
Perceptions and Factors Affecting COVID-19 Vaccine Uptake: A Cross-sectional Study

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ABSTRACT

Background: The COVID-19 pandemic has drastically affected the world and our country. One of the keys to the Philippines' fight against this COVID-19 pandemic was using the COVID-19 vaccines against it. Thus, this study aimed to evaluate the COVID-19 vaccine uptake. Specifically, it aimed to determine the perceptions and reasons for vaccine acceptance and factors affecting it in terms of the sociodemographic profile, such as age, religion, sex, civil status, highest educational attainment, family monthly income, presence of a comorbid condition, employment status, occupation, influential person, and source of information on COVID-19 vaccines.

Methods: A non-probability convenience sampling using social media as the source of participants in the study. A total of 3,097 participants were included in the study. A face-validated self-administered online questionnaire was used. Descriptive and inferential statistics were used to analyze the data collected. Determining factors affecting vaccine acceptance was analyzed in the univariate and multivariate statistics. Chi-square test and logistic regression were used in the univariate analysis, odds ratio and the 95% Confidence interval were determined. Multinomial logistic regression was utilized in the multivariate analysis with a level of significance set at $\alpha=0.05$. Statistical Package for the Social Sciences (SPSS) version 22 was used in the study.

Results: This study showed that less than 2% of the population is hesitant to COVID-19 vaccination. The main reasons for vaccine acceptance, among others, were the benefits of COVID-19 vaccination outweighing the possible side effects, the importance of everyone being eligible to get the COVID-19 vaccine, and that people trust the healthcare worker in advising them to get the COVID-19 vaccine. On the other hand, the top reasons for COVID-19 vaccine hesitancy were individuals' fear of the side effects of the herein vaccine, reading news regarding people dying from the said vaccine, and the respondents do not trust the COVID-19 vaccines. Present study also showed that religion and family economic status were significantly associated with vaccine acceptance.

Conclusion: During the COVID-19 vaccine roll-out, religion, and family economic status were significantly associated with vaccine acceptance.

Key words: COVID-19, vaccine acceptance, vaccine hesitancy, vaccine uptake

The COVID-19 pandemic has drastically affected the world. One of the keys to the Philippines' fight

against this COVID-19 pandemic was using the COVID-19 vaccines against it. The Department of Health (DOH) and the Task Group COVID-19 Immunization Program in 2021 worked on plans regarding vaccine deployment and vaccination; hence, the Philippine National Deployment and Vaccination Plan for COVID-19 Vaccines was developed. Based on the vaccination plan for COVID-19 Vaccines, there is a three-year vaccination roadmap wherein each year from 2021 to 2023, the identified eligible part of

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the Philippine residents' population will be given the vaccine.¹ As of September 1, 2021, as posted by the Philippine News Agency, a total of 51,900,590 doses have been delivered to the country since February, and only a total of 33,706,950 doses were administered, of which only 13,958,418 or 19.69% of eligible residents targeted for the COVID-19 vaccination program are now fully inoculated and more than 19 million others with the first dose² which is far from the 70 million targets. The government plans to achieve 63% of the population to be fully vaccinated this 2021¹; correspondingly, the SARS-CoV-2 herd immunity threshold is estimated to range between 50 to 67% (Omer et al., 2020). However, six months after the vaccination program implementation, only 19.69% of the population is fully vaccinated.¹ A limited supply of COVID-19 vaccines may be a factor that cannot be controlled. However, with the notion that many doses are still available for injection, vaccine acceptance in the population may remain a problem. What factors could affect COVID-19 vaccine acceptance? What are people's perceptions regarding the said vaccines? Vaccine availability may be a factor (rural versus urban areas). Moreover, acceptance of the COVID-19 vaccine may be influenced by several factors, such as socio-demographic factors (age, sex at birth, place of residence -- urban vs. rural, civil status, socioeconomic status, educational background, co-morbidities, and employment status).

Studies have shown that vaccine acceptance has been influenced by several factors.³⁻⁷ According to the studies, vaccine acceptance depends on time, space, ethnicity, social class, and human behavior.⁸⁻¹² According to Larson, et al.¹³, vaccine hesitancy is rarely population-wide, and it is specific to subgroups within the population; however, it is essential to identify the specified subgroup, which is hesitant about the vaccination, identify their concerns to address these various reasons driving their hesitancy. There are only a few studies that have researched the COVID-19 vaccine uptake, perceptions, and factors that influence this; social science research showed that checking the broader sociocultural context leads to a better understanding of vaccination decision-making.¹⁵⁻¹⁹ In fact, according to AlMohaithef, et al.²⁰ and Poltorak, et al.²¹ vaccination is only a part of a "wider social world," and several factors can influence vaccination decisions.

