
Level of Awareness, Attitudes and Perceptions of Filipino Adults in Quezon City on COVID-19 Vaccination

Elaiza Angelika B. Bautista, Janylle O. Gomez, Maria Elizabeth H. Guevarra, Jhienel Adrienne C. Junio, Nicole Abegail S. Taqueban and Richard Rupert T. Vicencio, RMT, MSMLS

ABSTRACT

This study assessed the level of awareness, attitudes, and perceptions of adult Filipino residents in Quezon City towards the COVID-19 vaccination. With a total of 100 respondents, a descriptive-quantitative research design, along with the non-probability snowball sampling technique, was utilized in this study. The findings had shown that most of the respondents possess a high level of awareness in terms of the types of COVID-19 vaccines. Moreover, it was found that most of the respondents have positive attitudes and perceptions towards the COVID-19 vaccination. Given these findings, this study constructed an infographic poster as an output.

Key words: COVID-19 vaccines, Pfizer BioNTech, Oxford AstraZeneca, Sinovac CoronaVac, Gamaleya Sputnik V, Moderna, Filipino adults, mass media, healthcare professionals, risk perceptions

Only natural that a preventive measure must be implemented in order to avoid the contraction of this disease. The procurement of vaccines is given the greatest importance and contemporary relevance as of today because these are developed mainly for safety, effectiveness and prevention. However, several factors affect the people's acceptance of the vaccines. Developing and procuring the vaccines is a challenge that raises certain dilemmas such as vaccine hesitancy, vaccine delay, and vaccine denial.¹

Although the result and effectiveness of COVID-19 vaccines have become more widely known, there are people who are still afraid to be vaccinated. There are existing challenges on what vaccine hesitancy is about in terms of its definition. Many possible factors associated with personal experiences, social interactions, cultural involvement, and political agenda may hinder the clear and distinct view of the scaling conceived attitudes towards vaccination.² WHO (2021) highlighted another existing challenge which is the data insufficiency regarding vaccine safety, efficacy and risks among HIV positive and severely immunocompromised individuals.³ Therefore, this study aimed to measure and delve deeper into the level of awareness, attitudes and

perceptions of the Filipino adults about the COVID-19 vaccination. This sought to evaluate the level of awareness of Filipino adults in terms of the different types of COVID-19 vaccines; attitudes in terms of the interactions between the people and mass media; their interactions between the people and health professionals; and their perceptions in terms of risks and the importance of COVID-19 vaccination for health maintenance.

The vaccines that were measured in the study were the ones that had arrived and had been administered from March to June 2021, namely: Pfizer BioNTech, Oxford AstraZeneca, Sinovac CoronaVac, Gamaleya Sputnik V, and Moderna. The remaining authorized vaccines in the Philippines that have yet to arrive and/or have not been administered up until June 2021 were excluded in the study.

MATERIALS AND METHODS

Study Design

The researchers utilized a descriptive, cross-sectional study design. A survey administration software was used to gather data from 100 respondents, aged 20 to 40 years old, and a resident of Quezon City.

The total number of respondents are computed using Slovin's formula.

The survey-questionnaire given consists of four parts: the demographic profile, the level of awareness in terms of the different brands of COVID-19 vaccines, the attitudes of the respondents towards COVID-19 vaccination, and the perceptions of the respondents towards the COVID-19 vaccination. The research instrument was validated by two psychometricians, and one Filipino language validator. A pilot test was also conducted among 20 participants who reside in the City of Caloocan. Moreover, Cronbach's Alpha Coefficient by Del Siegel was used to compute the results of the test as a measurement of the reliability of the research instrument. A coefficient of ≥ 0.7 indicates a reliable tool.

All of the respondents were informed regarding the purpose of the study, their right to refuse or withdraw, its duration, and the risks and benefits of the study. They were assured of the confidentiality and anonymity of their response.

Study Population

Residents in Quezon City were the chosen respondents because Quezon City, the largest city in the National Capital Region (NCR), reported to have the highest prevalence of COVID-19 cases in 2021. In terms of age group, the recommendation of the Department of Health (DOH) along with the Vaccine Cluster, only commenced the nationwide deployment of COVID-19 vaccine for minors aged 12 to 17 last November 3, 2021.⁴ For the vaccine types, five (5) Brands of Vaccines included those vaccines that had arrived and had been administered from March to June 2021.

Sample Size Estimation and Sampling Design

A total number of 100 respondents were surveyed in this study. It was computed via Slovin's formula with sample size represented as n . The overall population was represented as N and the margin of error represented as e , $n = N / (1 + Ne^2)$. This study employed the non-probability sampling technique known as the snowball sampling in which it is being utilized in cases where participants have certain characteristics that needed to be found. Additionally, this technique helps the researchers identify and recruit other prospective participants required for the test or study.⁵

Out of the two million residents of the entire Quezon City, six hundred thousand residents were 20 to 40 years of age, residing in the said city according to the 2021 census (DOH, 2021). The researchers retrieved 101 responses from a total of 100 for the reason that one clicked *refuse*. The retrieval became more challenging due to the consequential and restrictive circumstances of the COVID-19 pandemic, the strict compliance to the schedule given, and the convenience of the respondents to participate since the survey was conducted online. This was mentioned as one of the limitations of this study.

Research Instrument

This study utilized a 60-item survey questionnaire in both English and Filipino language as a research instrument to aid in the gathering of information about the level of awareness, attitudes, and perceptions of the Filipino adults residing in Quezon City on COVID-19 vaccination.

The first part of the survey questionnaire was composed of items used to gather data from respondents about their demographic profile: Age, sex, area of residency in Quezon City, vaccination, and comorbidities. Providing their names was completely optional.

