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RESEARCH ARTICLE

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Willingness of the Senior High School Teachers to be Vaccinated against COVID-19

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ABSTRACT

The SARS-Coronavirus 2019 (COVID-19) pandemic is a major threat to public health and has a significant impact on all aspects of life. An effective vaccine is the most anticipated solution for controlling the spread of the COVID-19 virus and reducing this disease's cases. The study aims to determine the willingness of public senior high school teachers to the COVID-19 vaccine. The researchers conducted a study on the willingness of the public senior high school teachers on April 2021 submitted to the faculty of the College of Nursing of Isabela State University (Echague, Main Campus). The researchers used a descriptive research design method, convenient sampling technique, and adopted a tool for the data gathering of the study. The findings indicated that although most respondents are willing to be vaccinated with Pfizer BioNTech COVID-19 vaccine, some refused; the primary reasons for rejection are the vaccine's side effects and efficacy. The study results suggest that the participants have a high acceptance level of the COVID 19-vaccine. The researchers recommend government agencies responsible for the COVID-19 vaccine campaign to take into consideration the findings of this study regarding the reasons of refusal of the respondents for the improvement of the campaign about COVID-19 vaccine.

Keywords: COVID-19 vaccine; vaccination program; willingness to be vaccinated

INTRODUCTION

Background

Since 2020, the coronavirus outbreak 2019 pandemic has become a significant public health issue. As of April 5, 2021, the World Health Organization recorded 131,020,967 documented COVID-19 incidents and 2 850 521 fatalities [(1)]. The Philippines logged 8,355 new COVID-19 cases [(2)], while Isabela province Department of Health (DOH) - Cagayan Valley reported 5 new cases as of April 1 bringing 756,199 total cases in the country [(3)]. As of March 30, 2021, there had been a record of 547,727,346 vaccine doses administered globally and Philippines reported 783,913 Filipinos vaccinated according to the data from National Task Force against COVID-19 [(4)].

According to the World Health Organization, the next major milestone will be ensuring that people worldwide are vaccinated, beginning with the most vulnerable. Vaccination is now being carried out in several countries around the world. Nevertheless, some cases of reinfection have been reported raising concerns about vaccine safety and effectiveness, including the longevity of defense against COVID-19.

According to several reports, vaccine hesitancy has been linked to religious beliefs, personal beliefs, and safety concerns based on widespread misconceptions, such as the connection between vaccines and autism, brain injury, and other disorders [(5)].

Since July 2020, the John Hopkins Center for Communication Programs, Facebook, and the World Health Organization have been overseeing a global COVID-behavior study in 67 countries. According to the most recent results, vaccine acceptance in the United States fell from 69 percent in January 2021 to 65 percent out of five countries in the Americas. According to the study, recorded vaccine approval rates in European countries have remained steady. Some countries, such as Italy, the United Kingdom, and Germany, have very low reported non-acceptance rates (8 percent, 10 percent, and 13 percent, respectively), and in Nigeria, vaccine acceptance is starting to grow [(6)].

Data from the global survey of COVID-19 knowledge, attitudes, and practices are being obtained regularly, and the findings are available on the CCP's KAP—knowledge, attitudes, and practices—COVID dashboard. Vaccine acceptance in the Philippines from March 1, 2021, to March 15, 2021, 57 out of 100 people in their community will get the COVID-19 vaccine when available.

According to a survey conducted by the Octa Research Group from January 26 to February 1, 2021, many Filipinos are still unwilling to be vaccinated against the disease. According to the poll, 19% of respondents said they would have themselves vaccinated, while 35% said they don't know whether they would get themselves vaccinated. Concerns over the efficacy of a vaccine were higher in Mindanao (78%) and Luzon (76%) than in Metro Manila (69%) and the Visayas (64 percent). The Visayas (46%) had the most concerns about vaccine efficacy, followed by Metro Manila (34%), Mindanao (27%), and Luzon (21 percent) [(7)].

The survey found that the top three explanations for not getting vaccinated were "not sure if it is healthy," "not sure if vaccination is successful," and "a vaccine is not sufficient to combat COVID-19."

