
Relationship between Psychiatric Patients' Awareness about COVID-19 and Their Attitudes toward its Vaccine

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Abstract

Psychiatric patients are at higher risk of dying from COVID-19, making the concern of vaccination willingness crucial. **Aim:** This research aimed to assess the relationship between psychiatric patients' awareness of COVID-19 and their attitude toward its vaccine. **Design:** A descriptive-correlational design was used. **Setting:** The research was done at an outpatient clinic and inpatient psychiatric department of the neuropsychiatric and neurosurgery hospital at Assiut University Hospital. **Sample:** Included 186 psychiatric inpatients and 278 psychiatric outpatients. **Tools:** three tools were used; **Tool (1):** Structured interviewing questionnaire, **Tool (2):** Coronavirus (COVID-19) Awareness Scale, and **Tool (3):** Attitudes toward COVID-19 vaccines. **Results:** The research subjects have the highest mean score and SD of coronavirus concern (12.2±3.3), followed by exaggerated perception (5.2±2.1) and the lowest mean score is related to immunity perception (2.7±1.2). The mean rank of coronavirus concern is higher among outpatients than inpatients and there is a significant relation between outpatient and coronavirus concern (p-value= 0.000). **Conclusion:** Psychiatric patients who have coronavirus concerns and have information about the virus have the willness to be vaccinated more those patients who have not aware of the pandemic of coronavirus. Also, it can be concluded that outpatients are more aware of COVID-19 as they are in more contact with mass media than inpatients. **Recommendations:** Implementation of educational programs about the effects and importance of vaccines against COVID-19.

Keywords: Attitude, Awareness, COVID-19, Vaccine & Psychiatric patients.

Introduction:

Coronavirus disease (COVID-19) is a viral illness that has spread over the world and is a significant topic of public health research. It continues to be a problem for many nations. Numerous attempts have been taken to stop the spread of the virus, but only vaccination can stop the pandemic and contain it (Bilsin & Kocamaz, 2022).

Vaccines are efficient therapies that can reduce the high burden of disease on a global scale. However, a significant issue for public health agencies is a public reluctance to get vaccines (El-Elimat et al., 2021).

Patients who are mentally ill have the risk of both contracting COVID-19 and developing a more serious condition. They frequently have more comorbid conditions such as diabetes, respiratory illness, obesity, and cardiovascular disease. All of these characteristics raise the chance of getting COVID-19, the quarantine, and resulting in societal changes in particular. It's critical to comprehend COVID-19 vaccine reluctance if you want to encourage people with mental health issues to receive vaccines (Payberah et al., 2022).

Due to COVID-19, patients with severe mental illness die more frequently than the normal population. The correlation between COVID-19 and elevated levels of

loneliness, sadness, stress, and insomnia indicates that COVID-19 lowers the immune system (Suhass, 2021). A person with a mental illness may decline the vaccine due to a lack of understanding, expense, accessibility issues, immunization-related anxieties, and a lack of health education from their primary care providers. Additionally, individuals with paranoid delusions may not believe in vaccinations and worry about interactions with psychoactive drugs (Miles et al., 2019).

The coronavirus disease 2019 has brought significant pressure on nurses as they are the frontline of care. Patient care responsibilities fall mostly on the shoulders of nurses. The demands on nurses have increased and public health decision-making has received more attention. Despite criticism, nurses and other healthcare professionals have remained society's leaders in advising the public during the epidemic (Riedel et al., 2021).

Significance of the study:

Many public health initiatives have been advocated as a result of COVID-19 diseases. Less attention has been paid to its effects on a population at risk who suffers from serious mental illness. Due to cognitive impairment brought on by their condition, people who

are mentally ill may find it difficult to absorb information overload when it arises. High rates of smoking and increased medical co-morbidities like diabetes mellitus and systemic hypertension lead to an increase in the problem and risk of spreading diseases in the hospitals for mental illnesses. These factors, along with a lack of awareness of risk and diminished efforts regarding personal protection (i.e., social distance, hand-washing, and home isolation) also contribute to the problem (Muruganandam et al., 2020). So, the relationship between psychiatric patients' awareness of COVID-19 and their attitude toward its vaccine is very important in restricting of COVID-19 pandemic.

