



An Awareness and Acceptance of the COVID-19 Vaccine among Foreign Students in Higher Institutions in China

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ABSTRACT

The COVID-19 vaccination drive has made much buzz around the world. The vaccination is been discussed around the global for a long time and lot of rumors and fake information spreads all over the social media. The situation has created many fears and uncertainties among people which is affecting the vaccination drive in many countries. This study investigates the approach Chinese universities used in the vaccination drive for international students and how they respond to this vaccination drive. The study used a mixed-method approach to collect data from the respondents. Both their quantitative responses and their narratives were considered as the base for the analysis. The results of this study found that Chinese higher educational institutions approach for international students was very formal. On one end, the administration was able to carry out the vaccination drive successfully; the approach was failed to eliminate the fears and nervousness of the international students regarding vaccines. Furthermore, while fear and nervousness are found among the international students regarding the vaccination, most of the students did acknowledge the benefits of taking the vaccine for their health and as a gateway to move around or outside the country. The study highlights a crucial administrative approach from the Chinese higher educational institutions regarding an ongoing phenomenon. The results of this study can be used for administrative purposes so that the students' feedback should be considered while implanting some policy for their satisfaction and better results.

Keywords: *International students, COVID-19 vaccination, Chinese higher education, Students fears*

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INTRODUCTION

Background of the Study

The COVID-19 pandemic and its impact globally have led to many countries developing a vaccine to help curb the spread of the disease and ensure that businesses and other public affairs return to their normalcy (Danabal et al., 2021). Providing a vaccine for the COVID-19 will help reduce the risk associated with the virus. There should be room for the vaccine to get to the people without stress; the cost of the vaccine should be affordable and equally made available at any point in time in all the countries (Lucero-Prisno, 2021). The vaccine protects the communities rather than individuals and saves millions of lives. A vaccine can also help prepare the body's immune system to fight against the virus (Pandey et al. 2020). However, the period given in the development of the COVID-19 vaccine and the awareness created on the inoculation of the vaccine has led to the argument as to whether to accept or reject the inoculation of the COVID-19 vaccine (Lazarus et al., 2021).

Some factors could lead to the acceptance of the vaccine, which according to Cerda and Garcia (2021), includes people's trust in the government and the increased importance of social media. Communication from the authorities of a country also plays an important role in informing people on how vaccination could help prevent people from contracting the disease (Qiao et al., 2020). Through its medical experts, the government use scientific information to correct the misinformation spread on social media and give people accurate information on the benefits and risks of the COVID-19 vaccination (Henderson et al., 2020). As per the authors, people trust the government and its health agencies trust in the public health measures, and government could act as a catalyst to its citizens in accepting preventive measures against the COVID-19.

Though the researchers identified some positive feedback, much negative feedback is presented about the vaccination (Yang et al. 2021). A global survey which consisted of 19 countries revealed that people current levels of eagerness to take a COVID-19 vaccine are lower than the requirement to be regarded as adequate to the people's immune rate in a given area (Lazarus et al., 2021). As per the authors, convincing people about the vaccine should be appropriately

explained why they should trust it. There is lot of fear and uncertainty among the people about the vaccinations, so the vaccination drive should considers people uncertainty and should give them awareness about the health benefits of taking COVID-19 vaccination (El-Elimat et al., 2021; Wong et al., 2021).

Purpose of the Study

Most of the COVID-19 vaccines have been developed in recent times to help reduce the spread of the disease. A lot of rumors and wrong information spreads on different social media platforms. Over-reliance on the media might have played a role in the uncertainty surrounding the COVID-19 vaccine and its acceptance by the public. This uncertainty leads to people resistance from taking the COVID-19 vaccines. The administration has to take care of these things to give awareness about the vaccination, so that they can accept it without fear and resistance. The study, therefore, aims to highlight the Chinese universities approach towards international students in the vaccinations drive. Also, to analyze how effective was that campaign in encouraging students to take the vaccination and reduces their fear and uncertainties. Therefore, the study looks into the following objectives:

1. To investigate the awareness created by the institutions about the COVID-19 vaccine for international students in China.
2. To investigate the level of acceptance/rejection of the COVID-19 vaccine by international students in higher institutions in China.

To meet the objectives of this study the researchers sets following questions:

1. How awareness about the COVID-19 vaccine was created by the Chinese higher education institutes for international students in China?
2. How international students in China responded to vaccination drive of COVID-19?

REVIEW OF RELATED LITERATURE

The literature is divided into two subsections. The first section highlights the behavior of the people about the vaccination in general in the past. The second section highlights the key studies done on the COVID-19 vaccine and how people are responding in recent years.