The second part of the survey questionnaire was composed of questions or items used to gather data about their level of awareness in terms of the different types of COVID-19 vaccines, namely: Pfizer BioNTech, Oxford AstraZeneca, Sinovac CoronaVac, Gamaleya Sputnik V, and Moderna. Each type of vaccine had four (4) statements that aim generate answers that describe or explain the respondents' level of awareness thus the scale: Extremely Aware (4), which means the participant is highly aware of the given statement; Aware (3) means the participant has average awareness of the given statement; Slightly Aware (2), which means the participant has minimal awareness of the given statement, and, Unaware (1) which means the participant has no idea of the given statement.

The third part of the survey-questionnaire had items on the respondent's attitude toward COVID-19 vaccination in terms of COVID-19 vaccines, interaction between the people and mass media, and interaction between the people and health professionals. The aforementioned variables were separated into three sections: One (1) for the COVID-19 vaccines, one (1) for the interaction between the people and mass

media, and one (1) for the interaction between the people and health professionals. Each variable had eight (8) statements regarding the respective attitudes of the people towards COVID-19 vaccination that are scaled and answered by Strongly Agree (5), which expresses that the participants are highly certain that the statement provided is correct, Agree (4), which expresses that the participants believe that the statement provided is correct, Slightly Agree (3), which expresses that the participants believe that the statement provided is slightly correct, Disagree (2), which expresses that the participants believe that the statement provided is incorrect, and, Strongly Disagree (1), which expresses that the participants are highly certain that the statement provided is incorrect.

The last part of the survey-questionnaire dealt with their perceptions toward COVID-19 vaccination in terms of risk perceptions and importance of COVID-19 vaccination for health maintenance. The aforementioned variables were separated into two sections: One (1) for risk perceptions, and one (1) for the importance of COVID-19 vaccination. Each variable had eight (8) statements regarding the respective perceptions of people towards COVID-19 vaccination that were scaled and answered in the same scaling as that of the third part of the survey questionnaire

All of the data were processed into Google Sheets. Frequency Distribution and Weighted Mean were computed. A descriptive equivalence was designated to each scale of equivalent weighted mean. The findings were tabulated and also presented via Bar Graph.

Validity and Reliability of the Research

The research instrument was constructed and was submitted for validation to the following: First is from psychometricians, who were responsible for the validation of the research instrument utilized in the study. The said instruments were validated by Ms. Mariko P. Watanabe, Rpm and Mr. Rafael Christian T. Enriquez, Rpm. The second was from a Filipino language validator, as this study also utilized a local version of this research instrument. It was validated by Prof. Anna Lissa M. Gonzales, Ed.D.

A pilot test to measure the reliability of the research instrument was authorized by the research adviser. It was conducted among 20 Filipino adults residing in Caloocan City (residents outside Quezon City), which was 20% of the population size used in this study. The results of the test were computed

via Cronbach's Alpha coefficient formulated by Del Siegle. It served as a tool to measure the reliability of Likert scale surveys and the variable of interest such as the level of awareness, attitude and perceptions of an individual, which are naturally difficult to measure in the first place (Stephanie, 2014). Attaining a coefficient of 0.7 and above shows that the research instrument is a reliable tool.

Ethical Considerations

The Research Center and Development (RCD) and the Institutional Ethics Review Committee (IERC) of FEU-NRMF with the study protocol code FEU-NRMF IERC 2021 – 0104, approved this study. In addition, participation was voluntary in which respondents were assured that all information collected shall remain confidential and would not be used for any other purposes. Compensation was not provided to the respondents, and there was no known harm involved in participating in this study.

RESULTS

A 60-item questionnaire was answered by the qualified participants, wherein, the following were calculated and became the basis of the discussion. The outcome was used to assess the level of awareness, attitudes, and perceptions of adults in Quezon City on the COVID-19 vaccination. The results are demonstrated by using tables – for the weighted mean and its descriptive equivalent – and bar graphs to show its differences accurately.

Level of Awareness of the Respondents in Terms of Different Covid-19 Vaccine Types

The first category is about the awareness of the people about the five (5) authorized COVID-19 vaccines used in the study. It is composed of 4 indicators that revealed the awareness of the respondents about the basic information about the vaccines.

Table 1 presents the level of awareness of Filipino adults in Quezon City regarding Pfizer BioNTech COVID-19 vaccine. The results showed that the respondents are extremely aware about the presence and characteristics of what Pfizer BioNTech vaccine possesses with an overall weighted mean of 3.49.

The first indicator is people's awareness about the existence of the vaccine Pfizer, which showed

that 74% of the population are extremely aware about the presence of this vaccine, 25% are aware, and only 1% are not aware of its existence. Furthermore, the respondents are extremely aware (68%) of the high efficacy rate of the vaccine, based on the answers from the second indicator, followed by 26% who are aware, 5% who are slightly aware and only 1% unaware. Moreover, on the symptoms that may be experienced after receiving the doses revealed that 65% of the respondents are extremely aware 23% (aware), 9% (slightly aware), and 3% (unaware).

On the other hand, only the indicator about the developer and the manufacturer of the Pfizer BioNTech vaccine received a rating 'aware'. As its percentages showed 42% (extremely aware), 33% (aware), 22% (slightly aware), and 3% (unaware).

Table 2 presents the level of awareness of Filipino adults in Quezon City on Oxford AstraZeneca COVID-19 vaccines. The collected data showed an overall weighted mean of 3.35 which has a descriptive equivalent of extremely aware.

Findings revealed that the respondents are extremely aware (74%) of the existence of this vaccine, followed by 24% who are aware and 2% who are slightly aware. In addition, the second indicator has the same descriptive equivalent with the first one. The awareness of the efficacy rate against symptomatic COVID-19 to elderly people has percentages of 48% (extremely aware), 34% (aware), 17% (slightly aware), and 1% (unaware). Sixty two percent of respondents are extremely aware of the possible side effects they may experience after receiving the doses.