Understanding the COVID-19 vaccine uptake will aid in health promotion campaigns to increase the number of people vaccinated and aid in planning

vaccination drives, hence achieving the Philippine government's herd immunity goal. Thus, this study aimed to evaluate the COVID-19 vaccine uptake. Specifically, it aimed to determine the perceptions and reasons for vaccine acceptance and hesitancy and factors affecting vaccine acceptance in terms of the socio-demographic profile, such as age, current residence, religion, sex, civil status, highest educational attainment, socioeconomic status, co-existing medical condition, employment status, occupation, and source of information on COVID-19 vaccines.

The authors hypothesized that socio-demographic characteristics are associated with vaccine acceptance.

MATERIALS AND METHODS

Study Design

This study utilized an analytical cross-sectional study to evaluate COVID-19 vaccine uptake. In a cross-sectional study design, it is difficult to determine the causal relationship between the dependent and independent variables. Although the participants' sociodemographic characteristics were used as the independent variable, the authors are certain that it preceded the dependent variable, which is vaccine acceptance.

Setting

Recruitment of participants was done via different online platforms; hence, all have access to the World Wide Web from November 10 to 24, 2021.

Participants

This study included Filipino adults aged at least 18 years old residing in the Philippines during data collection. Non-probability convenience sampling was used. Self-selection through posting invitations containing information regarding the research's eligibility criteria, a link, and a QR code to access the informed consent and questionnaire.

Variables and Data Source

Study variables were collected using a face-validated questionnaire and underwent cognitive debriefing during pretesting. The variables collected were as follows:

Vaccine acceptance was defined in this study as the assent to be vaccinated or willingness to be vaccinated. That was determined by an answer of “I am already vaccinated” or “yes” to the willingness to be vaccinated question.

Vaccine hesitancy was defined in this study as a delay in acceptance or refusal of vaccination despite the availability of vaccination services (Larson, et al., 2014). This was determined by a “no” or “not sure or maybe” answer on the willingness to be vaccinated question.

Sociodemographic Variables

Age, which is the age in years from the last birthday. This will be presented as mean and standard deviation.

Current residence is a region in the Philippines where the participant resides. This was categorized as National Capital Region, Cordillera Autonomous Region, Region I -Ilocos, Region II - Cagayan Valley, Region III - Central Luzon, Region IV-A- Calabarzon, Mimaropa, Region V - Bicol, Region VI - Western Visayas, Region VII - Central Visayas, Region VIII - Eastern Visayas, Region IX -Zamboanga Peninsula, Region X - Northern Mindanao, Region XI - Davao, Region XII - Soccskargen, Region XIII - Caraga, or BARMM -Bangsamoro.

Religion, which is the religious affiliation of the participant. This was categorized as Born-Again Christian, Iglesia ni Cristo, Muslim, Roman Catholic, or others.

Sex at birth, which is the biological sex of the participant at birth. This was categorized as male or female.

Civil status, which is the participant’s status in relation to marriage. This was categorized as single, married, separated/annulled, or widow/er (Philippine Statistics Authority, 2017).

Highest educational attainment, which is the highest educational attainment of the participant, was categorized as no formal education, high school undergraduate, high school graduate, college undergraduate, college graduate, or post-baccalaureate/ master/ doctorate (Philippine Statistics Authority, 2013).

Socioeconomic status was based on the average monthly family income of the participants. This was categorized as below 10,500 pesos (below the poverty line) and 10,500 pesos and above (above the poverty line) (Philippine Statistics Authority, 2019).

Co-existing medical condition, which is with or without the presence of co-morbid condition/s.

Employment status is the status of the participant in relation to being employed. This was categorized as employed, unemployed, or business owners/ self-employed.

The source of Health Information is where the participants gain health information. This can be from tri-media or social media, medical journals or webinars, medical front liners, DOH or Center for Disease Control (CDC), World Health Organization (WHO), or others.

Person of great influence in the decision to get vaccinated against COVID-19 are persons of significant influence to the participant to get vaccinated. This can be themselves, healthcare provider/s, family members, government officials, peers, social influencers or celebrities, or religious leaders.