People general attitude towards vaccination

Historically, many researchers have paid attention to some people's attitudes about the safety and efficacy of vaccines and how some people respond to vaccination schedules (Largent, 2012; Larson et al., 2014; Navin, 2016). Vaccination has been a matter of concern for many people in the past. One survey carried out in Canada revealed that about 80% of parents accept the idea of vaccinating their children. This survey outcome has considered good because for a country or nation to be protected against a disease, there should be a higher rate of people who agree to vaccines (Dube et al., 2017).

Sarathchandra et al. (2018) surveyed measuring vaccine acceptance among the general people in the United States. The results suggested that public views of vaccines have been influenced by anti-vaccination misinformation and politicized discourse in recent years. Similarly, research by K.A. Ryan et al. (2019) on the willingness of the university students in the USA to promote the influenza vaccine taking highlighted the following barriers: decision making, less knowledge about influenza, and the vaccination not being a priority rank among those factors that mitigate against the students wanting to be vaccinated.

Vaccine response from the public

The acceptability of the COVID-19 vaccine has thrown a lot of dust into the air, which led to families going into a disagreement about whether to accept the vaccine. Some believe that the global elite wants to control people through the vaccine (Peyser, 2021). Research conducted to ascertain the position of Chinese university students on the COVID-19 vaccine shows that most university students who have prior information about the vaccine and believe that the vaccine is safe are more likely to get a COVID-19 vaccine in future (Bai et al., 2021). Similarly, another study that compares the idea, behaviour, and fear of Chinese university students at home and abroad shows that the university students who study in China are braver and show no sign of fear of taking the COVID-19 vaccine than those Chinese university students overseas (Yang et al. 2021).

In the USA many people also showed a positive attitude about the vaccination. A survey among adults in four metropolitan in the USA on the acceptance of the COVID-19 vaccine has it that those who have contracted COVID-19 disease or whose relatives have contracted the disease have a higher chance of inoculating COVID-19 vaccine (Mohandes, 2021). A study on vaccine acceptance among university students in South Carolina has it that people's belief in medical experts and scientists rather than the news they hear from the news outlets will contribute significantly to the higher level of inoculation in this area (Qiao et al., 2020). In contrast, some people in the USA has a different view about Covid-19 vaccination. The research on college students' readiness in the nursing Philadelphia faculty suggests that nursing students and adjunct clinical faculty are less willing to take the COVID-19 vaccine than

full-time faculty students. The report showed that the people were overly concerned about the time frame of the vaccine, which amounts to their fear about the safety and side effects (Manning et al., 2021).

A community-based investigation was done on the attitudes of people living in the cities and countryside of Tamil Nadu in India about the COVID-19 vaccines. The results revealed that 50% of the people living in this area under study sees taking the vaccine as a positive move towards the COVID-19. While 40.7% of the people are not eager to accept the vaccine citing belief in how effective the vaccine could be, unreliable medical system, the aftermath effect of the vaccines in the long run, and their preference for eating natural foods that could help boost the body immune compared to the vaccines (Danabal *et al.* 2021).

Research on University students in the USA on their desire to take the COVID-19 vaccine suggests that most of the university students have good intent and are willing to take the COVID-19 vaccine. However, some have a concern about the efficacy and safety of the vaccine, which should also be considered by the government and its health agencies when delivering vaccines to the students. Ensuring that the medical team has unadulterated information on the gains of taking vaccines will be pivotal to encouraging the students to take the vaccine (Mant et al., 2021).

Pastorino et al. (2021) conducted a study on students in higher institutions in Italy. The results of the study showed that students are willing to take the COVID-19 vaccine. The factors that encourage the students who are willing to be vaccinated are students with a previous history of being vaccinated against other diseases, students who are mostly concerned about COVID-19, and students who are perceived to be vulnerable against COVID-19.

In Asia, studies also found people's positive attitudes related to COVID-19 vaccination. A study that cut across students who study in universities in Saudi Arabia on their position on the vaccination of COVID-19 vaccine showed that most of the students support the inoculation of COVID-19 vaccine in the country. Most students who have not received the COVID-19 vaccine are eager to be inoculated once the vaccine is available in the hospitals (Almalki, 2021). Similarly, Alqudeimat et al. (2021) study on the determinants of COVID-19 vaccine acceptance among all the adults living in Kuwait showed that 53.1% of the adults were willing to accept COVID-19 vaccine once the government provided the vaccine to them.