Table 1. Level of awareness of the respondents on Pfizer BioNTech

Indicators	Weighted Mean	Descriptive Equivalent
1. Aware of the existence of this vaccine.	3.72	Extremely Aware
2. Aware that this vaccine has a highest efficacy rate of 95% against symptomatic COVID-19.	3.61	Extremely Aware
3. Aware that this vaccine was developed and manufactured by the partnership of the German company BioNTech and the American company Pfizer.	3.14	Aware
4. Aware that the people who receive this vaccine experience mild to moderate symptoms, such as headache, chills, fatigue, and pain or swelling at the injection site, which lasts within one or two days.	3.50	Extremely Aware
Overall	3.49	Extremely Aware
Legend: No Awareness: 1.00 - 1.73 ; Slightly Aware: 1.74 - 2.49 ; Aware: 2.50 - 3.24 ; Extremely Aware: 3.25 - 4.00		

Table 2. Level of awareness of the respondents on Oxford AstraZeneca

Indicators	Weighted Mean	Descriptive Equivalent
1. Aware of the existence of this vaccine.	3.72	Extremely Aware
2. Aware that this vaccine has an efficacy rate of 85% against symptomatic COVID-19 in people 65 years and older, and is recommended for people with comorbidities.	3.29	Extremely Aware
3. Aware that this vaccine was developed by British-Swedish pharmaceutical company AstraZeneca in partnership with Oxford University.	2.93	Aware
4. Aware that people who receive this vaccine experience symptoms, such as fatigue, headache, feverishness, myalgia (muscle pain), and pain and tenderness at the injection site.	3.47	Extremely Aware
Overall	3.35	Extremely Aware
Legend: No Awareness: 1.00 - 1.73 ; Slightly Aware: 1.74 - 2.49 ; Aware: 2.50 - 3.24 ; Extremely Aware: 3.25 - 4.00		

26% are aware, 9% are slightly aware, and 3% are unaware. However, for the awareness of its developer, more participants are aware (38%) than extremely aware (31%); 24% of them are slightly aware and 7% are not unaware about it. It means that the respondents are not extremely knowledgeable about the fact that the AstraZeneca company collaborated with Oxford University in developing this vaccine.

Table 3 presents the level of awareness of Filipino adults in Quezon City on Sinovac CoronaVac COVID-19 vaccines and the outcome exhibited a total weighted mean of 3.50. All of the factors revealed an extreme awareness among the respondents that answered the survey. This indicates that the basic information about Sinovac CoronaVac Vaccine is well shared to all of the participants because it shows the highest descriptive equivalent among all of the available vaccines in the Philippines.

Each of the following factors has its own ratings. Consequently, the awareness of the existence of the Sinovac CoronaVac Vaccine has the percentages of 79% (extremely aware), 20% (aware), and only 1% is not aware. Furthermore, the knowledge about the efficacy rate based on the trials conducted before had the ratings of 56% (extremely aware), 27% (aware), 12% (slightly aware), 5% (unaware). On the other hand, the indicator about the developer of this vaccine accumulated scores of 68% (extremely aware), 21% (aware), 10% (slightly aware), and 1% (unaware). This shows that among all the vaccines present in the Philippines, most of the participants know that Sinovac is from the Chinese-based pharmaceutical company, Sinovac Biotech. Lastly,

the awareness of the symptoms that the participants may experience after being injected by the vaccine resulted in 55% extreme awareness, then 26% awareness, 15% slight awareness, and only 4% of them are not aware.

Table 4 shows the level of awareness of Filipino adults residing in Quezon City regarding the Gamaleya Sputnik V vaccine. It garnered an overall weighted mean of 2.75, signifying that the respondents are aware of the vaccine's existence.

When they were asked about whether they are aware of the vaccines, 91.6% efficacy rate, about 39% of the respondents are slightly aware about it.⁶ It can also be noted that 35% of the respondents are aware where the vaccine was manufactured, which was in the Gamaleya National Center of Epidemiology and Microbiology in Russia.⁷ And when asked whether they are aware of the side effects upon vaccine inoculation, about 30% of the respondents are aware. This indicates that after the administration of vaccines, the respondents are aware that people experience certain side effects such as pain on the injection site, flu-like illness, headache, nausea, etc.

Table 5 presents the level of awareness of Filipino adults residing in Quezon City regarding their knowledge on the Moderna vaccine. It garnered an overall weighted mean of 3.40 with a descriptive equivalent of extremely aware (75%), indicating that the respondents are extremely aware of the vaccine's existence. When asked regarding their awareness of the vaccine's efficacy rate of 94.1%, about 58% of the respondents claimed that they are extremely

Table 3. Level of awareness of the respondents on Sinovac CoronaVac

Indicators	Weighted Mean	Descriptive Equivalent
1. Aware of the existence of this vaccine.	3.78	Extremely Aware
2. Aware that this vaccine has an efficacy rate of 65-91% based on Trials done in Brazil, Indonesia and Turkey.	3.34	Extremely Aware
3. Aware that this vaccine was developed by a Chinese-based pharmaceutical company called Sinovac Biotech.	3.56	Extremely Aware
4. Aware that people who receive this vaccine experience symptoms such as fatigue, headache, diarrhea, arthralgia (pain in the joints), sore throat, abdominal pain, and pain and swelling on the injection site.	3.32	Extremely Aware
Overall	3.50	Extremely Aware

Legend: No Awareness: 1.00 - 1.73 ; Slightly Aware: 1.74 - 2.49 ; Aware: 2.50 - 3.24 ; Extremely Aware: 3.25 - 4.00

