safety and efficacy of vaccine. However 12% of respondents were scared of getting vaccinated while 11% of respondents were concerned about vaccine developed through fast clinical trials and 1% were personally opposed to vaccine whereas 7% of individuals were concerned about the cost and 3% were concerned about future adverse effects and as a impact of counselling. The counselling session was helpful in changing the various barriers. The study successfully addressed the concerns about side effects in 33%(50), concerns about safety and efficacy in 27%(40), scared about getting vaccinated in 15%(22), vaccine developed through fast clinical trials in 13%(19), personally opposed to vaccine in 3%(5), cost in 5% (8), and concerns on unforeseen complication in rest 4% (6) of the total study population.

Regarding various misconceptions causing refusal for COVID-19 vaccination and impact of counselling to address those misconceptions, it was found that several studies and literatures have analyzed the myths and misconceptions related to COVID-19 vaccine. . Among the study population, majority of the respondents (56.6%) are planning to postpone vaccination until further studies are published,20% had concern about fake COVID -19 vaccine. 8%, 3.4%, 2% were not willing to take vaccine because of being young and healthy, scared of vaccine affecting their genetic constitution and vaccine causing infertility in women, respectively.4.9% decided not to take vaccine because they were previously affected by COVID-19. 0.8% and 2% were not taking vaccine because they have concerns about getting COVID-19 after vaccination and had no risk for getting COVID-19 respectively. 3% were not willing to take vaccine as they were scared of vaccine induced exacerbation of present medical condition. It was found that cultural/religious belief were not a misconception in taking vaccination. According to this study the

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counselling session was helpful in changing the misconceptions regarding COVID-19 vaccine. Out of 86 subjects, the counselling helped in removing the concerns about fake COVID-19 vaccine in 33% of population. 16% of subjects were not willing to take vaccine because of being young and healthy. The counselling also effectively removed their misconceptions, 9% of subjects were not willing to take vaccine because of the vaccine altering the genetic constitution and it was also successfully addressed. 1% believed that the vaccine may induce infertility in women; this was also addressed during their counselling. 3%of subjects were not taking the vaccine because, they think that there was no need of vaccine, if they are already affected covid-19, their misconception was also removed. 8%&6% of subjects had concerns about catching Covid-19 from vaccine and No risk of getting COVID-19, it was also successfully addressed. 11% & 13%of subjects were not willing to take vaccine because they are waiting for more publications on adverse effects and safety and exacerbation of present medical condition, it was also successfully addressed.

After counselling we examined the response of those who expressed hesitation. The impact of counselling was remarkable. We were able to transform the misconceptions of majority of the participants.

Regarding assessment of knowledge about vaccine mechanism of action, in this study we imparted information about mechanism of vaccines and their role in providing herd immunity. We also evaluated the number of people who benefited from our study. This study found that among the participants who expressed unwillingness to vaccination, 100% realized the mechanism of COVID-19 vaccine as an impact of our counselling. This pandemic can be effectively fought and subsequent waves of infection can be prevented with very high vaccine coverage, the disease will eventually eradicated.

Regarding impact of counselling in updating subjects knowledge about COVID-19 vaccine , the response showed that out of 86 subjects 80(93%) gave positive feedback to the counselling and only 6 (7%) responded that it was ineffective

Limitation

The responses were collected from the individuals of southern districts of Kerala. The responses from other parts of the state could be analyzed if the study would have been conducted across Kerala.

We collected the data only during the first phase of the vaccination drive, but the prevailing situation in Kerala might have caused some changes in the perceptions regarding COVID-19 vaccination among the general public.

Conclusion

This study found that the concerns regarding the vaccine side effects acted as a key barrier to vaccine acceptance. Through this study, we were able to address the barriers that contributed to vaccine hesitancy and our counselling transformed the unfavorable perceptions of the majority of those who expressed hesitancy regarding vaccine uptake. Regarding impact of counseling provided to 86 participants who demonstrated their unwillingness for COVID-19 vaccine uptake, we were able to transform 76 (88%) participants out of 86 and made them willing to uptake the vaccine. Moreover, we expect that the finding of this study could help the government, public health agencies, and awareness organizations tackle vaccine hesitancy and to enhance acceptance of the COVID-19 Vaccine.

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