

## Anxiety to COVID-19 Vaccination among Personnel in a Tertiary Government Hospital in Iloilo City

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### ABSTRACT

This study aimed to assess the level of anxiety to Covid-19 vaccination and level of functionality among personnel in a tertiary government hospital in Iloilo City. The pen and paper questionnaire surveyed 574 personnel from April 5-8, 2021. The absence of anxiety was observed in the older population, male respondents, those who are married, belonging to Contract of Service employment status, and High School graduates. Those who belong to the Finance and Resource generation division, with previous history of Covid-19 infection and with a history of Covid-19 infection in the immediate family reported a higher percentage of No Anxiety response.

*Keywords: Coronavirus disease, pandemic, immunization, symptoms, anxiety*

## INTRODUCTION

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Coronavirus disease or COVID-19 is a highly contagious viral infection that causes mild to severe respiratory symptoms with fever, cough, and shortness of breath. Primarily, it is spread via person-to-person contact through respiratory droplets that become airborne when an infected person coughs, sneezes, or speaks.

The spread of the novel coronavirus worldwide posed enormous challenges to public health, economy and physical health. The threat of being infected or being part of the mortality statistics is high and results in severe and widespread fears especially in the vulnerable sector of the population – the elderly and those with pre-existing health conditions.

In the midst of this COVID-19 pandemic, drug manufacturers around the world are in a race to develop and deploy safe and effective vaccines. Through research, several safe and effective vaccines that prevent people from getting seriously ill or dying from COVID-19 are currently available. With more longitudinal studies needed to validate its efficacy and effectiveness, countries have approved the immediate use of these vaccines via emergency use authorizations (EUA). Workers in frontline health services

were first in the priority list that needed to be inoculated to reduce mortality in the most vulnerable sector and preserve the health system capacity of the country. They are categorized as Priority A.1. Further categorization in the priority list are Covid-19 referral hospitals and public and private hospitals and infirmaries catering to care of Covid-19 patients (DOH, 2021).

Anxiety to the vaccine has been anecdotally reported as the Covid-19 vaccinations have been introduced with speed to combat the pandemic. Anxiety is only one manifestation in the spectrum of reactions during the vaccination roll out. This symptom that usually happens during the pre-vaccination period has been noted but not discussed often. Anxiety as a single manifestation belongs to a syndrome newly-termed as “immunization anxiety-related reaction.” These are a range of symptoms and signs that may arise around immunization that are related to “anxiety” and not to the vaccine product, a defect in the quality of the vaccine or an error of the immunization program. These include vaso-vagal reactions, hyperventilation-mediated reactions and stress-related psychiatric reactions or disorder (WHO, 2019).

## MATERIALS AND METHOD

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### ***Design and sampling***

The study was a pen and paper survey conducted among personnel who were scheduled to receive the second dose of Covid-19 vaccination at a tertiary government hospital in Iloilo City on April 5-8, 2021. Six hundred (600) questionnaires were handed out and 582 (97%) turned in their responses. Sample size was not predetermined since the schedule was on a first-come, first-served basis and personnel were not segregated according to division.

### ***Data collection tools***

Data were collected using two research instruments. The first questionnaire collected the demographic profile of the subjects (age, gender, highest educational attainment, division, employment status, history of COVID-19 infection, and history of Covid-19 infection in the immediate family). The second instrument was the Covid-19 Vaccination Anxiety Form which used Spritzer's General Anxiety Disorder-7 Questionnaire that measured the level of anxiety of respondents. It contains 2 areas – the questions on symptoms over the last 2 weeks, and a functional difficulty question. The first item tackles symptomatology and includes 7 questions. The second item asks the difficulty in carrying out functions. The questions on item 1 of the Covid-19

Vaccination Anxiety Survey are anchored on a four-point Likert scale: 4 – Nearly every day; 3 – More than half the days; 2 – Several days; and 1 – Not at all. Item number 2 can be answered on a four-point Likert scale: 4 – Extremely difficult; 3 –Very difficult; 2 – Somewhat difficult; and 1 – Not difficult at all. A letter explaining the purpose of the study was attached to the questionnaires. Because of COVID-19 restrictions and protocols, the respondents were instructed to deposit their filled-up questionnaires in a box provided at the monitoring area before they are discharged home. A validated translation of the form in the dialect was also attached.

### ***Data analysis method***

Five hundred seventy-four (574) of the 582 received responses were valid to be included in the study. The data were analyzed using the IBM SPSS Statistics program for windows version 27 and examined to determine whether the assumptions of statistical analyses were met. The statistical method used to analyze demographic data and answer the research question was purely descriptive statistics – count, minimum, maximum, range, mean, frequency, percent.

## RESULTS

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The survey responses consisted of 582 among the 688 personnel during the 4-day second dose Covid-19 vaccination roll out. Some questionnaires were not returned during the survey and some others were invalidated for incomplete data. A total of 574 responses were then considered and analyzed.