Table 4. Level of awareness of the respondents on Gamelaya Sputnik V

Indicators	Weighted Mean	Descriptive Equivalent
1. Aware of the existence of this vaccine.	3.08	Aware
2. Aware that this vaccine was known to have an efficacy rate of 91.6%, which was taken from a clinical trial consisting of 19, 866 participants.	2.51	Aware
3. Aware that this vaccine was developed at Gamaleya National Center of Epidemiology and Microbiology in Russia.	2.70	Aware
4. Aware that people who receive this vaccine experience symptoms such as flu-like illness, headache, fatigue, and injection site reactions.	2.70	Aware
Overall	2.75	Aware

Legend: No Awareness: 1.00 - 1.73 ; Slightly Aware: 1.74 - 2.49 ; Aware: 2.50 - 3.24 ; Extremely Aware: 3.25 - 4.00

Table 5. Level of awareness of the respondents on Moderna

Indicators	Weighted Mean	Descriptive Equivalent
1. Aware of the existence of this vaccine.	3.71	Extremely Aware
2. Aware that this vaccine has a high efficacy rate of 94.1% against symptomatic COVID-19.	3.42	Extremely Aware
3. Aware that this vaccine was developed and manufactured by an American company called ModernaTX, Inc.	3.14	Aware
4. Aware that people who receive this vaccine will experience symptoms, such as headache, fever, fatigue, myalgia (muscle pain), arthralgia (pain in the joints), vomiting, and pain at the injection site, which lasts within one or two days after receiving it.	3.36	Extremely Aware
Overall	3.40	Extremely Aware

Legend: No Awareness: 1.00 - 1.73 ; Slightly Aware: 1.74 - 2.49 ; Aware: 2.50 - 3.24 ; Extremely Aware: 3.25 - 4.00

aware of Moderna's efficacy rate against symptomatic COVID-19.⁸ In terms of whether the respondents are aware of the side effects that people usually experience after vaccination, 58% of the respondents are extremely aware of the post-vaccination effects of the vaccine to people. With a mean of 3.14, 44% of the respondents are extremely aware of the company that manufactured the vaccine which is ModernaTX, Inc.⁹

Attitudes of the Respondents Towards Covid-19 Vaccination

The second category talks about the attitudes of Filipino adults in Quezon City regarding vaccination.

The respondents were asked about the extent of their agreement regarding attitudes towards COVID-19 vaccines, interaction of people to mass media and healthcare professionals. Some of the indicators used for this part are modified from existing relevant survey instruments, while some are constructed de novo. The following indicators revealed the agreement of the respondents about the said information.

Table 6 represents the attitudes of the Filipino adults residing in Quezon City towards vaccines and the corresponding indicators. It garnered an overall weighted mean of 3.22, with a descriptive equivalent of 'slightly agree', indicating that the respondents slightly agree with the presented statements before them.

Table 6. Attitudes of the respondents towards COVID-19 vaccines

Indicators	Weighted Mean	Descriptive Equivalent
1. Prefers a specific brand of vaccine.	3.79	Agree
2. Prefers a specific brand of vaccine because it is a requirement. (i.e. requirement for the job I am applying for, for entering a specific country, etc.)	3.28	Slightly Agree
3. Finds it confusing that there are different brands of vaccine to choose from.	2.41	Disagree
4. The best vaccine is the one that's available right now.	4.13	Agree
5. When I found out that other people experienced some side effects (fever, muscle pain, weakness, pain on the injection site) after getting vaccinated, I began to hesitate.	1.97	Disagree
6. Having insufficient data assessing the safety and efficacy of the vaccine made me hesitate to get vaccinated.	2.59	Disagree
7. One of the reasons I got delayed getting vaccinated was due to the shortage of available vaccines in our area.	3.53	Agree
8. The higher the efficacy, the more protected I am from the virus.	4.08	Agree
Overall	3.22	Slightly Agree

Legend: Strongly Disagree: 1.00 - 1.79 ; Disagree: 1.80 - 2.59 ; Slightly Agree: 2.60 - 3.39 ; Agree: 3.40 - 4.19 ; Strongly Agree: 4.200 - 5.00

Findings showed that the respondents agree (34%) and strongly agree (32%) that they prefer a specific brand of vaccine, while 20% of them slightly agree. However, 9% of the respondents disagree while 5% strongly disagree. This signifies that the respondents agree that they have a preferred vaccine in mind. This indicator can be backed up by other factors like job application and travel requirements, as 30% of the respondents agree, 22% strongly agree, 13% slightly agree, while 24% disagree and 11% strongly disagree.

They disagree (32%) and strongly disagree (28%) when asked if they find it confusing that there are different brands of vaccine to choose from, although 19% agree, 16% slightly agree and 5% agree. This is because they strongly agree (48%) that the best vaccine is the one that's available right now, followed by 26% who agree and 19% who slightly agree. Only the remaining 5% disagree and 2% strongly disagree. This revealed that the majority of the respondents agree (4.13) that they treat the vaccines at hand as the best one despite having a preferred vaccine in mind. Findings also showed that the majority of the respondents strongly disagree (45%) when asked if they began to hesitate when they found out the post-vaccination side effects that other people experienced, followed by 32% who disagree. Some slightly agree (10%), agree (7%) and strongly agree

(6%). This shows a positive attitude that they are well-aware of the side effects that normally occur post-vaccination. Although, they slightly agree (27%), agree (15%) and strongly agree (7%) when asked whether the insufficient information about the safety and effectiveness of the vaccine made them hesitate in getting the vaccine, more than half of the respondents disagree (32%) and strongly disagree (19%).