Perceptions About the COVID-19 Vaccine

Vaccine safety is the participant’s perception that the vaccine is safe. An “agree” answer to the vaccine safety question means the participant perceives the COVID-19 vaccine is safe but otherwise unsafe.

Prevention of SARS-COV2 infection is the participant’s perception of the efficacy of the COVID-19 vaccine to prevent SARS-COV2 infection. An answer of “agree” to the question means the participant perceives that the COVID-19 vaccine is beneficial in preventing SARS-COV2 infection; otherwise not beneficial.

Prevention of severe COVID-19 is the participant’s perception of the efficacy of the COVID-19 vaccine to prevent severe COVID-19. An answer of “agree” to the question means the participant perceives that the COVID-19 vaccine is beneficial in preventing severe COVID-19; otherwise not beneficial in preventing severe disease.

COVID-19 vaccine is voluntary is the participant’s perception that the COVID-19 vaccine is voluntary. An answer of “a matter of choice” means that the participant perceives the COVID-19 vaccine as voluntary or otherwise mandatory.

Reasons for acceptance/hesitancy to COVID-19 vaccine is a list of reasons why participants are either acceptant or hesitant to COVID-19 vaccine. Participants may choose more than one reason.

Bias

Efforts were made to address potential bias in this study. The questionnaire was self-administered so the participant could answer at the most convenient time. No participant identifiers, such as name, birthday, address, or e-mail, were collected. These address random response bias, Hawthorne's effect, and social desirability bias.

Study Size

The sample size was calculated using Open epi, a web-based application for computing sample size for cross-sectional and cohort studies. The two-sided alternative hypothesis with an alpha error of 5% and a power of 95% was set. Using the assumption that 69.34% were willing to be vaccinated among married individuals and single individuals, 58.9% (Al-Mohaithef, et al., 2020), the total computed sample size was 2,714. The calculation considered control variables and possible withdrawal after submitting the informed consent and non-response.

Statistical Methods

Descriptive and inferential statistics were done using SPSS version 22. Categorical variables were presented in tables with their frequency and percentage. Continuous variable such as age was presented as mean and standard deviation. The factors affecting vaccine acceptance were analyzed in the univariate and multivariate statistics: Chi-square test and logistic regression were used in the univariate analysis.

The odds ratio and the 95% confidence interval were calculated. Multinomial logistic regression was utilized in the multivariate analysis, and the significance level was set at $\alpha=0.05$.

RESULTS

Participants

There were 3,116 who responded to the call to participate in the study. Nineteen were excluded because they were less than 18 years old. Hence, a total of 3,097 participants were included in the analysis.

Demographic Characteristics

Most participants were females; the mean age was 29.8 (SD 10.06). Most participants reside in the National Capital Region (NCR), are single, are Roman Catholics, mostly at least college graduates, and are self-employed or have businesses. Most have a family who has income above the poverty line. As for the clinical characteristic of the respondents, most of them do not have comorbid conditions (Table 1).

Table 1. Socio-demographic and clinical profile, Philippines, November 10 to 24, 2021

Characteristics	n (%)
Current Residence	
NCR*	1,602 (51.7)
Region I	69 (2.2)
Region II	226 (7.3)
Region III	321 (10.4)
Region IV	489 (15.8)
Region V	78 (2.5)
Region VI	105 (3.4)
Region VII	16 (0.5)
Region VIII	11 (0.4)
Region IX	28 (0.9)
Region X	23 (0.7)
Region XI	13 (0.4)
Region XII	9 (0.3)
Region XIII	2 (0.1)
CAR*	31 (1.0)
BARMM*	12 (0.4)
Mimaropa	62 (2)
Sex	
Male	963 (31.1)
Female	2,134 (68.9)
Civil Status	
Single	2,301 (74.3)
Married	739 (23.9)
Separated/Annulled	24 (0.8)
Widow/er	33 (1.1)
Educational Attainment	
No formal education	4 (0.1)
HS* undergraduate	33 (1.1)
HS* graduate	241 (7.8)
College undergraduate	585 (18.9)
College graduate	1,541 (49.8)
Post-baccalaureate/Master/Doctorate	693 (22.4)
Religion	
Roman Catholic	2,289 (73.9)
Born-again Christian	388 (12.5)
Iglesia ni Cristo	90 (2.9)
Muslim	74 (2.4)
Others	256 (8.3)
Family Monthly Income	
Below poverty line	462 (14.9)
Above poverty line	2,635 (85.1)
Presence of Comorbid Condition	650 (21.0)
Employment Status	
Employed	1,393 (45)
Self-employed	1,400 (45.2)
Unemployed	304 (9.8)

Legend: * National Capital Region (NCR), Cordillera Autonomous Region (CAR), Bangsamoro Autonomous Region of Muslim Mindanao (BARMM), High School (HS)

Almost all the participants get health information regarding COVID-19 through tri-media or social media. (Table 2) A little less than half of them decided for themselves the vaccination; more than one-third had healthcare providers as the ones that influenced their decision (Table 3).