While some studies have found positive feedback about the vaccination, some other studies found otherwise. Ning et al. (2021) study on nursing students on how they perceive the vaccine and their eagerness to jab COVID-19 vaccine showed that those students whose members of the family suffered after taking a vaccine for other illnesses showed their unwillingness to participate in the COVID-19 vaccine. Another research done in India on college students' acceptability behavior of the COVID-19 vaccine revealed a high unwillingness from the students' to receive the vaccine (Sharma et al., 2021).

Mustapha et al. (2021) conducted a study to investigate elements related to the students' acceptance of COVID-19 vaccine in the medical science department in universities in the northern part of Nigeria in the African context. The results showed low acceptability of the COVID-19 vaccine among health science students in universities in Northwest Nigeria, and the heads of the institution that accepted the vaccine were because of the government regulation and readiness to pay for the vaccine.

The research carried out in Uganda among medical students' shows that two-third of the students have not received the vaccine. Therefore, the acceptance level of the COVID-19 vaccine is shallow among the students. Their reasons for not accepting the COVID-19 vaccine are their concerns about the safety and side effects, low perception of the risk of contracting COVID-19, and negative information from social media about COVID-19 vaccination (Kanyike et al., 2021).

According to Hannah et al. (2021), one of the crucial groups targeted for COVID-19 vaccination is college students. They are vulnerable to COVID-19 infection due to varying factors, including their communal living in the school and outside the school environment. The university environment has been seen as a place with likely chances of contracting COVID-19 and can become the "super spreaders," which can easily spread within the school's areas. That is why students worldwide have given much importance to vaccination. This study explores how Chinese universities carried out vaccination drives for international students and how international students feel about it.

METHODOLOGY

The study adopted a mixed-method approach to quantify the responses and undertake the students' awareness and perception of COVID-19 vaccination from their respective institutions. The study collected international students' feedback related to the topic under study.

Instrument

The data for this study was built in Microsoft form as an online questionnaire and shared with the respondents using WeChat, which is the fastest means of reaching international students in higher institutions in China. The questions were designed in the open-ended and close-ended form to be flexible to allow the international students to air their views on how their universities communicated to them and their feelings on COVID-19 vaccination. Through these

mixed questions, the researchers got the quantitative responses, as well as the respondents gave feedback about the approach.

Population and Sampling

All the international students' were considered as the population size for this study. Questionnaires were distributed randomly, and the 129 valid and complete responses were chosen further for the analysis. The sample includes international students from different continents who are currently studying and residing in Chinese universities campuses in different majors and disciplines with different levels of qualifications. Below is the detail is given in the table about the sample:

Table 1 Demographic Factors

Table 1: Demographic Factors						
Gender		Frequency	Percent	Age Group	Frequency	Percent
Valid	Transgender	1	.8	20-25 years	53	40.2
	Female	45	34.1	26-35 years	68	53.8
	Male	83	65.2	36-45 years	6	4.5
	Total	129	100.0	46 and above	2	.16
				Total	129	100
Qualifications		Frequency	Percent	Continent		
Valid	BSc	44	33.3	Africa	74	56.1
	Chinese language	13	9.8	Asia	34	28.1
	MSc.	48	36.4	Europe	5	3.8
	PhD	17	12.9	North America	4	3.0
	Others (Cultural Diplomas	7	5.3	Australia/Oceania	7	5.3
				Antarctica	1	.8
		129	100.0	South America	4	3.0
				Total	129	100.0

Procedure

This questionnaire is shared among students from different countries who are currently living in China in the various international students WeChat groups. The researchers also used their personal WeChat to get students in their current school and previous schools they have attended in China to administer the questions.

ANALYSIS

Time period of COVID-19 vaccination drive

The questions asked in the survey from the students identified that students were informed in advance about the vaccination. As per the figure, most of the students were informed in the month of April as more than 50 percent of the respondents said that they had been informed on that particular month. This info states that China started vaccination drive for international students from March onward. This drive for international students started a little late compared to the other Chinese people who were started to take vaccination shots from Jan 2021. Furthermore, the question regarding the type of vaccine revealed that all the international students were offered Sinovac vaccines and not any other vaccine developed around the world.