Aim of the Study:

This research aimed to assess the relationship between psychiatric patients' awareness of COVID-19 and their attitude toward its vaccine.

Research questions:

1. What is the degree of awareness regarding COVID-19 and attitudes toward its vaccines among psychiatric patients?
2. Is there a difference between psychiatric inpatients and outpatients regarding awareness of COVID-19 and attitudes toward its vaccines?

Subjects and Methods:

Research Design: A descriptive correlational design was used in this research.

Setting: The research was done at a psychiatric outpatient clinic and inpatient department of the neuropsychiatric and neurosurgery hospital at Assiut University. The hospital offers services for Assiut city and most of the bordering governorates and is the largest hospital in Upper Egypt (Assiut, Sohage, Qena, and Aswan). The hospital's psychiatry and neurology departments are spread across 10 floors; they are located on the first and second levels of the building, respectively. The hospital's bottom floor houses clinics for neurology, neurosurgery, and psychiatry. The female inpatient psychiatric unit is located on the second floor, the male inpatient psychiatric unit is located on the third floor and the addiction department is located on the fourth floor.

Subjects: Non-probability (Purposive) sample was applied in this research. A current study was carried out on psychiatric patients. They were included in the study based on the following criteria:

Inclusion criteria:

- Accept to participate in the study.
- Diagnosed with any psychiatric disorders.
- Age range between (15 to 60 years).

Exclusion criteria:

- Psychiatric patients with mental retardation.
- Psychiatric patients with an organic brain disorder.
- Psychiatric patients with medical illnesses.

Sample size:

A current study was carried out on 468 psychiatric patients (188 psychiatric inpatients and 280 psychiatric outpatients). **The sample was computed using the equation given below:**

$$n = \frac{[DEFF * N * p * (1-p)]}{[(d^2 / Z^2)_{1-\alpha/2} * (N-1) + p * (1-p)]}$$

DEFF (Design effect) = 1

N (population) = 368 psychiatric inpatients and 1030 psychiatric outpatients

p (Hypothesized %) = 50% +/- 5

d (tolerated margin of error) = 0.05

Z (level of confidence) = 1.96

α (Alpha) = 0.05

$$N \text{ (psychiatric inpatients)} = \frac{[1 * 368 * 50\% +/- 5 (1 - 50\% +/- 5)]}{[(0.05)^2 / (1.96)^2 - 0.05 * (368 - 1) + 50\% +/- 5 (1 - 50\% +/- 5)]}$$

N (psychiatric inpatients) = 188 psychiatric inpatients

$$N \text{ (psychiatric outpatients)} = \frac{[1 * 1030 * 50\% +/- 5 (1 - 50\% +/- 5)]}{[(0.05)^2 / (1.96)^2 - 0.05 * (1030 - 1) + 50\% +/- 5 (1 - 50\% +/- 5)]}$$

N (psychiatric outpatients) = 280 psychiatric outpatients

Tools of the study:

Tool (1): Self-administered questionnaire included two parts:

Part I: Included personal characteristics such as name, age, residence, educational level, and occupation.

Part II: Included clinical characteristics related to diagnosis, and the date of admission to the hospital (one week, two weeks, three weeks, and four weeks ago).