On the other hand, the respondents strongly agree (36%) that the reason why they are delayed in getting vaccinated is because of the shortage of available vaccines in their area, followed by 22% who agree and 13% who slightly agree. The remaining 17% disagree and 12% strongly disagree. This showed that more than half of the respondents agree (3.53) that the shortage of allotted vaccines is one reason for their vaccination delay. They also strongly agree (43%) that the higher the efficacy, the more protected they are from the virus which is seen as a common mindset among the general public, followed by 31% who agree and 19% who slightly agree. Only the remaining 5% disagree and 2% strongly disagree.

Table 7 presents the attitude of Filipino adults in Quezon City towards the interaction between people and mass media where the respondents slightly agree based on the overall weighted mean of 3.19. Out of 100 respondents, 37% of them disagree on the first indicator which states that they would rather wait and

Table 7. Attitudes of the respondents towards COVID-19 vaccines

Indicators	Weighted Mean	Descriptive Equivalent
1. Prefers a specific brand of vaccine.	3.79	Agree
2. Prefers a specific brand of vaccine because it is a requirement. (i.e. requirement for the job I am applying for, for entering a specific country, etc.)	3.28	Slightly Agree
3. Finds it confusing that there are different brands of vaccine to choose from.	2.41	Disagree
4. The best vaccine is the one that's available right now.	4.13	Agree
5. When I found out that other people experienced some side effects (fever, muscle pain, weakness, pain on the injection site) after getting vaccinated, I began to hesitate.	1.97	Disagree
6. Having insufficient data assessing the safety and efficacy of the vaccine made me hesitate to get vaccinated.	2.59	Disagree
7. One of the reasons I got delayed getting vaccinated was due to the shortage of available vaccines in our area.	3.53	Agree
8. The higher the efficacy, the more protected I am from the virus.	4.08	Agree
Overall	3.22	Slightly Agree

Legend: Strongly Disagree: 1.00 - 1.79 ; Disagree: 1.80 - 2.59 ; Slightly Agree: 2.60 - 3.39 ; Agree: 3.40 - 4.19 ; Strongly Agree: 4.200 - 5.00

see what other people say about the vaccine before they get it, followed by 20% who strongly disagree, 20% who slightly agree, 13% who agree, and 10% who strongly agree. In the second indicator, 34% of the respondents disagree when asked if one of the reasons they want to get vaccinated is because of the incentives or benefits offered to those who got vaccinated. The remaining respondents strongly disagree (30%), slightly agree (17%), agree (14%), and strongly agree (5%) on this indicator.

Meanwhile, 43% of the respondents strongly agree that the use of visual aids to expose myths and misconceptions helped increase their acceptance and trust in the vaccine. In this indicator, only 28% agree and 15% slightly agree while 10% disagree and 4% strongly disagree. The fourth indicator states that peer pressure contributes to the reason why the respondents want to get vaccinated in which 33% of them disagree and 25% strongly disagree while 19% slightly agree, 14% agree, and 9% strongly agree. In the fifth indicator, 39% of the respondents strongly agree when asked if they see plenty of wrong information spreading on social media about COVID-19 vaccines. In this indicator, 35% of the respondents agree and 20% slightly agree while 5% disagree and only 1% strongly disagree. In addition, the respondents were also asked if the widespread

misinformation circulating on social media are causing people to believe that vaccines do more harm than good in which 50% of the respondents strongly agree, 29% agree and 14% slightly agree while 4% disagree and 3% strongly disagree.

On the other hand, 35% of the respondents disagree when asked if a certain politician, celebrity, leader, or influencer that they know or follow has expressed their hesitations towards or advocates against COVID-19 vaccination. Here, 20% of the respondents slightly agree, 18% strongly disagree, 14% agree, and 13% strongly agree. Lastly, when asked if the media exaggerates “negative” news and information about COVID-19 vaccines, 37% of the respondents slightly agreed, 23% agreed and 17% strongly agreed while 16% disagreed, and 7% strongly disagreed.

Table 8 presents the attitudes of Filipino adults in Quezon City towards the people and healthcare professionals with an overall weighted mean of 3.50 which has a descriptive equivalent of agree.

In the first indicator, 64% of the respondents strongly agree that healthcare professionals who are doing a good job at clearing misconceptions regarding vaccines encourage them to spread awareness to other people. The remaining respondents agree (30%) and slightly agree (5%) while only 1% disagree.

Table 8. Attitudes of the respondents towards the Interaction between people and health professionals

Indicators	Weighted Mean	Descriptive Equivalent
1. Healthcare professionals who are doing a good job at clearing misconceptions regarding vaccines encourage me to spread awareness to other people.	4.57	Strongly Agree
2. I would listen to the advice of healthcare professionals because they are experts in this area.	4.83	Strongly Agree
3. A healthcare professional should be the one to inform whether receiving a vaccine is recommended or not.	4.71	Strongly Agree
4. Some healthcare professionals I know get scared of getting vaccinated.	2.28	Disagree
5. Some healthcare professionals that I know are hesitant in getting a particular vaccine.	2.41	Disagree
6. A healthcare professional that I know does not give enough clarity on the information about the vaccines.	2.23	Disagree
7. There are still some in the healthcare sector who do not believe in the efficacy of COVID-19 vaccines.	2.77	Slightly Agree
8. It is easy to ask information regarding vaccines to a healthcare professional.	4.19	Agree
Overall	3.50	Agree

Legend: Strongly Disagree: 1.00 - 1.79 ; Disagree: 1.80 - 2.59 ; Slightly Agree: 2.60 - 3.39 ; Agree: 3.40 - 4.19 ; Strongly Agree: 4.200 - 5.00

When asked if the respondents would listen to the advice of healthcare professionals, the majority of them strongly agree (86%) while the others agree (11%) and slightly agree (3%). Most of the respondents also strongly agree (77%) on the indicator which states that a healthcare professional should be the one to inform whether receiving a vaccine is recommended or not. This is followed by agree (18%), slightly agree (4%), and disagree (1%).