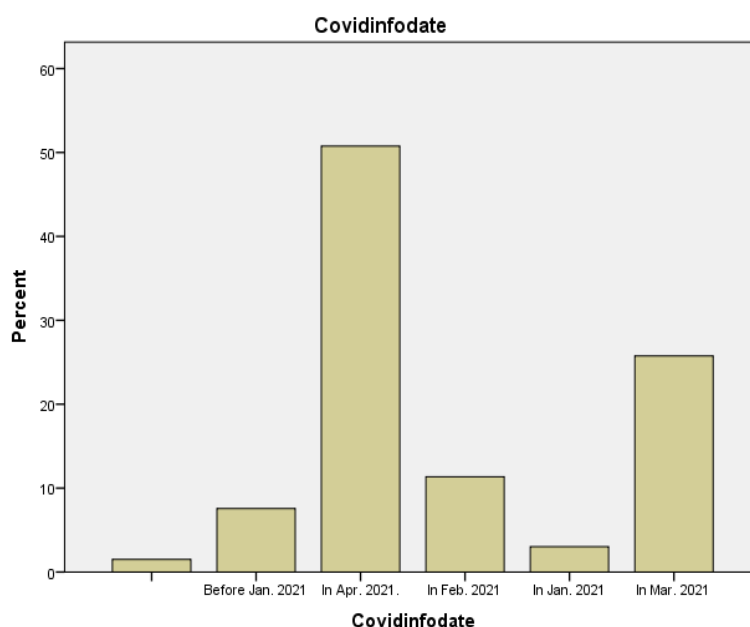


Figure 1 COVID-19 Vaccination Informal date

Vaccination Informal Channels

Most of the international students were informed through a WeChat group notice from the institutions. This revealed the formal approach used by the Chinese institutions related to vaccination for international students. The international students were not properly consulted about the vaccination as only seven students said that their institution talked to them in person about the vaccination.

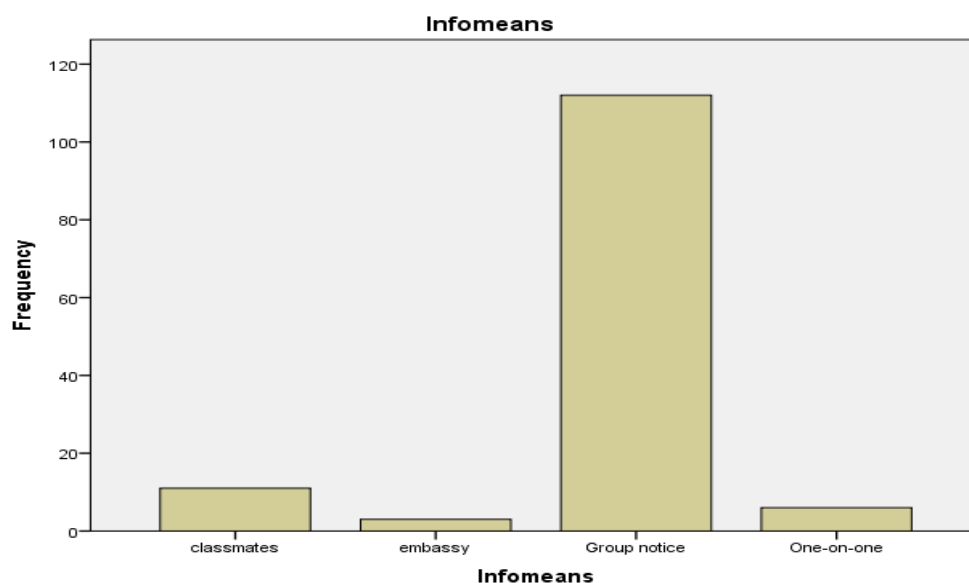


Figure 2 Information Channels

Vaccine Requirement

Question regarding the compulsion of getting COVID-19 vaccination revealed that for most of the participants, it was voluntary to take the vaccination, but for many international students, it was compulsory to get COVID-19 shot depending on the area they are living in. It was compulsory for the international students living in high-risk areas, while it was optional to take or refuse the vaccination for low-risk areas. Those students who took the compulsory vaccination said that their institutions had informed them that taking vaccination shots is an absolute necessity if they want to continue their education.