Of the respondents, 188 (32.8%) belong to the 21-30 years old age group and closely followed by those belonging to 31-40 (32.1%) and 41-50 years old (20.2%) with a mean age of 36.7 and standard deviation of 10.65. More than half of the respondents were females (62.9%) and single (51.9%). A slight majority of respondents were college graduates (51.2%) and most were Full Time

employees of the government institution. Personnel of the Health Operations division comprised 51.7% of the respondents. Majority or 94.3% did not have a history of Covid-19 infection before the immunization and 93.0% did not have any member of the immediate family infected with Covid-19 at the date of immunization (Table 1).

More than half of the respondents in the study (63.4%) scored their anxiety level at 0 (None or absence of anxiety); thirty-nine or 6.8% scored their anxiety level at 1, followed by anxiety level of 3 (6.4%) and anxiety level of 2 (5.9%). Only 10 (1.7%) respondents scored their anxiety level above 9. An anxiety level of 0-9 means None- Mild Anxiety (Table 2).

**Table 1**

*Frequency of distribution of personnel according to demographic variables.*

Category	Frequency (f)	Percentage (%)	Mean	SD
<b>Entire Group</b>	<b>574</b>	<b>100</b>	<b>36.7</b>	<b>10.65</b>
Age (years)				
21-30	188	32.8		
31-40	184	32.1		
41-50	116	20.2		
51-60	77	13.4		
Above 60	1	0.2		
NS	8	1.4		
Sex				
Male	212	36.9		
Female	361	62.9		
NS	3	0.2		
Civil Status				
Single	298	51.9		
Married	267	46.5		
Separated	3	0.5		
Widow	3	0.5		
NS	3	0.5		
Education				
High School Graduate	14	2.4		
College Level	33	5.7		
College Graduate	294	51.2		
Post-Graduate	45	7.8		
MD	182	31.7		
NS	6	1.0		
Employment				
Temporary	4	0.7		
Job Order	57	9.9		
Contract of Service	106	18.5		
Permanent Part-Time	83	14.5		
Full-Time	225	39.2		
NS	99	17.2		
Division				
Administrative	85	14.8		
Finance	18	3.1		
Health Operations	297	51.7		
Nursing Service	174	30.3		
History of Covid-19 Infection				
Yes	31	5.4		
No	543	94.3		
NS	2	0.3		
History of Covid-19 Infection in Family				
Yes	39	6.8		
No	523	91.1		
NS	12	2.1		

**Table 2**  
*Anxiety level of Health Personnel (n = 574).*

<b>Anxiety Level of Respondents (n=574)</b>		
<b>Score</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
0	364	63.4
1	39	6.8
2	34	5.9
3	37	6.4
4	28	4.9
5	14	2.4
6	7	1.2
7	27	4.7
8	8	1.4
9	6	1.0
10	3	0.5
11	2	0.3
12	1	0.2
13	2	0.3
14	1	0.2
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	1	0.2
<b>TOTAL</b>	<b>574</b>	<b>2.4</b>

The results of Table 3, show that more than half of the respondents (64.8%) signified that the degree of their anxiety related to Covid-19 vaccination was Not Difficult at all.

Moreover, a sizable number of respondents (21.8%) did not answer the degree of difficulty that they felt related to anxiety.

**Table 3**  
*Level of Difficulty to Function related to Anxiety*

	Level of Difficulty of the Problem	
	Frequency (f)	Percentage (%)
No answer	125	21.8
Not difficult at all	372	64.8
Somewhat difficult	73	12.7
Very difficult	3	.5
Extremely difficult	1	.2
<b>TOTAL</b>	<b>574</b>	<b>100.0</b>

**Discussion**

The purpose of this study was to determine the level of anxiety to Covid-19 vaccination among personnel in a tertiary government hospital. More than half of the respondents in the study (63%) scored their anxiety level at 0 (None or absence of anxiety). Thirty-nine or 6.8% rated their anxiety level at 1, followed by anxiety level of 3 (6.4%) and anxiety level of 2 (5.9%), while 10 (1.7%) respondents scored their anxiety level above 9. The mean anxiety level when all responses were tabulated is 1.52 (Mild Anxiety) and a standard deviation of 2.710. An anxiety score of 0-9 means None-Mild Anxiety. A score of 10-14 means Moderate Anxiety and a score of 15-21 means Severe Anxiety. At the level of medical care however, the frequency occurring beyond the accepted normal level should be sought out and intervention should be extended. This correlates with the general notion that Generalized Anxiety Disorder can

negatively impact a patient's quality of life and disrupt important activities of daily living. Successful outcomes may require a combination of treatment modalities tailored to the individual patient (Locke, Kirst, et al., 2015).