The World Health Organization reports that if more knowledge regarding vaccinations becomes accessible, confidence and acceptance of COVID-19 vaccines will improve. The Octa Survey discovered that only one in ten Filipinos (15%) trusted vaccines manufactured in China, while four in ten (41%) trusted vaccines manufactured in the United States. 25% said they trusted vaccines manufactured in the United Kingdom, 20% said they trusted vaccines manufactured in Russia, and 17% said they trusted vaccines manufactured in India. The five countries include at least seven vaccine makers, with which the Philippines has had preliminary discussions about purchasing vaccines. Pfizer, BioNTech, Moderna, Novavax, Johnson, and Johnson (Janssen Pharmaceutica), AstraZeneca, Sinovac, and the Gamaleya Research Institute were all among them [(7)].

Governments and communities must assess existing levels of readiness to obtain a COVID-19 vaccine that is potentially safe and reliable, as well as correlates of vaccine hesitancy and acceptance. It's essential to strike a careful balance between reminding the public about the importance of universal vaccination coverage and resisting any hint of coercion. Building public trust in vaccination programs requires precise and reliable communication from government officials.

Purpose

One of the primary intents of this study is to provide general information on COVID-19 vaccine acceptance, especially among educators who are categorized to be in the priority eligible group B or distribution of vaccine on the prioritized groups getting the vaccine first which include teachers, social workers, other government workers, other essential workers, socio-demographic groups at significantly higher risk other than senior citizens and poor population guided by the principles of the National Government to maintain the most critical essential services. Understanding how teachers play a pivotal role in the COVID-19 vaccine may assist future immunization efforts, especially public awareness.

The study's rationale is also to identify regions with a high burden of COVID-19 incidents. Santiago City has the most number of active cases in Isabela as of April 5, 2021 with a 53 new total confirmed positive cases bringing a total of 1,370 active cases in Isabela Province and this study will help review the burden of COVID-19 cases in the population and recalibrate the priority areas accordingly.

The reason for this study is to look into the level of acceptance of Senior High School teacher’s on selected schools in Santiago City to the COVID-19 vaccine to meet the requirements for community immunity and to determine the factors that are influencing their willingness to be vaccinated and address misconceptions, distrust, and vaccine hesitancy in different contexts. This sample of government workers are chosen as respondents to investigate various priority groups in contrast to recent current studies in order to serve their responsibilities as members of groups that play a critical role in society.

This study aims to identify several barriers on vaccine hesitancy which include misconceptions, religious beliefs, superstitious beliefs and other barriers ensuring that the government's efforts should be intensified to overcome these barriers. Vaccine hesitancy and refusal are essential concerns worldwide, and one of the issues is much unknown information to the public and is reluctant to accept vaccines.

METHODS

Research Design

This study utilized the descriptive survey method to find out the anti-COVID-19 vaccine acceptance of senior high school teachers from selected schools in Santiago City in terms of their willingness to be vaccinated,

their preferred brand of COVID-19 vaccine if they are willing to be vaccinated, the reasons why they are not willing to be vaccinated, and their level and sources of information.

This study was conducted at three (3) public schools in Santiago City. The re-searchers decided to conduct the study in Santiago City because it has, as of April 11, 2021, a total of 2,123 confirmed cases which is composed of 1,923 recovered cases, 46 deaths, and 106 active confirmed cases (City Health Office and City Epidemiology Surveillance Unit of Santiago City, 2020). Santiago City is one of the cities in Isabela with the highest number of COVID-19 cases.

The schools mentioned are School A, School B, and School C. The researchers chose the senior high school teachers of selected public schools in Santiago City, considering the Interim National Immunization Tech-nical Advisory Group (iNITAG) vaccine's immunization prioritization guideline for Covid-19 Vaccines adapted by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF). The senior high school teachers are from School A, School B, and School C. The total number of respondents was 52, composed of 8 SHS teachers from School C, 16 SHS teachers from School A, and 24 permanent and four probationary SHS teachers from School B. The respondents were chosen using convenient sampling. Glen (2015) defined convenience sampling as a type of non-probability sampling, which doesn't include the random selection of participants. However, due to problems encountered during the data gathering, the re-searchers decided to limit the respondents to 40.

The primary instrument used in this study is a survey questionnaire adopted from previous research titled "Low Acceptance of vaccination against the 2009 pandemic influenza A (H1N1) among healthcare workers in Greece."