Tool (2): Corona Virus (COVID-19) Awareness Scale:

The Corona Virus Awareness Scale-10 (CAS-10) consists of a 10-item was developed by (Landa-Blanco et al., 2021) in the English language and translated into the Arabic language by the researcher. The CAS-10 features a 5-point Likert-type response set (0–4). This scale assesses the degree of awareness about Corona Virus (COVID-19). The three subscales are Coronavirus concern, which is defined as being concerned about contracting COVID-19 and includes the following items: 1, 2, 4, 6, and 10; Exaggerated Perception, which contains three items (3, 8, and 9), relates to the idea that governments and the media are overreacting to the COVID-19 issue, whereas Immunity Perception, which has two items (5 and 7), refers to the idea that COVID-19 infection is unlikely. The raw scores for the related elements are averaged to create each factor's mean (without reverse coding). A higher Corona Virus Concern score (which exclusively comprises positively oriented items) denotes a greater Corona Virus Awareness when item orientation is taken into account. Low Corona Virus

Awareness is indicated by high scores on the Exaggerated Perception and Immunity Perception subscales. Cronbach's alpha for the CAS-10 is 0.762, which is regarded as satisfactory (Landa-Blanco et al., 2021).

Tool (3): Attitudes toward COVID-19 vaccines: -

An attitude toward COVID-19 vaccines was developed by El-Elimat et al., (2021) in the English language and translated into the Arabic language by the researcher. This scale assesses the degree of attitudes toward COVID-19 vaccines. The attitudes towards COVID-19 vaccines section consists of six statements on a five-point Likert scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree), as well as questions on reluctance and worries about COVID-19 vaccines. The Cronbach's alpha for the items in this area was 0.6, which denotes high reliability. The researcher modified the scale and made several changes to this scale, including the addition of item number seven and a word change in item number five from (Most individuals will refuse to take the COVID-19 vaccination once it is approved in Jordan) to (How much you agree to take a vaccine for the call from COVID-19?) (Most people will refuse to take the COVID-19 vaccine once licensed in Egypt).

Tools validity:

Five professionals with advanced degrees in psychiatric and mental health nursing evaluated the research tools for validity. As required, the adjustments were completed.

Tools reliability:

Cronbach's Alpha was utilized to assess the reliability of the tools; it was (0.78) for Coronavirus (COVID-19) Awareness Scale & (0.74) for Attitudes toward COVID-19 vaccines after modification of the scales.

Ethical and legal considerations:

Before starting the study, ethical approval was obtained from the scientific research ethical committee of the faculty of Nursing, Assiut University number 320 (26-10-2021). The manager of the neuropsychiatric and neurosurgical hospital at Assiut University Hospital granted formal approval. Before data collection, psychiatric patients were told of the study's purpose and nature, which didn't include any injury or pain, and oral consent was obtained before any data were collected. Additionally, they received assurances that the data was private and would only be used for research. The study's participants were made aware that participation was optional and that they had the choice to discontinue at any time. They were also advised that the data collected would be kept anonymous and confidential.

Pilot study:

Pilot research was conducted on 10% of the total sample (19 psychiatric inpatients and 28 psychiatric

outpatients) to assess the clarity and applicability of the tools. No changes were made to the tools. So, they were added to the total sample.

Procedure:

Two phases of the actual fieldwork, which lasted six months from November 2021 to April 2022, were involved:

The preparatory phase:

The researchers reviewed past and currently available literature relevant to the study topic to acquire in-depth theoretical knowledge of the various aspects of the problem then they prepared the tools for the study.

The implementation phase:

- Following the evaluation of the study's proposal by the nursing faculty's ethical and scientific committee, to obtain formal approval to conduct the study, the Dean of the Nursing Faculty at Assiut University wrote a letter to the Manager of the Neuropsychiatric and Neurosurgery Hospital at Assiut University Hospital.
- After receiving formal approval to carry out the study. Each psychiatric inpatient and outpatient were questioned individually by the researchers, who also gave a brief explanation of the study's goals and obtained her oral agreement to participate. Three days a week, the researchers visited with patients in the inpatient psychiatric unit. Each day, about two to three sheets were completed. Each interview lasted between 25 and 35 minutes, depending on the patient's schedule.
- Also the researchers visited with psychiatric outpatients on two additional days each week and completed five to six sheets each day. According to the out-patients working hours and each interview lasted around 20 to 30 minutes.

