ejpmr, 2022, 9(7), 121-125

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

ASSESSING THE POSSIBILITY OF VACCINE HESITANCY TOWARDS THE IMPENDING COVID-19CRISIS: A COMMUNITY PHARMACISTS PERSPECTIVE

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Article Received on 13/05/2022 **Article Revised on 03/06/2022** **Article Accepted on 23/06/2022**

ABSTRACT

The COVID-19 pandemic has caused devastation across the earth from the start of the year 2020. Coronavirus (COVID-19), a viral disease caused by SARS-COV2 emerged from Wuhan City, China was declared by the World Health Organization (WHO) to be an international public health emergency because of its rapid widespread throughout the world. The WHO promotes several guidelines that can prevent the spread of the virus, and one of these is vaccination. While majority of the public adheres to immunization, there are still few who neglects vaccination and these few still provide a challenge to the public health. This study aimed to acquire data from the perspective of registered pharmacists working in community setting. As the most accessible health care professional, a community pharmacist's duty is to educate people about the benefits of vaccination and encourage neglectful individuals to acquire active immunity without coercion. The researchers selected respondents based on characteristics of a population and the objectives of the study using the purposive sampling method. A 40-item 5-point Likert scale survey questionnaire was utilized to assess Perceived Cost, Perceived Safety, and Perceived Effectiveness among the respondents. Results showed that respondents are willing to purchase (should there be a time when the vaccines are not free) and be vaccinated with the COVID- 19 vaccine due to its perceived fair cost; and perceived safety and effectiveness. This result may be considered a steppingstone towards achieving herd immunity, through better information dissemination by the community pharmacists.

KEYWORDS: *Vaccine Hesitancy, COVID-19, Community Pharmacists, Perceived Cost, Perceived Safety, Perceived Effectiveness.*

INTRODUCTION

The COVID-19 pandemic has caused devastation across the earth from the start of the year 2020. Coronavirus (COVID-19), a viral disease caused by SARS-COV2 emerged from Wuhan City, China was declared to be an international public health emergency because of its rapid widespread throughout the world. It is instantly passed by having in contact with the droplets of mucus or saliva from one host to another.[5] While COVID-19 vaccines are yet developed, the World Health Organization promoted several guidelines that can prevent the spread of the virus. On the first stage of the pandemic, the most effective way of prevention was forced lockdown but this had stroked the economy and normal lives of the people specially the families included in the Low-Class and Middle-Class Income (LMCIs).[2] The best resort to this pandemic crisis that shifted the normal lives of the people around the world is vaccination. Although several vaccines for infectious and viral diseases such as inactivated polio vaccine and MMR (measles, mumps, and rubella) vaccine had proven their effectiveness through time,[3] there are still some factors which can affect the compliance of a person to vaccination. Factors such as the vaccines' cost, safety, and efficacy were the focus of this study. Although majority of the public adheres to immunization, there are still few who neglects vaccination and these few still provide a challenge to the public health. The said factors are only some of many which could affect the population of vaccine compliant individuals. This study aimed to acquire data from the perspective of registered pharmacists working in community setting. As health care professionals, it is important for pharmacists to have a firm knowledge and idea toward vaccination as they are part of the whole public health circle.[1] A pharmacist's duty is to educate people about the benefits of vaccination and encourage neglectful individuals to acquire active immunity without coercion.

MATERIALS AND METHODS

The sample

The respondents for this research are 40 registered pharmacists, both male and female. Specifically, these participants are currently employed as a community pharmacist. The rationale for the nature of work of the respondents is that they are part of the healthcare team as

medication specialists.

Sampling procedures

In this research, the purposive sampling was used, wherein the researchers selected respondents based on characteristics of a population and the objectives of the study. Purposive sampling is often accomplished by applying expert knowledge of the population to select in a non-random manner a sample of elements that represents a cross-section of the population.[4] The respondents in this study are the community pharmacists who completed the survey questionnaire.

The instruments

A 40-item 5-point Likert scale survey questionnaire was used in this study to assess Perceived Cost, Perceived Safety, and Perceived Effectiveness. This survey questionnaire is based on existing studies and underwent validation and reliability scoring with subject matter experts.

RESULTS AND DISCUSSION

Table 1: Frequency distribution for demographic profile.

Profile		Frequency	Percentage	Rank
Age	21 to 25	16	40	2
	26 to 30	20	50	1
	Above 30	4	10	3
	Total	**40**	**100**	
Sex	Male	10	25	2
	Female	30	75	1
	Total	**40**	**100**	
Marital Status	Single	38	95	1
	Married	2	5	2
	Total	**40**	**100**	
Monthly Income	Above Php 50,000	4	10	4
	Php 40,001 – 50,000	3	7.5	5
	Php 30,001 – 40,000	8	20	3
	Php 20,001 – 30,000	9	22.5	2
	Php 10,001 – 20,000	12	30	1
	Below Php 10,000	4	10	4
	Total	**40**	**100**	
Length of Service	More than 10 years	3	7.5	3
	6 to 10 years	13	32.5	2
	Less than 6 years	24	60	1
	Total	**40**	**100**	
Work Sector	Government	9	22.5	2
	Non-Government Organization (NGO)	2	5	3
	Private	29	72.5	1
	Total	**40**	**100**	

Table above shows the frequency distribution for each demographic profile. Majority of the respondents were aged 26-30; female; single; have a monthly income ranging Php 10,000-20,000; have worked for less than 6 years; and are working in the private sector.