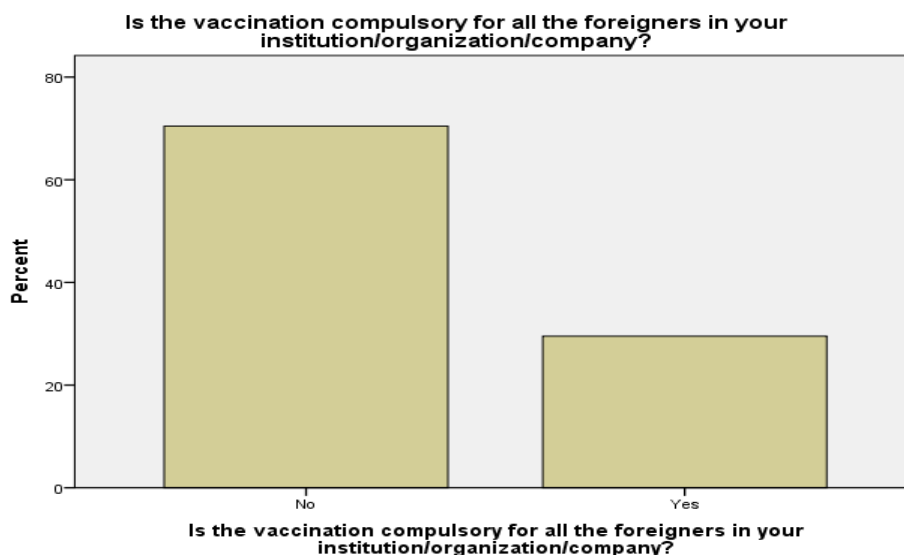


Figure 3 Vaccine Compulsion

Cost of Vaccination

When China started the vaccination drive in the country, the people were paying to take the vaccination shots. So the question was asked from the international students that they paid for it, or they get it for free. The analysis revealed that most students paid for taking the vaccination shots. The students gave their view on this policy by stating that:

"it is a bit unfair as when we were receiving these shots, Chinese people were getting a vaccination for free, but for us, we paid 100 yuan for each vaccination dose we received from the hospital".

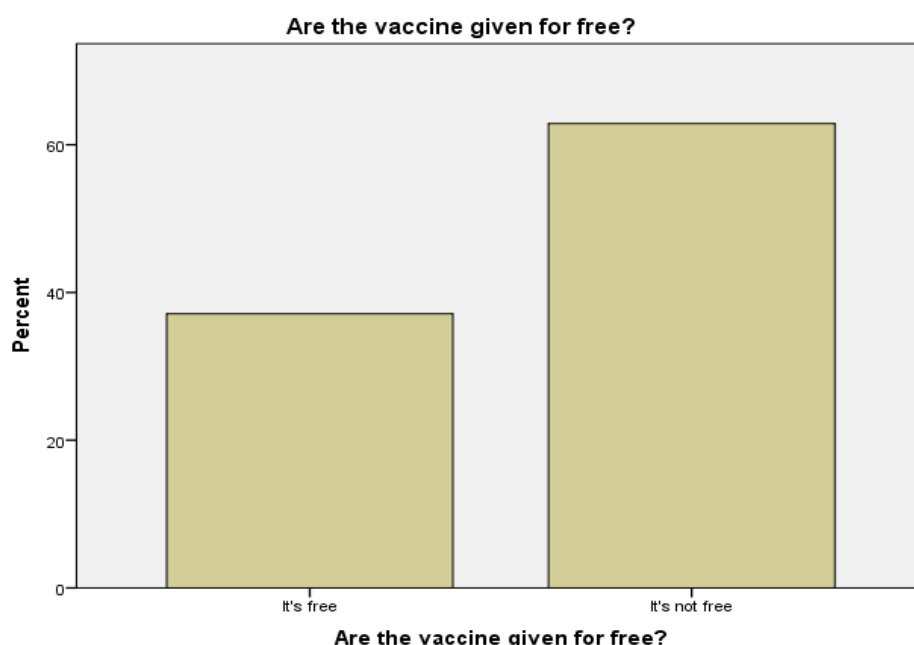


Figure 4 Vaccine Cost

Vaccination Process

The question was asked from the international students about the vaccination process. The purpose of this question was to check whether international students were treated as ordinary people in China or the institutions treated them separately from the Chinese students. In many institutions, the international students got COVID-19 vaccination separately from the Chinese students. The students view on this:

"For us, it was not an important thing to be treated separately. We did not think of any discrimination because of this different treatment. COVID-19 created extraordinary circumstances, so we only think as a formal procedure which we followed without feeling any indifference".