Most participants perceived that COVID-19 vaccines are safe, can reduce one's risk of getting the disease, help give protection from getting the severe form of the disease, and that the vaccination should be voluntary. (Table 4)

Almost all participants accept the COVID-19 vaccine, and very few are hesitant. Those labeled as having accepted the vaccine were those who were already vaccinated, those who expressed their desire to get vaccinated if not yet vaccinated, and those who were hesitant were those who were undecided and expressed their unwillingness to be vaccinated. (Table 5).

Table 6 shows the reasons for COVID-19 vaccine acceptance, from the most frequent to the least, with the benefits of the COVID-19 vaccine outweighing the possible side effects being the most frequent reason and getting their preferred brand of vaccine the least.

Table 2. Source of health Information

Source of Health Information	n (%)
Tri media or social media	3,002 (97.3)
Medical journals or webinars	27 (0.9)
Medical frontliners	20 (0.6)
DOH* or CDC*, or WHO*	11 (0.4)
Workplace	9 (0.3)
Family or friends	3 (0.1)
All mentioned	7 (0.2)
Others	7 (0.2)

Legend: * Department of Health (DOH), Center for Disease Control (CDC), World Health Organization (WHO)

Table 3. Person of great influence in the decision to get vaccinated for COVID-19

Source of Health Information	n (%)
I decide for myself	1,433 (46.6)
Healthcare providers	1,093 (35.6)
Family members	421 (13.7)
Government officials	85 (2.8)
Peer	25 (0.8)
Social media influencers or celebrity	8 (0.3)
Religious leaders	7 (0.2)

Table 4. Perception regarding COVID-19 vaccines

Source of Health Information	n (%)
Safe	
Agree	2,831 (91.4)
Disagree	43 (1.4)
No idea	134 (4.3)
No answer	89 (2.9)
Reduce the risk of infection	
Agree	2,802 (90.5)
Disagree	149 (4.8)
No idea	105 (3.4)
No answer	41 (1.3)
Protection from severe disease	
Agree	2,932 (94.7)
Disagree	36 (1.2)
No idea	91 (2.9)
No answer	38 (1.2)
The choice to be vaccinated	
Mandatory	1,243 (40.1)
Voluntary	1,791 (57.8)
No answer	63 (2.0)

Table 5. COVID-19 vaccine decision

Decision	n (%)
Vaccine Acceptance	3,042 (98.2)
Vaccine Hesitancy	55 (1.8)

Table 6. Reasons for COVID-19 acceptance

Reasons	n (%)
The benefits of the COVID-19 vaccine outweigh the possible side effects	2,151 (71)
It is important for everyone eligible to get the COVID-19 vaccine.	2,016 (67)
I am an advocate of the COVID-19 vaccine.	1,224 (40)
I trust the healthcare worker in advising me to get the COVID-19 vaccine.	1,594 (55)
Most people I know will get/got vaccinated for COVID-19.	638 (21)
I will get (I got) my preferred brand.	415 (13)

Table 7 shows the reasons for vaccine hesitancy, with the fear of the side effects of the COVID-19 vaccines being the most frequent and political reasons being the least.

Table 7. Reasons for COVID-19 hesitancy	
Reasons	n (%)
I fear the side effects of the COVID-19 vaccine.	37 (67)
I read news of people dying from the COVID-19 vaccine.	19 (35)
I do not trust the COVID-19 vaccine.	15 (27)
I am healthy	12 (22)
I do not want to get the COVID-19 vaccine due to my religious beliefs.	6 (11)
The Dengvaxia issue influenced my decision not to have the COVID-19 vaccine.	5 (9)
I do not believe in COVID-19	4 (7)
I do not like to get the COVID-19 vaccine due to political reasons.	2 (4)

Factors affecting vaccine decisions were assessed, and univariate analysis showed that religion, educational attainment, family economic status, and those who influence vaccination were significantly associated with vaccine acceptance (Table 8).