Statistical analysis:

SPSS version 22 was used for data entry and analysis (Statistical Package for Social Science). Numbers, percentages, means and standard deviations were used to show the data. To compare qualitative variables, the Chi-square test was employed. Quantitative differences across groups were compared using the independent samples t-test. In the instance of non-parametric data, Spearman correlation was used to assess the correlation between quantitative variables. The P-value is considered statistically significant when $P < 0.05$.

Results:**Table (1): Personal characteristics of the studied psychiatric patients (n=468)**

Personal characteristics	Studied psychiatric patients (n=468)	
	Number	%
Age (years)		
Less than 20 years	21	4.5
20 to less than 30 yrs	174	37.2
30 to less than 40 yrs	167	35.7
40 yrs to less than 50 yrs	81	17.3
50 to 60 yrs	25	5.3
Min-Max	15-60	
Mean± SD	32.4±9.4	
Sex		
Male	281	60.0
Female	187	40.0
Educational level		
Illiterate	121	25.9
Read and write	31	6.6
Primary	47	10.0
Preparatory	44	9.4
Secondary	190	40.6
University	35	7.5
Working Status		
Not working & Students	353	75.4
Working (Employee)	37	7.90
Private workers	78	16.70

Table (2): Clinical characteristics of the studied psychiatric patients

Clinical characteristics	Studied psychiatric patients (n=468)	
	Number	%
Groups		
Inpatients	188	40.2
Outpatients	280	59.8
Diagnosis		
Bipolar disorder	238	50.9
Schizophrenia	176	37.6
Depression	54	11.5
Admission (N= 188)		
1 week	57	30.3
2 weeks	75	40.0
3 weeks	37	19.7
4 weeks	19	10.0

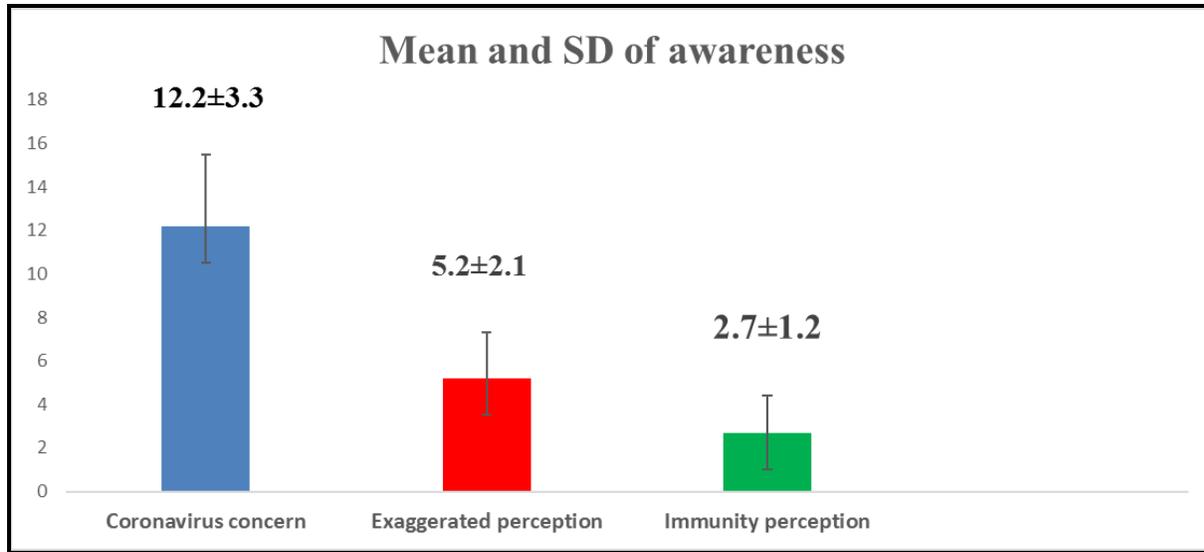


Figure (1): Mean and SD of awareness's subscales among psychiatric patients (n=468)