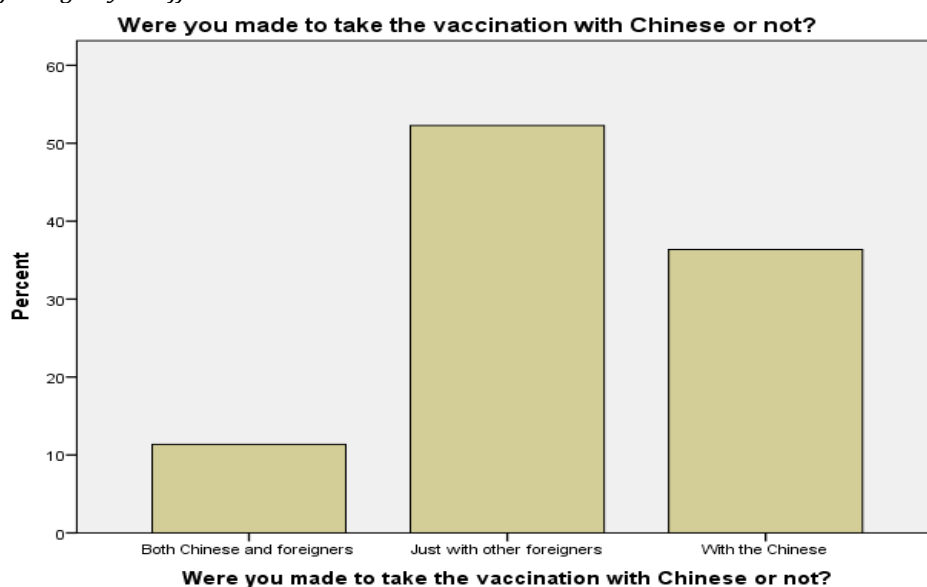


Figure 5 Vaccine Inclusiveness

In contrast, some institutions allowed international students to take vaccination shots and Chinese students. The international students viewed this positively and commented that:

"It fosters unity among us as we become part of a procedure collectively. Furthermore, this also helped us to be less nervous and brave as we believed that there is no hidden thing on the vaccine".

Students Readiness for the Vaccination

The students asked whether the time given by the institutions was enough to be mentally ready for the vaccination. For most of the students, the time was inadequate to prepare their minds to take the vaccination shots as close to sixty per cent of the respondents gave a negative response. The students view on that is:

"There are many rumors around the social media about the vaccination. These rumors have certain uncertainties among us. Also, the long and short term side effects can be dangerous for our health. So we needed a little more time to be mentally ready for the vaccination, while the universities only gave us a week time to be ready for the vaccination".

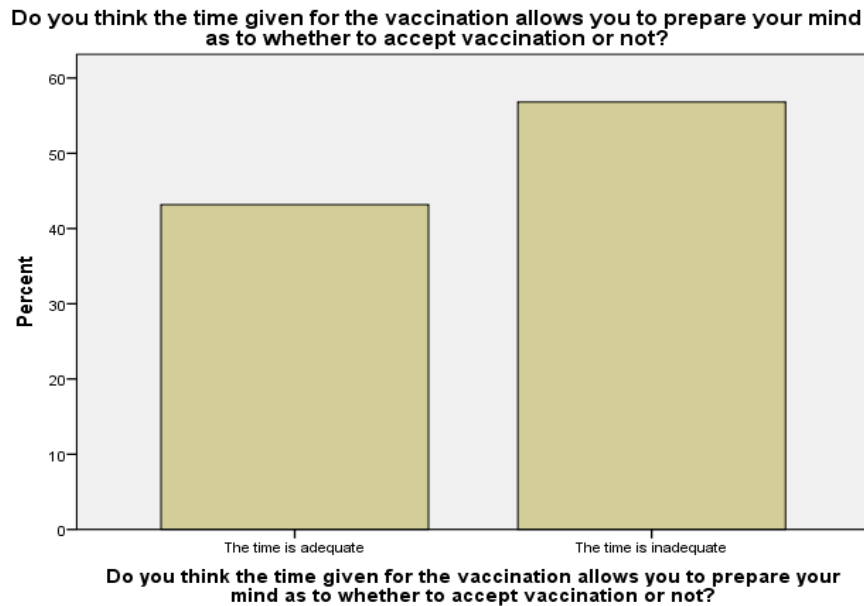


Figure 6 Time given for vaccination

On the other hand, students who were satisfied with the time provided by the universities said that:

"Many companies are working on making this vaccination available for the people. In that period of one year, many trials and testing have been done on the vaccination. So, we were already mentally ready to take the vaccination shot. The time was enough for us to be ready for the vaccination".