In the multivariate analysis, however, only religion and family monthly income were the factors that were significantly associated with vaccine acceptance. Holding all other variables constant, the odds of COVID-19 acceptance were almost three times greater among Catholics than other religions not specified in the list. Moreover, among those whose family income is below the poverty line, the odds of COVID-19 acceptance were about 0.22 times lower than those whose family is above the poverty line. (Table 9).

DISCUSSION

This study showed that 1.8% of participants were hesitant about COVID-19 vaccination. Moreover,

Table 8. Univariate analysis of the factors affecting COVID-19 vaccine acceptance			
Factors	Decision to be vaccinated		
	Acceptance n (%)	Hesitancy n (%)	p-value
Religion			0.00
Catholic	2,266 (99.0)	23 (1.0)	
Born Again Christian	367 (94.6)	21 (5.4)	
Iglesia ni Cristo	88 (97.8)	2 (2.2)	
Muslim	72 (97.3)	2 (2.7)	
Others	249 (97.3)	7 (2.7)	
Sex			0.23
Male	950 (98.7)	13 (1.3)	
Female	2,092 (98.0)	42 (2.0)	
Civil Status			0.18
Single	2,264 (98.4)	37 (1.6)	
Married	723 (97.8)	16 (2.2)	
Separated or annulled	24 (100)	0 (0)	
Widow/er	31 (93.9)	2 (6.1)	
Educational Attainment			0.00
No formal education	4 (100)	0 (0)	
HS undergraduate	33 (100)	0 (0)	
HS graduate	231 (95.9)	10 (4.1)	
College undergraduate	568 (97.1)	17 (2.9)	
College graduate	1,518 (98.5)	23 (91.5)	
Post-baccalaureate/masteral/doctorate	688 (99.3)	5 (0.7)	
Family Monthly Income			0.00
Below poverty line	440 (95.2)	22 (4.8)	
Above poverty line	2,602 (98.7)	33 (1.3)	
Presence of Comorbid Condition	637 (98.0)	12 (2.0)	0.63

Employment Status			
Employed	1,3772 (98.3)	21 (1.5)	0.52
Self-employed or Business Owner	299 (98.5)	5 (1.6)	
Unemployed	1,371 (97.9)	29 (92.1)	
Source of Health Information on COVID-19			0.98
Medical frontliners	20 (100)	0 (0)	
Medical journals or webinars	2,949 (98.2)	53 (1.8)	
DOH or CDC, or WHO	3 (100)	0 (0)	
Tri media or social media	3 (100)	0 (0)	
Family or friend	9 (100)	0 (0)	
Workplace	7 (100)	0 (0)	
Others	7 (100)	0 (0)	
Person of great influence to get vaccinated for COVID-19			0.00
I decide for myself	1,416 (98.8)	17 (1.2)	
Healthcare providers	1,083 (99.1)	10 (0.9)	
Government officials	82 (96.5)	3 (3.5)	
Family members	410 (97.4)	11 (2.6)	
Peer	23 (92.0)	2 (8.0)	
Religious leaders	6 (85.7)	1 (14.3)	
Social media influencers or celebrity	8 (100)	0 (0)	

Table 10. Multivariate analysis of the factors affecting COVID-19 vaccine acceptance

Factors	Odds Ratio (95% Confidence Interval)	p-value
Religion		
Catholic vs. others	2.88 (1.03 – 8.09)	0.045
Born-again Christian vs. others	0.37 (0.13 – 1.04)	0.059
Iglesia ni Cristo vs. others	0.77 (0.14 – 4.19)	0.761
Muslim vs. others	1.47 (0.16 – 13.14)	0.731
Family Monthly Income		
Below vs. Above poverty line	0.22 (0.11 – 0.43)	<0.001

only religion and family monthly income were the factors that were significantly associated with vaccine acceptance. Holding all other variables constant, the odds of COVID-19 acceptance were almost three times greater among Catholics than other religions not specified in the list. Moreover, among those whose family income is below the poverty line, the odds of COVID-19 acceptance were about 0.22 times lower than those whose family is above the poverty line.

Prior to the existence of COVID-19 vaccines, there was already hesitancy toward other vaccines, which has become an emerging global problem.²² The WHO included it as one of the top 10 global health threats in 2019. To date, research regarding acceptance and hesitancy to other vaccines in the past showed varied reasons^{7,12,23,24} that need to be understood precisely address these concerns.²² World Health Organization Strategic Advisory Group mapped out

the extensive and varied factors for vaccine hesitancy and acceptance by Experts.²⁵ With this global health threat to older vaccines, acceptance, and hesitancy of these newly developed COVID-19 vaccines should be considered.