In the fourth indicator, the respondents disagree (34%) and strongly disagree (31%) when asked if some of the healthcare professionals they know get scared of getting vaccinated. However, 17% of the respondents slightly agree, 12% agree, and only 6% strongly agree. The respondents also disagree (35%) and strongly disagree (23%) when asked if some healthcare professionals that they know are hesitant in getting a particular vaccine. On the contrary, 26% slightly agree, 10% agree, and 6% strongly agree. In the sixth indicator, 41% of the respondents also disagree and 27% strongly disagree when asked if a healthcare professional that they know does not give enough clarity on the information about the vaccines. Only 19% slightly agree, 8% agree, and 5% strongly agree on this indicator.

The seventh indicator states that there are still some in the healthcare sector who do not believe in

the efficacy of COVID-19 vaccines in which 34% of the respondents disagree and 15% strongly disagree. However, there are some who slightly agree (24%), strongly agree (14%), and agree (13%). In the last indicator, the respondents were asked if it is easy to ask for information regarding vaccines to a healthcare professional. Most of them strongly agree (45%) while some agree (32%) and slightly agree (20%).

Perceptions of the Respondents Towards Covid-19 Vaccination

The respondents were asked about the extent of their agreement regarding perceptions towards risks and importance of COVID-19 vaccination. Some of the indicators used for this part are modified from existing relevant survey instruments, while some are constructed de novo.

Table 9 presents the risk perceptions of Filipino adults in Quezon City towards COVID-19 vaccination. The respondents slightly agree on these risk perceptions, with an overall weighted mean of 3.36. Findings showed a positive perception on the indicator which suggests that the increasing number of published research articles on the available COVID-19 vaccines increases the number of people who trust the effectiveness of the vaccines, since the

majority of the respondents strongly agree (53%), agree (35%), and slightly agree (12%). Supporting the previous indicator, 34% of the respondents disagree and 23% strongly disagree when asked if they once thought that the COVID-19 vaccines might not work, while another 23% slightly agree, 15% agree, and 5% strongly agree on this indicator. However, the majority of the respondents disagree (38%) and strongly disagree (28%) when asked about getting scared to receive a shot due to the severe reaction in which others had gotten after getting vaccinated. This also supported the previous indicators, as more than half of the respondents expressed a positive perception. Still, less than half of the respondents slightly agree (20%), agree (9%), and strongly agree (5%) on this indicator. Furthermore, the respondents disagree (47%) and strongly disagree (13%) that the side effects of the vaccine might greatly affect their health, although 30% slightly agree, 6% agree and 4% strongly agree.

On the other hand, the majority of the respondents do agree (40%) that people might hesitate accepting the vaccines and question its effectiveness due to the limited time in developing and testing, followed by 31% who slightly agree and 15% who strongly agree. Only the remaining 7% disagree and the other 7% strongly disagree on this indicator. Also, most of the respondents strongly agree (61%) that misinformation and misconception about the effects of vaccines may

cause unnecessary fear and increase vaccine hesitancy just like the Dengvaxia controversy, followed by 23% who agree, and 9% who slightly agree. Only the remaining 4% disagree and 3% strongly agree. In addition, the respondents agree (48%) that regular and direct exposure to risk may cause the public to question the information about the severity of the COVID-19 symptoms, followed by 25% who slightly agree and 22% who strongly agree. Only the remaining 3% disagree and 2% strongly disagree.

Moreover, the respondents agree (31%) that personal beliefs like religion, culture and philosophy in life affect the perception of people towards vaccines, followed by 28% who strongly agree and 24% who slightly agree. Only the remaining 10% disagree and 7% strongly disagree.

Table 10 presents the perceptions of Filipino adults in Quezon City towards the importance of COVID-19 vaccination where it was revealed that the respondents strongly agree on the following perceptions with an overall weighted mean of 4.48. The respondents strongly agree (74%) and agree (22%) that vaccination will prevent them from getting a severe COVID-19 infection, followed by 3% who slightly agree. Only the remaining 1% disagree. They believed that not being vaccinated poses the risk of acquiring a severe COVID-19 infection with 70% of the respondents answering strongly agree, followed by 26% who agree, 3% who slightly agree, and only 1% disagree.

Table 9. Risk perceptions of the respondents towards COVID-19 vaccination

Indicators	Weighted Mean	Descriptive Equivalent
1. Because of the increasing number of published research articles on COVID-19 vaccines made available to the public, the number of people who trust the effectiveness of the vaccines also increased.	4.41	Strongly Agree
2. I once thought that the COVID-19 vaccines might not work.	2.45	Disagree
3. I got scared to receive a shot because I know someone who had a severe reaction after getting vaccinated.	2.25	Disagree
4. Due to the limited time in developing and testing the vaccines, people might hesitate accepting it and question its effectiveness.	3.49	Agree
5. Side effects of the vaccine might greatly affect my health.	2.41	Disagree
6. Misinformation and misconception about the effects of vaccines may cause unnecessary fear and increase vaccine hesitancy (e.g. Dengvaxia controversy).	4.35	Strongly Agree
7. Regular and direct exposure to risk may cause the public to question the information about the severity of COVID-19 symptoms.	3.85	Agree
8. Personal beliefs (religion, culture, philosophy in life) affect people's perception towards vaccines.	3.63	Agree
Overall	3.36	Slightly Agree