Students feedback on the risk related factor

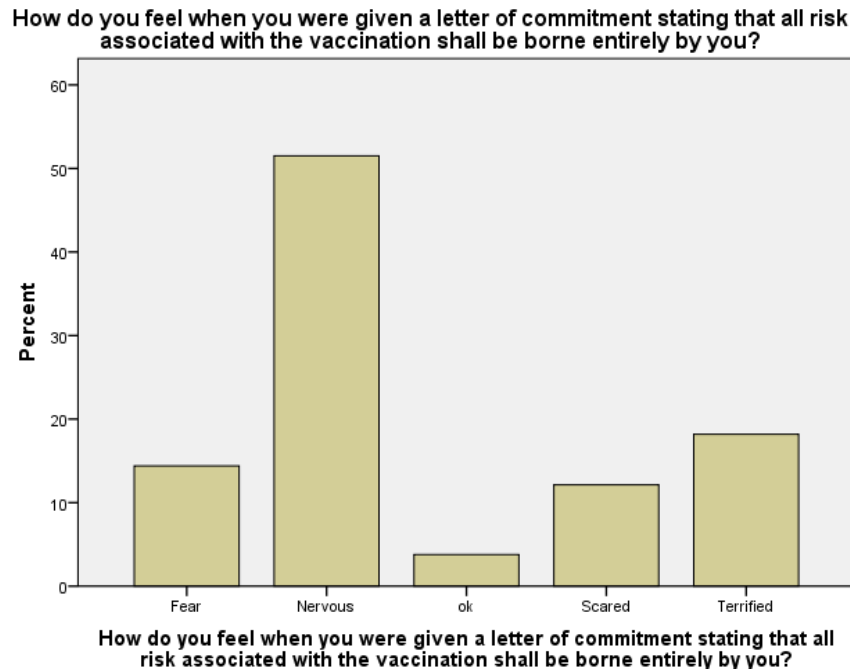


Figure 7 Risk Responsibility Response

For most of the students, this notice brings uncertainty and fear. As fake news was spreading online on social media regarding the vaccination, international students were already in a bit of anxiety related to COVID-19 vaccination. That is why most of the students' opinion was that they felt nervous and uncertain when the administration informed them that the students themselves would bear all the risks associated with the vaccination. In the international students' opinion:

"The time for the development of the vaccine is short; it is difficult to predict long-term side effects of the vaccine. The state of the pandemic changes daily; so they need more positive confirmation from the administration instead of uncertain and risk-related statements".

Students' response on taking COVID-19 vaccination

The question about taking the vaccination has divided the respondents into two categories. Some students were fearful of COVID-19 vaccination. As per the survey, more than fifty per cent of the respondents were afraid to take the vaccination shots. According to their view:

"The fear created by fake news on social media and other platforms does impact our decision to take the vaccination. Many rumors and fake news were spreading online, bringing confusion about the validity and effectiveness of vaccines. These rumors have created a certain amount of fear and nervousness".

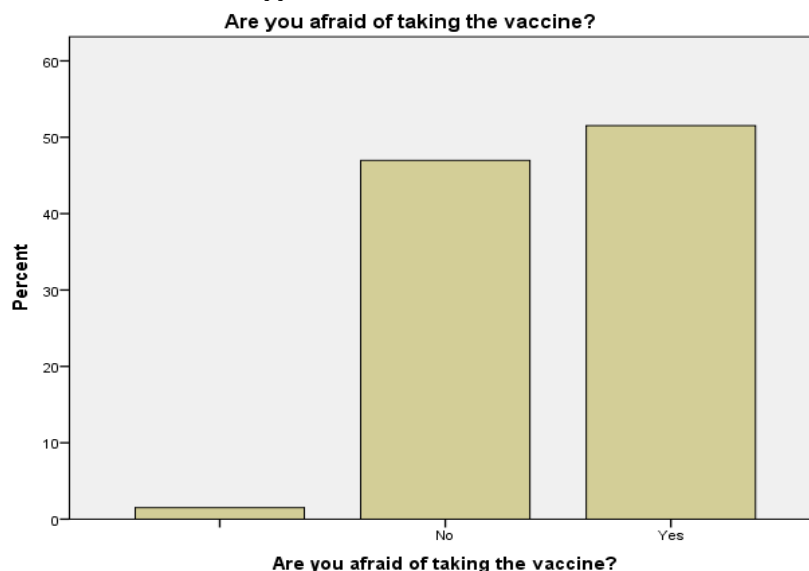


Figure 8 Fear of Vaccine

While on the other side the students who were not feeling fearful revealed their reason to be confident about the vaccination:

"Although there was a factor of uncertainty, the vaccination drive was happening all over China. So we were confident that the vaccination is safe for use as government cannot start a major drive in the country without fulfilling the safety requirements".