Only a few studies have researched the prevalence of COVID-19 vaccine acceptance and its determinants.^{14,15} Present study showed that less than 2% of the population have vaccine hesitancy, closely comparable with the studies made by Lazarus, et al.²⁶ that Asian nations (South Korea and Singapore), as well as China, exceeded 80% of acceptance, probably due to these nations' strong trust in their central governments.²⁶ However, according to the WHO (2021), vaccine hesitancy in the Philippines is higher than in other countries. There are contrasting reports of gender effects in the literature where females were more likely to accept the vaccine^{20,26,27} compared to

some studies where males have higher acceptance of the vaccine.²⁸ In the present study, Filipino females were more likely to take the vaccine than males, though not statistically significant. According to Ruiz, et al.²⁹, individuals who finished high school and could go to college were more likely to have a more profound knowledge regarding vaccination, hence, more likely to accept vaccination. This also agreed with the present study that educational attainment was associated with vaccine acceptance, though only statistically significant in the univariate analysis. Moreover, according to the studies^{26,29,30}, households with higher incomes have a higher prevalence of accepting the COVID- 19 vaccine compared to those who have a lower income, as also found in the present study that the odds of COVID-19 acceptance in those with an income of below 10,500 were about 88% lower compared to those with an income of 10,500 and above. In addition, according to Kane, et al.³¹, vaccine hesitancy is possibly a result of the health promotion focus on lifestyle and individual action and the expansion of “consumerism” in the health care system, which means an individual’s participation in his/her own decisions regarding health. The present study proved that individual decisions are the most influential in terms of vaccination decisions.

The limitation of this study is its generalizability to the target population, which are eligible Filipinos for the COVID-19 vaccine with access to the world wide web. This is due to the sampling methodology that was utilized. It is not easy or even impossible to get a sampling frame of all Filipinos with access to the world wide web, hence the sampling method choice. According to Caple, et al.³² online surveys are not representative of the general population due to uneven access to the Internet.

This study was implemented with daily variations of perceived threats by the COVID-19 pandemic. The Philippines is just at around 30% of the fully-vaccinated population. However, almost everyone in the population (except a specific age range of children) was already eligible for vaccination but still could not achieve the goal of herd immunity as plotted by the government’s plans. The respondents were skewed in that most live in urban areas (51.7% of respondents live in NCR), where most people endured the most stringent and long-duration lockdowns and restrictions during this pandemic. The experience likely increased the desire to get vaccinated in comparison to those who lived in areas where the restrictions were not

that stringent³² noted in the present analysis which confirmed that those individuals living in urban areas (particularly in NCR with 1,602 respondents at 51.7% of the total respondents) have higher acceptance of the COVID-19 vaccine as compared to those in rural areas.

CONCLUSION

During the COVID-19 vaccine roll-out, the proportion of people with vaccine hesitancy was very minimal; there were only 1.8% of respondents in the present study who were hesitant, and the main reasons for their hesitancy were fear of the side effects of the COVID-19 vaccine, news about COVID- 19 vaccine that cause people dying, and lack of trust to COVID-19 vaccines. The authors also found that religion and family monthly income were the only factors significantly associated with vaccine acceptance.

As for recommendations: to have a positive influence on health behaviors, culturally informed health communication is vital; this should include constant and enhanced communication with various leaders from different organizations and sectors - religious, political, civic, and the like. Clear and maintaining consistency in communication by the government to the public is crucial in building the public’s confidence in the ongoing vaccination drives. Including explaining how vaccines were developed and how they work using the most straightforward terms that can cover people from all walks of life; the ongoing vaccination campaigns should also aim to explain the vaccines’ effectiveness, the doses needed, and the time needed to provide protection as well as the importance of the achievement of herd immunity. Vaccine communication strategies should address the population’s literacy level, identify trusted sources of information, and push beyond simply pronouncing and saying that vaccines are safe and effective. Building vaccine literacy should address the specific concerns and misperceptions of past issues regarding vaccination that brought distrust and sensitivity to religious and political beliefs.

Ethical Approval

This study underwent an ethical review and was approved by the Institutional Ethics Review Committee, FEU-NRMF.

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