Table 2: Summary of perceived cost according to demographic profile.

Perceived Cost			
Demographic profile	**Mean**	**Verbal description**	**Verbal interpretation**
Age	2.60	Neutral	The COVID-19 Vaccine is perceived as fair cost
Sex	2.60	Neutral	The COVID-19 Vaccine is perceived as fair cost
Marital Status	2.60	Neutral	The COVID-19 Vaccine is perceived as fair cost
Monthly Income	2.60	Neutral	The COVID-19 Vaccine is perceived as fair cost
Length of Service	2.60	Neutral	The COVID-19 Vaccine is perceived as fair cost
Work Sector	2.60	Neutral	The COVID-19 Vaccine is perceived as fair cost

Table above shows the summary of the respondents' perspective on cost, for each demographic profile. As seen above, the overall mean across all demographic profile is 2.60, with a verbal description of "neutral". This means that the respondents are neither willing nor unwilling to be vaccinated because they perceive the vaccine to have a fair cost.

Table 3: Summary of perceived safety according to demographic profile.

Perceived Safety			
Demographic profile	**Mean**	**Verbal description**	**Verbal interpretation**
Age	2.18	Disagree	Willing to be vaccinated with the COVID-19 Vaccine because it is safe
Sex	2.18	Disagree	Willing to be vaccinated with the COVID-19 Vaccine because it is safe
Marital Status	2.18	Disagree	Willing to be vaccinated with the COVID-19 Vaccine because it is safe
Monthly Income	2.18	Disagree	Willing to be vaccinated with the COVID-19 Vaccinebecause it is safe
Length of Service	2.18	Disagree	Willing to be vaccinated with the COVID-19 Vaccinebecause it is safe
Work Sector	2.18	Disagree	Willing to be vaccinated with the COVID-19 Vaccinebecause it is safe

Table above shows the summary of the respondents' perspective on safety, for each demographic profile. The survey questionnaire contains negative statements towards the perceived safety factor, meaning the more the respondents agree with the statements, the more they are hesitant to get the vaccine and vice versa. As seen above, the overall mean across all demographic profile is 2.18, with a verbal description of "disagree". This means that the respondents are willing to be vaccinated because they perceive that the vaccine is safe.

Table 4: Summary of perceived effectiveness according to demographic profile.

Perceived effectiveness			
Demographic profile	**Mean**	**Verbal description**	**Verbal interpretation**
Age	2.32	Disagree	Willing to be vaccinated withthe COVID-19 Vaccine because it is effective
Sex	2.32	Disagree	Willing to be vaccinated withthe COVID-19 Vaccine because it is effective
Marital Status	2.32	Disagree	Willing to be vaccinated withthe COVID-19 Vaccine because it is effective
Monthly Income	2.32	Disagree	Willing to be vaccinated with the COVID-19 Vaccinebecause it is effective
Length of Service	2.32	Disagree	Willing to be vaccinated withthe COVID-19 Vaccine because it is effective
Work Sector	2.32	Disagree	Willing to be vaccinated with the COVID-19 Vaccinebecause it is effective

Table above shows the summary of the respondents' perspective on effectiveness, for each demographic profile. The survey questionnaire contains negative statements towards the perceived effectiveness factor, meaning the more the respondents agree with the statements, the more they are hesitant to get the vaccine and vice versa. As seen above, the overall mean across all demographic profile is 2.32, with a verbal description of "disagree". This means that the respondents are willing to be vaccinated because they perceive that the vaccine is effective.

Table 5: Summary of test for significant difference towards perceived cost according todemographic profile.

Perceived cost			
Demographic profile	**p-value**	**Significance**	**Ho decision**
Age	0.290	Not Significant	Accept
Sex	0.081	Not Significant	Accept
Marital Status	0.001	Significant	Reject
Monthly Income	0.844	Not Significant	Accept
Length of Service	0.166	Not Significant	Accept
Work Sector	0.004	Significant	Reject
**Significant at .05 alpha level*			

The table above shows the summary of test for significant difference towards perceived cost per demographic profile. The obtained p-value for age, sex, monthly income and length of service is more than the .05 alpha level, meaning there is no significant difference towards perceived cost across the said demographic profiles. Therefore, the null hypothesis is accepted. However, the obtained p-value for marital status and work sector is less than the .05 alpha level; meaning there is a significant difference towards perceived cost across these two demographic profiles, thus rejecting the null hypothesis.