Travelling chance with the COVID-19 vaccination

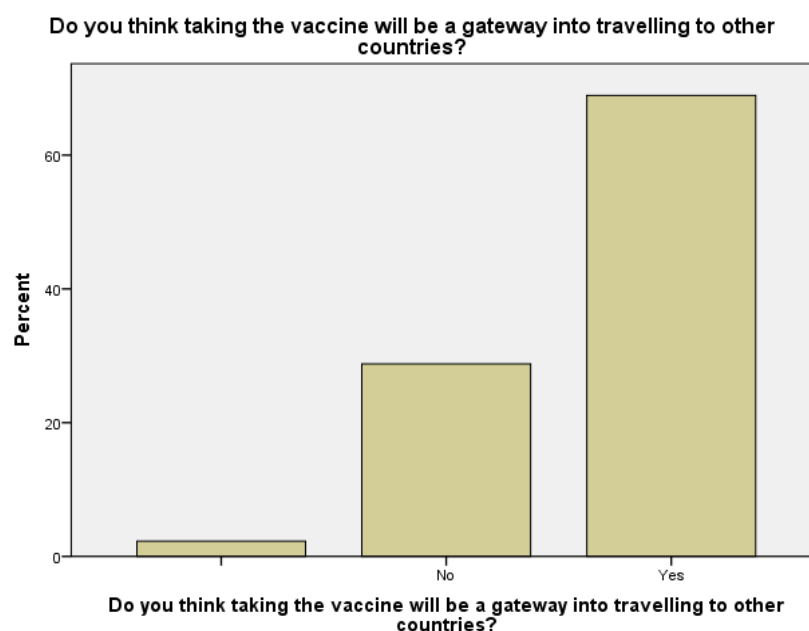


Figure 9 Prospect after taking Vaccination

With the COVID-19 problem spreading worldwide, countries are trying to secure borders with different measures. Many countries made it conditional on allowing travel if you are vaccinated properly in the past year. The researcher asked the respondents how they view their chances of travelling to other places after taking the vaccination. In the students' view:

"The chances of travelling abroad are high after taking the vaccination as most countries allow vaccinated people to come in the country".

Perceived benefits of taking COVID-19 vaccine

Though there were a lot of rumors and fake news about the vaccination, there is no doubt that vaccination is the best solution to control this COVID-19 problem (Sarah et al., 2021). Due to its benefits, it's widely been authorized by governments worldwide. In this study, the researchers asked the students about the benefits of taking the COVID-19 vaccination. The students replied that:

"The vaccine offers many benefits to us. Firstly, we know that it will help us to travel freely within the country or even abroad. These days, many countries have adopted this vaccination policy, so you have to be fully vaccinated to access many facilities. Secondly, it is perfect for our health as it helps strengthen the immune system. With strong immunity, our body can protect us from this disease and even if we catch disease, our body can recover quickly. Thirdly, it's a great way to be feeling secure and confident in that extraordinary situation created by COVID-19. Overall, the vaccine is very good for ourselves and the community around us".

CONCLUSION

The study was conducted to gain an in-depth understanding of the administrative approach used by Chinese universities to carry the vaccination drive for international students and how students view these tactics. The findings of this study revealed some of the interesting thing which the university administration has used. The approach was very formal and systematic. This presents a kind of rigid and hard image from the university. The students were not formally consulted to eliminate the fears and nervousness. However, a majority of the students were given options to take or not take the vaccination. It was compulsory for the international students living in high-risk areas, while it was optional to take or refuse the vaccination for low-risk areas. Moreover, the cost of the vaccination was beard by the students.

The students have different responses related to the approach used by the Chinese universities. Some of the students were satisfied with the formal approach, but many complained about the rigid approach. Especially with related to cost, the students said that the vaccine should be offered for free and the time provided by the university to decide about the vaccination. Furthermore, though a lot of nervousness and fear was found among the students about the vaccination, students still acknowledged the vaccination benefits. As per the students, vaccination is good for immunity and for the community's safety. Also, the vaccination is the gateway to traveling to other countries.

In conclusion, the Chinese universities' administration approach was formal, and they didn't give any consideration to the fear and nervousness found in the students about the vaccination. No consultancy services were provided to the students to eliminate their fears and worries and were carried out the same way they did to the Chinese people. Most students took the vaccination by understanding that this may be the best option considering the situation.

Recommendations

- Proper consultation should be provided to the students to reduce their nervousness.
- The institutions or government should cover the cost of vaccines for better response rate.

STATEMENTS AND DECLARATION

Funding Information

The authors did not receive support from any organization for the submitted work.

Competing Interest

The authors have no competing interests to declare that are relevant to the content of this article.

Data Availability

Data related to this research will be available on demand in spv file.

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