Legend: Strongly Disagree: 1.00 - 1.79 ; Disagree: 1.80 - 2.59 ; Slightly Agree: 2.60 - 3.39 ; Agree: 3.40 - 4.19 ; Strongly Agree: 4.200 - 5.00

Table 10. Perceptions of the respondents towards the importance of COVID-19 vaccination

Indicators	Weighted Mean	Descriptive Equivalent
1. People are being educated on how vaccines work against COVID-19 and what it does to the body.	4.26	Strongly Agree
2. There are still people who believe that vaccines are not important.	4.36	Strongly Agree
3. Vaccines will help achieve herd immunity which will consequently reduce the manifestation of COVID-19 infection.	4.61	Strongly Agree
4. Vaccination will prevent me from getting a severe COVID-19 infection	4.69	Strongly Agree
5. Not being vaccinated poses the risk of acquiring a severe COVID-19 infection.	4.65	Strongly Agree
6. I am putting the people around me in danger of contracting the virus if I have not been vaccinated.	4.54	Strongly Agree
7. I believe the vaccines will fulfill its role in boosting my immune system not only against the COVID-19 disease, but also to the new variants.	4.42	Strongly Agree
8. Politicians shouldn't be involved in explaining scientific information using the media, because they have no expertise in it.	4.34	Strongly Agree
Overall	4.48	Strongly Agree

Legend: Strongly Disagree: 1.00 - 1.79 ; Disagree: 1.80 - 2.59 ; Slightly Agree: 2.60 - 3.39 ; Agree: 3.40 - 4.19 ; Strongly Agree: 4.200 - 5.00

They strongly agree (70%) that they are putting the people around them in danger of contracting the virus if not vaccinated, followed by 21% who agree and 4% who slightly agree. Only the remaining 3% disagree and 2% strongly disagree on this indicator. They also believed that vaccines will help achieve herd immunity which will consequently reduce the manifestation of COVID-19 infection with 68% having strong agreement, followed by 26% who agree and 5% who slightly agree. Only the remaining 1% disagree. All of these indicators attained the highest frequencies and expressed positive perceptions towards the importance of COVID-19 vaccination.

Although the respondents strongly agree (49%) that there are still people who believe that vaccines are not important—followed by 41% who agreed, 8% who slightly agreed, and 1% each who disagreed and strongly disagreed—it also revealed a strong agreement on the remaining indicators. They strongly agree (44%), agree (40%) and slightly agree (15%) that people are being educated on how the vaccines work against COVID-19 and what it does to the body. Only the remaining 1% strongly disagree on this indicator. They believed the vaccines will fulfill its role in boosting the immune system against COVID-19 disease and its new variants with 59% of the respondents answering strongly agree, followed by 27% who agree and 11% who slightly agree. Only the remaining 3% disagree. The respondents also strongly

agree (61%) that politicians should not involve themselves in explaining scientific information using the media because they have no expertise in this area, followed by 18% who agree and 15% who slightly agree. Only the remaining 6% disagree.

DISCUSSION

Findings showed that the respondents have an overall exceptional awareness of the aforementioned COVID-19 vaccines. Their extreme awareness of the Pfizer BioNTech vaccine might have been due to the fact that this vaccine is the first ever vaccine to be approved by the FDA Philippines by declaring it as EAU and available for public use¹⁰ and also its efficiency to new variants and being deemed safe to receive by the DOH.¹¹ Similarly, a cross-sectional study conducted in Saudi Arabia gave a glimpse on how most of their respondents were also well-aware of the essential information about the vaccines specifically the unexpected adverse effects after inoculation in which people may experience mild to moderate symptoms.¹² It is said that precautions should be applied for some cases to avoid any unfavorable circumstances like serious adverse effects.¹³

In terms of attitudes towards the COVID-19 vaccines, findings showed that the respondents have a positive attitude by agreeing that they treat

the vaccines at hand as the best one despite having a preferred vaccine in mind. The respondents also agreed that their specific vaccine preference is because of a requirement. This was supported by a local article written by Abad that there is a requirement for specific brands in order to grant access to travel to certain countries, as these countries only permit entry to those who are vaccinated by certain brands of vaccine, since most of the respondents. The said requirement was included in the Tourism Sandbox Program where a list of the approved vaccines by several countries were provided.¹⁴

Respondents also have a positive attitude towards vaccines by disagreeing that they began hesitating upon knowing the post-vaccination side effects. In contrast to that, Westerman conducted an interview with some Filipinos who are hesitant to receive the vaccine in which, according to them, there are reports where some people with comorbidities start to get weak then die later on after receiving the vaccine. Therefore, they have decided to wait for a longer time to see the effects of the vaccines to others before receiving one. Vaccine rollout and scheduling in the country are also slow and tiresome compared to others. People then are thinking twice about booking an appointment and many people wait for “better” vaccines to arrive.¹⁵ Similarly, a 2021 cross-sectional study in Poland highlighted that the reluctance and hesitance of people in getting vaccinated can simply arise from an individual’s decision based on their interaction with different factors such as previous experiences with the vaccines itself, the level of awareness in terms of knowledge and risks in which being aware of these risks have accumulated both from the public concerns.¹⁶ Gadoth, et al. also found that the decision of the people to delay or decline their COVID-19 vaccination may be due to insufficient transparency and available public information regarding the vaccines being developed and deployed.¹⁷

It is stated that mass media really does play a huge part in spreading COVID-19 related information to people. The primary sources of information regarding COVID-19 are social media and television. Plenty of misinformation and misconceptions about COVID-19 – particularly the effects and health-related risks of COVID-19 vaccines, are also circulating online, which is one of the reasons behind the increased COVID-19 vaccine rejection and hesitancy.¹⁸