Majority of the personnel did not have the feeling of nervousness, anxiety or described themselves at edge (77.2%); did not have a sense of Not Being Able to Stop or Control Worrying (82.8%); Worrying too much about different things (75.6%); Trouble Relaxing (84 %); Being so Restless that it was hard to keep still (91.5%); Becoming easily annoyed or Irritable (82. 4%) and Feeling afraid, as if something awful might happen (77%).

More than half of the respondents (64.8%) signified that the degree of their anxiety related to Covid-19 vaccination was Not Difficult at All. The higher percentage of No Presence of Anxiety was observed in higher age groups. The higher the age group of

the personnel, the higher is the percentage of the Absence of Anxiety. The highest Absence of Anxiety was observed with the 61 and above age group (100%), followed by 51-60 (70.1%) and 41-50 age group (69.8%). An only respondent with severe anxiety was found in the 21-30 age group. These findings were consistent with those of community-based epidemiologic surveys, and the that of Flint, Peasley-Miklus, et.al., (2010) that anxiety disorders are less prevalent in older than younger adults theorized as reluctance on the part of older people to acknowledge emotional and psychological symptoms.

Male respondents showed a higher incidence of No Anxiety (73.1%) than females (57.6%). There is a higher frequency of females who scored above the anxiety level of 9 that indicated Moderate to Severe Anxiety. This validates the findings of Christiansen (2014), that females are repeatedly found to be more likely than males to suffer from anxiety in general and to be diagnosed with most anxiety disorders and that of Hallers-Haalbom and Maas, et.al's (2020) observation that women are at much higher risk to develop an(y) anxiety disorder. Women seem to experience more severe and long-lasting symptoms than men.

Personnel at the Finance and resource generation division has a

higher percentage of No Anxiety as compared to other divisions in the hospital, followed by Nursing Service and Administrative division. This slightly relates to the conclusion made by Khana, et.al. (2020) that pointed out that nurses have higher odds of developing anxiety than other health workers. The Health Operations division has the lowest percentage of No Anxiety response. Respondents who have not been infected with the Covid-19 virus have the higher frequency of Some Degree of Anxiety but also incidentally, the group has the slightly higher percentage of No Anxiety responses at 63.4%.

When education is correlated with the level of anxiety, the majority of the personnel who belong to the High School Graduate group has the highest percentage of No Anxiety level (85.7%), followed by college level personnel (75.8%) and College graduates (69.4%). Incidentally, the Physicians' or MD group has the highest frequency of scores above 9 (Moderate-Severe Anxiety). When employment and anxiety levels were cross-tabulated, the Contract of Service personnel have the lowest anxiety level (No Anxiety = 78.9%) followed by Permanent Part-Time (No anxiety = 67.9%) and with Temporary employment (No Anxiety = 64%). Interestingly, the Temporary employment group has the highest



incidence of anxiety level scores greater than 9 (Moderate – Severe Anxiety). In the correlation of hospital division with the level of anxiety, the Finance division has the lowest anxiety level (No Anxiety = 83.3%) followed by Nursing (74.7%), Administration (73.8%) and Medical group (52.5%). The Medical group also has the highest frequency of personnel anxiety level scores of more than 9 (Moderate-Severe Anxiety). Those who had not been infected with Covid-19 virus has the higher frequency of anxiety scores above 9. Likewise, those who did not have a family member infected with Covid-19, has the higher frequency of anxiety level scores of more than 9.

Majority of the respondents (64.8%) rate the effect of anxiety to functioning as Not Difficult at all with those above 60 years of age (100%), then 51-60 (74%) and 31-40 age group (66.8%), respectively. A rating of Somewhat Difficult was highest with the 21-30 age group (19%). Male respondents, those who were separated (66.7%), High School graduates (78.6%), and Job Order employment status (100%), those in the Administrative division (67.9%), with history of Covid-19 infection (77.4%), and those who did not answer whether any family member was infected with Covid-19 (75%) rated higher the level of functioning as Not Difficult at All.

The study was conducted during the roll out for the second dose of vaccination. The results would have been different if the study was conducted on the first inoculation.

### **Conclusion**

Healthcare workers are among the most at risk segment of society in this Covid-19 pandemic, yet the most essential in managing infected patients in the community. Vaccination at this point of the pandemic is crucial not only to the healthcare worker but also to reach the level of herd immunity that epidemiologists and scientists are aiming for. Covid-19 related fears and anxiety plus the hesitancy towards the vaccine are crucial in the acceptance of the inoculation.

In general, as the subjects in the study become older, the higher the percentage of No Anxiety response, male respondents, those who are married, belonging to Contract of Service employment status, and High School graduate have a higher percentage of No Anxiety level response. Likewise, those who belong to the Finance and Resource generation division, with previous history of Covid-19 infection and with a history of Covid-19 infection in the immediate family reported a higher percentage of No Anxiety.

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