Data Collection Procedure

The researchers sent a request letter to conduct the study to the school division superintendent and got approval. After securing the permit to conduct the research, the survey questionnaires were sent through the online social media account of the representative per school of the senior high school teachers from selected schools in Santiago City. The message contained the survey form, a text explaining the study, and where it will be used.

Data analysis was done immediately after the participants answered the questionnaire given to them through an online platform. Frequency and percentage distribution were used to interpret and analyze the survey result with the help of a statistician. Microsoft excel was used in the data analysis.

Statistical Treatment of Data

The researchers used descriptive statistics in the study. Frequency and percentage distribution was used to determine the profile and COVID-19 vaccine acceptance of the respondents. Chi-Square test was used to identify the significant relationship of the profile of the respondent and their willingness to be vaccinated.

RESULTS

Profile of the Respondents

Table 1. Frequency and percentage distribution of the respondents according to sex

Sex	Frequency	Percent
Male	13	32.5
Female	27	67.5

Table 1 presents the frequency and percentage distribution of the respondents according to sex. As shown in Table 1, most of the respondents are female with a 27 or 67.5 percent frequency, while males have 13 or 32.5 percent.

Table 2. Frequency and percentage distribution of the respondents according to age

Age	Frequency	Percentage
20 – 24	2	5
25 – 29	9	22.5
30 – 34	5	12.5
35 – 39	8	20
40 – 44	2	5
45 – 49	11	27.5
50 – 54	3	7.5

Table 2 presents the frequency and percentage distribution of the respondents according to age. As shown in Table 2, the majority of the respondents are 45 – 49 years of age with a frequency of 11 or 27.5 percent; 9 or 22.5 percent are 25 – 29 years of age; 8 or 20 percent are 35 – 39 years of age; 5 or 12.5 percent are aged 30 – 34; 3 or 7.5 percent are 50 – 54 years of age; 2 or 5 percent are aged 20 – 24 and ages 40 – 44.

Table 3. Frequency and percentage distribution of the respondents according to their highest educational attainment

Education	Frequency	Percentage
Bachelor's degree	15	37.5
Master's degree	24	60.0
Bachelor of laws and letters	1	2.5

Table 3 presents the frequency and percentage distribution of the respondents according to the highest educational attainment. The data reveals that most of the respondents have master's/doctor's degree with a frequency of 24 or 60 percent; 15 or 37.5 percent has bachelor's degree and 1 or 2.5 percent has graduated with a degree on Bachelor of Laws and Letters.

Table 4. Frequency and percentage distribution of the respondents according to their years in teaching service

The years in teaching service	Frequency	Percentage
1 – 7	27	67.5
8 – 14	4	10
15 – 21	7	17.5
22 – 28	2	5

Table 4 presents the frequency and percentage distribution of the respondents according to years in teaching service. The data shows that most of the respondents are teaching for 1 – 7 years with a frequency of 27 or 67.5 percent; 7 or 17.5 percent are teaching for 15 – 21 years; 4 or 10 percent are teaching for 8 – 14 years, and 2 or 5 percent are teaching for 22 – 28 years.

Table 5. Frequency and percentage distribution of the respondents according to their school affiliation

School affiliation	Frequency	Percentage
No response	2	5.0
School A	15	37.5
School B	19	47.5
School C	4	10.0

Table 5 presents the frequency and percentage distribution of the respond-ents according to their school affiliation. The data reflects that majority of the respondents are from School B with a frequency of 19 or 47.5 percent; 15 or 37.5 percent are from School A; 4 or 10 percent are from School C and 2 or 5 percent has not answered the school they are affiliated.

Table 6. Frequency and percentage distribution of the respondents according to their existing illnesses

Existing illnesses	Frequency	Percentage
None	28	70.0
Hypertension	6	15.0
Asthma	5	12.5
Hypertension and Asthma	1	2.5

Table 6 presents the frequency and percentage distribution of the respondents according to their existing illnesses. As shown in Table 6, most of the respondents do not have existing illnesses with a frequency of 28 or 70 percent; 6 or 15 percent have hypertension; 5 or 12.5 percent have asthma and 1 or 2.5 percent have hypertension and asthma.