Stecula et al. also stated that those who were exposed to vaccine-related information through the use

of social media were more prone to misinformation. In addition, some media outlets frequently exaggerate the risks related to COVID-19.¹⁹ This was also supported by a study conducted by Mejia et al. (2020) where they concluded that television and social media were mostly responsible for the public’s perception of exaggeration and fear production regarding COVID-19.²⁰ Meanwhile, Reuben et al. (2020) also reported that the use of the internet may help dispel misconceptions, misinformation, and ignorance about COVID-19 by accessing reliable information available online.¹⁸ Furthermore, the study by Hamaguchi et al. (2020) found that visuals have shown to be particularly effective means of disseminating information during the current COVID-19 pandemic. They have concluded that visual communication provides a practical and creative medium for bridging health literacy gaps, empowering diverse patient populations based on factual information, and facilitating public health advocacy during the current pandemic and the upcoming “new normal”.²¹

Findings showed that the respondents have a positive attitude towards the interaction between people and health professionals, as they strongly agreed that healthcare professionals have done a great job at clearing misconceptions regarding the COVID-19 vaccines and at encouraging people to spread awareness to others. In a study by El-Elimat et al. (2021), healthcare providers were revealed as legitimate sources of information on COVID-19 vaccines based on the revealed data when the participants were asked about it.²² This is the same case with KFF COVID-19 Vaccine Monitor (2020) where the vast majority of U.S. adults (85%) rely on their physicians or healthcare professionals for information regarding COVID-19 vaccines.²³

Another study by Malik et al. (2020) found that participants relied the most on the COVID-19 information obtained from health officials and healthcare professionals.²⁴ The participants expressed that the data obtained from these sources are more legitimate than the information obtained from social media. Thus, healthcare professionals and health officials, especially the ancillary healthcare personnel and nurses, should participate in community messaging to build trust and enhance uptake of the COVID-19 vaccine. A study conducted by Hussein et al. (2021) revealed that 40.9% of the 496 health care personnel surveyed opposed vaccination while 16.6% believed that the vaccine is ineffective.²⁵ Additionally, Qattan et al. (2021) discovered that safety and efficacy

concerns regarding COVID-19 vaccines as well as fear of adverse reactions significantly incited vaccine rejection among healthcare personnel.²⁶ While it is necessary to devise effective outreach strategies to address the aforementioned concerns, the results suggested that these efforts should be amplified with efforts to build trust and ensure transparency in the vaccine approval process in order to develop confidence and to increase acceptance of the vaccines particularly among healthcare workers.

A 2021 cross-sectional study by Hershan found that hesitation regarding vaccines arose because of the unexpected adverse effects, and that people believed the vaccine might not even do its intended purpose.²⁷ However, findings showed that the respondents showed a positive perception, as the majority disagreed when asked if they once thought that the COVID-19 vaccines might not work. On the other hand, findings also showed that the respondents strongly agree that misinformation and misconception about the effects of vaccines may cause unnecessary fear and increase vaccine hesitancy just like the Dengvaxia controversy. This expressed a negative perception towards misinformation and misconception about the effects of vaccines. The lack of effective risk communication caused the fear and rage of the people to those who died after getting vaccinated by the Dengvaxia vaccine.²⁸ This led the people to show distrust to the government and created different narratives in mass and social media, surpassing the scientific-based perspective.²⁹

This shows that risk perception is always involved in assessing the health-related information and the possibility of facing hazards. In order to counter misconception and misinformation, it was suggested that continuous effort must be made in educating and giving the general public most especially those in the lower economic strata and those who do not have access to information as an emphasis on the efficacy and safety of the vaccines.³⁰ Moreover, suggestions regarding the collaboration of science with religion are encouraged to increase the awareness of COVID-19 vaccination.

If the public is aware about the susceptibility and the severity of COVID-19 and aware about the efficacy and safety of the vaccines, they will develop fear of acquiring the disease which will encourage them to accept preventive measures like vaccines.³¹ Moreover, it was suggested that strict monitoring and innovative strategies should be implemented to

minimize any misinformation and to raise awareness regarding the importance of vaccination.³

CONCLUSION

The majority of the respondents have an exceptionally high level of awareness on the different types of COVID-19 vaccines available in the Philippines, specifically the Pfizer BioNTech, Oxford AstraZeneca, Sinovac CoronaVac, and Moderna.

The majority of the respondents have shown positive attitudes towards the different indicators presented regarding the COVID-19 vaccines and the Interaction between People and Healthcare Professionals. Meanwhile, the respondents display mixed attitudes towards the different indicators presented regarding the Interaction between the People and Mass Media.

And while the respondents have mixed risk perceptions towards COVID-19 vaccination, it was also shown that the majority of the respondents display positive perceptions towards the importance of COVID-19 vaccination.

RECOMMENDATION

It is recommended to maintain or improve the dissemination of more accurate and legitimate information about COVID-19 vaccination to help spread or enhance people's level of awareness about the topic. In addition, it is recommended to devise more effective strategies to encourage the people to receive the available vaccine and increase their acceptability of the vaccine regardless of the brand. Furthermore, future researchers are highly encouraged to use the findings from this current study to broaden the age range of the participants which include minors aged 12-17 years old residing in Quezon City to ensure continued knowledge and awareness distribution to a wider audience. The researchers propose this because the DOH, along with the Vaccine Cluster, only commenced the nationwide deployment of COVID-19 vaccine for minors aged 12 to 17 last November 3, 2021 (DOH, 2021).[16] This was after the researchers conducted data collection; thus, minors were excluded from the study. It is also highly recommended to distribute infographic posters about COVID-19 vaccines across various social media platforms in order to raise awareness about COVID-19 vaccines including the common side effects, the risks

of not getting vaccinated, the benefits of getting vaccinated, the control, and prevention.

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