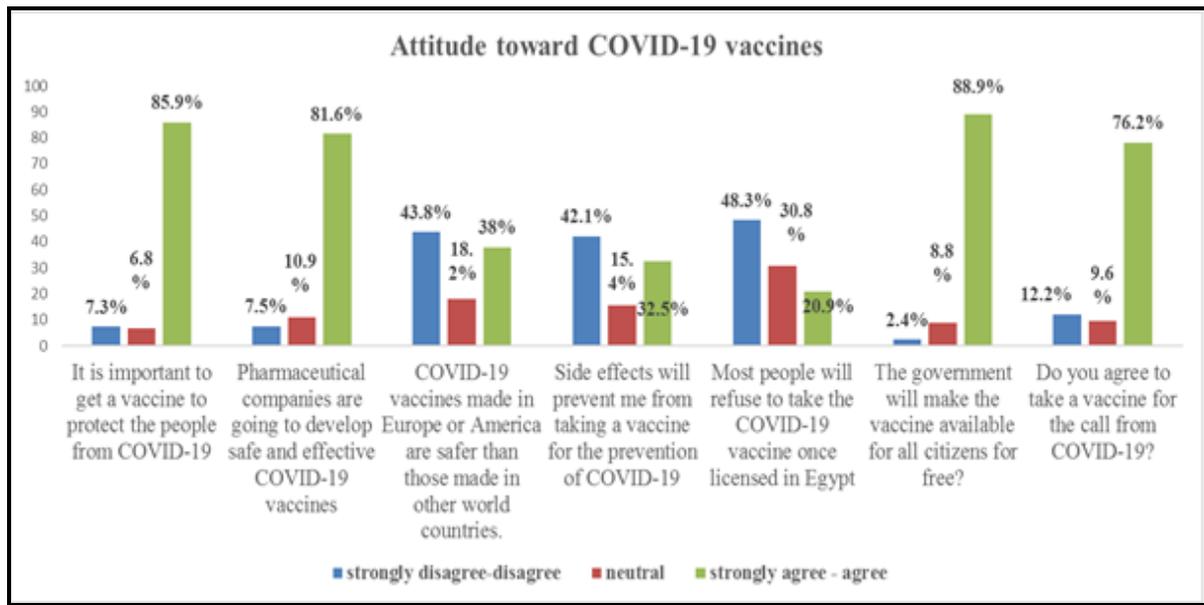


Figure (2): Attitude toward COVID-19 vaccines among psychiatric patients (n=468)

Table (3): Mean rank of awareness subscales and groups of patients (n=468)

Awareness subscales	Groups	Mann-Whitney U Test			
		N	Mean Rank	U	p-value
Corona virus Concern	Inpatient	188	197.15	19299.0	0.000**
	Outpatient	280	259.58		
Exaggerated perception	Inpatient	188	281.42	17499.5	0.000**
	Outpatient	280	203.00		
Immunity perception	Inpatient	188	289.60	15960.5	0.000**
	Outpatient	280	197.50		

* Statistically significant difference (p<0.05)

** Highly statistically significant difference (p<0.01)

Table (4): Correlation between awareness's subscales score and attitude toward COVID-19 vaccines scale items score among psychiatric patients (n=468):

Attitude toward COVID-19 vaccines	Psychiatric Patients' Awareness					
	Corona virus Concern		Exaggerated perception		Immunity perception	
	r	p	r	p	r	p
It is important to get a vaccine to protect the people from COVID-19	.581	.000	-.228	.000	-.360	.000
Pharmaceutical companies are going to develop safe and effective COVID-19 vaccines.	.610	.000	-.272	.000	-.341	.000
COVID-19 vaccines made in Europe or America are safer than those made in other world countries	.036	.441	-.063	.171	-.050	.282
Side effects will prevent me from taking a vaccine for the prevention of COVID-19.	-.069	.134	.183	.000	.230	.000
Most people will refuse to take the COVID-19 vaccine once licensed in Egypt	-.146	.002	.111	.016	.237	.000
The government will make the vaccine available for all citizens for free.	.253	.000	-.103-*	.026	-.187-**	.000
How much you agree to take a vaccine for the call from COVID-19	.530 **	.000	-.231-**	.000	-.347-**	.000