Table 7. Frequency and percentage distribution of the respondents according to the vaccine they have received

The vaccine they have received	Frequency	Percentage
Tetanus Toxoid	11	27.5
Anti-hepatitis	6	15.0
Oral Polio vaccine	12	30.0
DPT	10	25.0
Anti-chicken pox	5	12.5
Flu vaccine	23	57.5
None/ can't remember	3	7.5

Table 7 presents the frequency and percentage distribution of the respondents according to the vaccines they have received. The data shows that most of the respondents have received flu vaccine with a frequency of 23 or 57.5 percent; 12 or 30 percent have received oral polio vaccine; 11 or 27.5 percent have received tetanus toxoid vaccine; 10 or 25 percent have received Diphtheria-Tetanus-Pertussis Vaccine; 6 or 15 percent of the respondents

have received anti-hepatitis vaccine; 5 or 12.5 percent have received anti-chicken pox vaccine and 3 or 7.5% cannot remember if they have received a vaccine.

According to the study conducted by Patorino et al. (2021), flu vaccination and influenza share similar symptoms, especially during the early stage of the disease; thus, for the general population, specifically for vulnerable subgroups, flu vaccination helps reduce the impact of COVID-19 in terms of mobility, mortality, and hospitalizations [8].

Survey

Table 8. Frequency and percentage distribution of the respondents whether they have received the vaccine or not

They have received the vaccine or not	Frequency	Percentage
Yes	0	0
No	40	100

Table 8 presents the frequency and percentage distribution of the respondents whether they have received the vaccine or not. As shown in table 8, all of the respondents did not yet receive the anti-COVID-19 vaccine with a frequency of 40 or 100 percent.

Table 9. Frequency and percentage distribution of the respondents whether they are willing to be vaccinated or not

They are willing to be vaccinated or not	Frequency	Percentage
Yes	26	65
No	14	35

Table 9 presents the frequency and percentage distribution of the respondents whether they are willing to be vaccinated or not. The data reveals that most of the respondents are willing to be vaccinated with a frequency of 26 or 65 percent, and 14 or 35 percent refused to be vaccinated.

This implies that more than half of the respondents are willing to be vaccinated. A study conducted by Sallam et al. (2020) also showed that out of 672 respondents of their research, 450 or 67 percent were willing to be vaccinated [9].

Table 10. Frequency and percentage distribution of the respondents' preferred brand of COVID-19 vaccine

The respondents' preferred brand of COVID-19 vaccine	Frequency	Percentage
Pfizer-BioNTech	23	57.5
Moderna	0	0.0
Johnson & Johnson's Janssen	1	2.5
AstraZeneca	1	2.5
Novavax	0	0.0
Sinovac	1	2.5
Gam-COVID-Vac Sputnik V	0	0.0

Table 10 presents the frequency and percentage distribution of the respondents' preferred brand of COVID-19 vaccine. The data reveals that most of the respondents who were willing to be vaccinated prefer Pfizer-BioNTech with a frequency of 23 and 57.5 percent; 1 or 2.5 percent prefer Johnson & Johnson's Janssen, the same frequency and percentage as those who prefer Sinovac and AstraZeneca.

Saeid et al. (2021) stated in their study that 46.2 percent of the study respondents prefer Pfizer-BioNTech, and it was because they trust the brand and the company was transparent to the public about the details of their vaccine [10].

Table 11. Frequency and percentage distribution of the respondents' reason for refusal to the vaccine

The respondents' reason for refusal to the vaccine	Frequency	Percentage
I do not have enough time	0	0.0
Fear over vaccine safety	11	27.5
Religious Reason	0	0.0
Fear of needles	0	0.0
Worried about the effects of the COVID vaccine	7	17.5
Worried about the effectiveness of the COVID vaccine	7	17.5
Does not need a vaccine for my risk level	0	0.0
Does not trust pharmaceutical companies	0	0.0
Does not trust government about COVID severity	1	2.5
Vaccine safety studies are not complete	3	7.5
I prefer other methods of COVID-19 prevention	4	10.0
I do not need the vaccine	0	0.0

Table 11 presents the frequency and percentage distribution of the respondents' reasons for refusal to the COVID-19 vaccine. The data shows that the reason of most of the respondents who were not willing to be vaccinated is fear over vaccine safety with a frequency of 11 or 27.5 percent; 7 or 17.5 percent of the respondents

refused because they are worried about the effects of the COVID-19 vaccine as well as they are concerned about the effectiveness of COVID-19 vaccine; 4 or 10 percent of the respondents prefer other methods of COVID-19 prevention; 3 or 7.5 percent refused COVID-19 vaccine because vaccine safety studies are not complete and 1 or 2.5 percent refused because he or she does not trust the government about COVID severity.