Table 6: Summary of test for significant difference towards perceived safety according todemographic profile.

Perceived safety			
Demographic Profile	**p-value**	**Significance**	**Ho decision**
Age	0.245	Not Significant	Accept
Sex	0.234	Not Significant	Accept
Marital Status	0.492	Not Significant	Accept
Monthly Income	0.004	Significant	Reject
Length of Service	0.262	Not Significant	Accept
Work Sector	0.213	Not Significant	Accept
**Significant at .05 alpha level*			

The table above shows the summary of test for significant difference towards perceived safety per demographic profile. The obtained p-value for monthly income is less than the .05 alpha level; meaning there is a significant difference towards perceived safety across the respondents' monthly income. Therefore, the null hypothesis is rejected. However, the obtained p-value for the remaining demographic profiles is more than the .05 alpha level meaning there is no significant difference, thus accepting the null hypothesis.

Table 7: Summary of test for significant difference towards perceived effectiveness according to demographic profile.

Perceived effectiveness			
Demographic profile	**p-value**	**Significance**	**Ho decision**
Age	0.017	Significant	Reject
Sex	0.809	Not Significant	Accept
Marital Status	0.992	Not Significant	Accept
Monthly Income	0.125	Not Significant	Accept
Length of Service	0.092	Not Significant	Accept
Work Sector	0.027	Significant	Reject
**Significant at .05 alpha level*			

The table above shows the summary of test for significant difference towards perceived effectiveness per demographic profile. The obtained p-value for sex, marital status, monthly income and length of service is more than the .05 alpha level, meaning there is no significant difference towards perceived effectiveness across the said demographic profiles. Therefore, the null hypothesis is accepted. However, the obtained p-value for age and work sector is less than the .05 alpha level; meaning there is a significant difference towards perceived effectiveness across these two demographic profiles, thus rejecting the null hypothesis.

Table 8: Test for correlation.

Correlated Factors		R-value	Interpretation	p-value	Significant	Ho Decision
PerceivedCost	Perceived Safety	0.275	Very Weak Positive Correlation	0.085	Not Significant	Accept
	Perceived Effectiveness	0.429	Moderate Positive Correlation	0.006	Significant	Reject
Perceived Safety	Perceived Effectiveness	0.720	Strong Positive Correlation	0.000	Significant	Reject
**Significant at .05 alpha level*						

The table above shows the test for significant correlation when one factor is comparedwith the other factors. For Perceived Cost and Perceived Safety, the computed r-value is 0.275 with a correlation interpretation of Very Weak Positive Correlation and a computed p- value of 0.085 which is greater than .05 alpha level. This would mean that the relationship is not significant and null hypothesis is retained/accepted. Hence, the more the respondents are willing to purchase the COVID-19 vaccine due to low cost, the more they are certain whetherthe vaccine is safe or not.

For Perceived Cost and Perceived Effectiveness, the computed r-value is 0.429 with a correlation interpretation of Moderate Positive Correlation and the computed p-value 0.006 which is less than .05 alpha level. This would mean that the relationship is significant and null hypothesis is rejected. Hence, the more respondents are willing to buy the Covid-19 vaccine due to fair cost, the more they are willing to be vaccinated because of vaccine effectiveness.

For Perceived Safety and Perceived Effectiveness, the computed r-value is 0.720 with a correlation interpretation of Strong Positive Correlation and the computed p-value 0.000 which is less than .05 alpha level. This would mean that the relationship is significant and null hypothesis is rejected. Hence, the more they are certain of the safety of COVID-19 vaccines, the more they are willing to be vaccinated because they perceived it as effective.

CONCLUSION

a. Respondents perceived that they are willing to purchase and be vaccinated with the COVID-19 vaccine due to its fair cost, and perceived safety and effectiveness.
b. The more people are willing to buy COVID-19 vaccine due to fair cost, the more they are certain with the safety of the COVID-19 vaccine.
c. The more people are willing to buy COVID-19 vaccine due to fair cost, the more theyperceived that COVID-19 vaccine is effective.
d. The more they are certain with the safety of COVID-19 vaccines, the more theyperceived that COVID-19 vaccines are effective.

Recommendations

In light of the abovementioned conclusions, the following are hereby recommended:

1. Have a strategic planning on the free provision of COVID-19 vaccines to the public as a health measure in fighting the COVID-19 virus.
2. Conduct more studies and clinical trials to increase the confidence and trust from the end-user's perspective in COVID-19 vaccination.
3. Increase the manufacturers' transparency with what and how COVID-19 vaccineswere processed for public emergency use.
4. Disseminate information on the benefits of vaccination effectively and efficiently towards the younger and older adult populations.
5. Reduce the cost of the vaccine in the future, to give opportunity to those who cannot afford expensive COVID-19 vaccines.
6. For future researchers, consider other factors that can measure the hesitancy or willingness to be vaccinated in the quest of scientific query. They may also consider a bigger scope of population in the conduct of similar study.

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