Rachiotis et al. (2010) stated in their study that the most common reason for refusing the vaccine was fear about the vaccine's safety, which was 75.3 percent of the respondents [10].

Table 12. Frequency and percentage distribution of the respondents' level of information about the vaccine

The respondents' level of information about the vaccine	Frequency	Percentage
No Response	1	2.5
No information	3	7.5
Insufficient	22	55.0
Sufficient	14	35.0

Table 12 presents the frequency and percentage distribution of the respondents' level of information about the Vaccine. As shown in table 12, 22 or 55 percent of the respondents said that their information about the COVID-19 vaccine is insufficient; 14 or 35 percent of the respondents said that they have sufficient information about the COVID-19 vaccine; 3 or 7.5 percent of the respondents said that they do not have any information about the vaccine and 1 or 2.5 percent did not respond.

According to the study conducted by Rachiotis et al. (2010), 58.5 percent of their participants said that their information about vaccine safety is insufficient, and it is also stated in his study that people who have sufficient information has a lower risk of reporting fear over vaccine safety than those who with insufficient information [11].

Table 13. Frequency and percentage distribution of the respondents' source of information about the vaccine

The respondents' source of information about the vaccine	Frequency	Percentage
Internet	37	92.5
Hospital Infection Control Committee	11	27.5
Medical journals/ books	16	40.0
Pharmaceutical Companies	5	12.5
Television	24	60.0
Radio	14	35.0
Newspapers/ magazines	10	25.0
People around me	12	30.0

Table 13 presents the frequency and percentage distribution of the respondents' source of information about the Vaccine. The data shows that the majority of the respondents' source of information is the internet with a frequency of 37 or 92.5 percent; 24 or 60 percent of the respondents' source of information is television, 16 or 40 percent of the respondents' source of information is medical journals or books; with a frequency of 14 or 35 percent the next source of information is radio; 12 or 30 percent of the respondents' source of information is people around them; Hospital Infection control committee is the source of information of 11 or 27.5 percent of the respondents; 10 or 25 percent of the respondents' source of information is newspapers or magazines, and 5 or 12.5 of the respondents' source of information is pharmaceutical companies.

Rachiotis et al. (2010) discussed that the source of information on vaccine safety with the probability of accepting the vaccination is medical journals/books. While, sources of information on vaccine safety with the possibility of refusing the vaccination are related to mass media such as the internet, television, and radio stations [11].

Test of Significant Relationship

Table 14. Test of significant relationship between profile of the respondents and willingness to be vaccinated (Chi square)

Profile of respondents		Value	df	Asymp. Sig.
Sex	Pearson Chi-Square	0.152	1	0.697
	Likelihood Ratio	0.153	1	0.695
Age	Pearson Chi-Square	19.341	22	0.624
	Likelihood Ratio	25.291	22	0.283
Highest educational attainment	Pearson Chi-Square	0.73	2	0.693
	Likelihood Ratio	1.053	2	0.591
Years in teaching service	Pearson Chi-Square	11.816	13	0.543
	Likelihood Ratio	15.050	13	0.304
Existing illness	Pearson Chi-Square	0.774	3	0.856
	Likelihood Ratio	1.070	3	0.784
Vaccines received	Pearson Chi-Square	13.333	15	0.577
	Likelihood Ratio	17.237	15	0.305

The table 14 presents the test of significant relationship between the profile of the respondents and their willingness to be vaccinated. The table shows that age, sex, highest educational attainment, years in teaching service, existing illness, and vaccines received are not significantly related to their willingness to be vaccinated.

This implies that none of the profile of the respondents affect their willingness to be vaccinated.

DISCUSSION

Vaccination is a safe intervention that prevents diseases and save millions of people worldwide [12]. The main importance is when we get vaccinated, we're also protecting people that surround us by protecting our own self from any diseases [13]. Vaccines against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have been created in an uncommon time, and there are now presenting different antibodies that have been demonstrated to be successful in eliminating symptomatic COVID-19 diseases. As immunization may prevent COVID-19 related deaths, case seriousness, hospitalizations, and transmission, it is great to have a high degree of acceptance on currently accessible antibody formulations internationally and in every particular country. [14].

In the study only 65% of the respondents are willing to be vaccinated and the rest 35% of the respondent refuse and all of the respondents in this study are not yet vaccinated. Regarding to the willingness of the respondents to be vaccinated it is related to the news of CNN Philippines, where in the survey conducted by the Octa- Research Group from December 9 to 13, 2020, the result showed that 47% number of participants "can't say" if they are willing to be vaccinated or not if the COVID-19 vaccine is available at the time of the Survey and proven effective and safe. 25% of participants in Metro Manila are willing to get COVID-19 vaccine shot when the vaccine becomes available in the country, while 28% of the participants have said that they are not interested in getting the vaccine [15].

The majority reason of some respondents in the study who refused to be vaccinated are the fear of the vaccine safety. In addition, their fear of vaccine safety is related to the dengvaxia vaccine issue that causes a big trouble to Filipino people to be left in doubt and feared upon the releasing of the COVID-19 vaccine [16]. Each respondent have their own preferred brand for the vaccine and mostly of them choose Pfizer-BioNTech and some of them preferred Sinovac, Aztrazeneca and Johnson & Johnson's Jannsen.

According to Philippine News Agency (2021), Healthcare workers who received COVID-19 vaccines feel safer than ever to deal with their clients with added protection. The first administration of the COVID-19 vaccine in Ilocos Norte resulted a higher acceptance toll with an overall total of 930 individual vaccines distributed [17]. In Isabela COVID-19 were purchased from the British Pharmaceutical and the vaccine is AstraZeneca and expected to be delivered in the first week of July [18]. The result shows that majority of the respondent states that their information about the COVID-19 vaccine are insufficient and additionally majority of the respondents are female than male. However, certain studies stated that, Out Of the 672 members surveyed, 450 (67%) said that they would acknowledge a COVID-19 antibody if it were suggested for them. Males (72 percent) were found to be more likely to accept the vaccine than females [19]. Public health workers and authorities need precise interventions to decrease immunization awareness levels and improve their acceptance level. The researchers believed these results and precisely the low rate of acceptability are frightening to health workers and authorities and should find and disturb further studies on the root causes and need for awareness programs. These interventions should take the form of getting or saving the trust and willingness in national health workers and authorities and structured awareness programs that offer knowledgeable information about the safety and efficacy of the vaccines and the technology that was utilized in developing the vaccines [20].

CONCLUSION

The following conclusions were drawn considering the findings mentioned in the previous chapter. First, this study concluded that the majority of the respondents, in terms of profile variables, are female, ages ranging from 45 to 49, graduate of master's or doctor's degree, teaching for 1 to 7 years, mainly from School B, does not have any existing illnesses, and have received flu vaccine. Second, the respondents belong to the priority group B for the COVID-19 Vaccination Program of the National Government; hence, they are on the front line during this pandemic. This research concluded that 65% percent of them are willing to be vaccinated. Third, the most preferred brand of the respondents who are willing to be vaccinated is Pfizer-BioNTech. Fourth, the three leading reasons of the respondents who refused to be vaccinated are fear over vaccine safety, worried about the effects of the COVID vaccine, and worried about the effectiveness of the COVID-19 vaccine. Fifth, this research found out that majority of the respondents does not have sufficient information about the vaccine. Sixth, this research determined that most of the respondents' source of information is through the internet. Lastly, as can be seen in the statistical analysis of the data using the Chi-square test, the researchers concluded that the profile of the respondents does not affect the willingness of the respondents to be vaccinated.

The researchers propose the following recommendation taking into consideration the findings and conclusions. First, the researchers recommend future researchers conduct the study on other priority groups identified by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF) and Interim National Immunization Technical Advisory Group (iNITAG). Second, the researchers recommend government agencies responsible for the campaign of the COVID-19 vaccine take into consideration the findings

of this study regarding the reasons of refusal of the respondents for the improvement of the campaign about the COVID-19 vaccine. Lastly, future researchers who have an interest in the subject may conduct a similar study and add other variables.

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