** (Correlation is significant at the 0.01 level)

*(Correlation is significant at the 0.05 level)

Table (1): Shows the personal data of the studied participants. As regards age, **37.2%** of the studied participants in the age group ranged from **20 to less than 30 yrs.** The mean age of the studied participants was **32.4±9.4**; **60%** of the studied participants were males; **40.6%** of the participant had secondary education level; and about three-quarters of the studied participant weren't working (**75.4%**).

Table (2): Illustrates the clinical characteristics of the studied participants, more than half of the studied participants (**59.8%**) were in psychiatric outpatients' clinics and about half of the patients (**50.9%**) are diagnosed with bipolar disorders' patients. According to the period of admission, **40.0%** of the studied participants spent 2 weeks in the hospital.

Figure (1) demonstrates that the study's participants have the highest mean score and SD of coronavirus concern (**12.2±3.3**), followed by exaggerated perception (**5.2±2.1**), and the lowest mean score is immunity perception (**2.7±1.2**).

Figure (2): Shows the attitude toward COVID-19 vaccines, the majority of research participants agreed or strongly agreed that the government should provide the vaccination free of charge to all citizens. Additionally, they stated that vaccination is crucial for protecting against COVID-19, with respective percentages of **88.9%** and **85.9%**.

Table (3): Shows that; the mean rank of coronavirus concern is higher among the outpatient group than the inpatient one and there is a significant relation between the outpatient group and coronavirus concern

(**p-value= 0.000**). Also, there are significant relations between exaggerated perception, immunity perception, and the inpatient group (**p-value=0.000**) for both.

Table (4): Shows that, the correlation between awareness subscales and attitudes toward COVID-19 vaccines among psychiatric patients. Patients who reported that the vaccine is very important, they were known that companies will develop a safe vaccine and patients whose point of view that European and American COVID-19 vaccinations are safer than those produced in other nations are positively and significantly correlated with coronavirus concerns. On the other hand, attitude toward COVID-19 vaccines is negatively and significantly correlated with exaggerated immunity perception. Patients who understand that side effects will prohibit them from receiving a COVID-19 vaccination are positively and significantly correlated with exaggerated immunity perception. Patients who saw that when the COVID-19 vaccine was licensed in Egypt, people would refuse to get it, and the government would provide it free of charge to all residents, had a negative and significant correlation with inflated immunity perception.

Discussion:

This research aimed to assess the relationship between psychiatric patients' awareness of covid-19 and their attitude toward its vaccine. Recently, there is evidence that individuals with mental illness should

be prioritized for COVID-9 vaccinations because the hospitalization and mortality rates are increasing more than the general population. the attitude toward vaccination is considered the main barrier and may reduce vaccine uptake in this population (Fond et al., 2021).

According to current results; the coronavirus concern has a higher mean score rather than other subscales of awareness. Such findings are consistent with those of (Dalky et al., 2021) who studied the assessment of the awareness, perception, attitudes, and preparedness of healthcare professionals potentially exposed to COVID-19 in the United Arab Emirates and found that most patients had the appropriate amount of awareness regarding the COVID-19 epidemic. Understanding the symptoms is important for managing and preventing the spread of COVID-19 because it enables the hospital to identify the hazard and take the appropriate measures.

The present study showed that a high percentage of psychiatric patients agreed to have the COVID-19 vaccine. It can be explained by psychiatric patients saying that they were hearing from their parents, relatives, and neighbors that persons who did not take the vaccination would die and the mass media was showing high proportions of deaths due to the coronavirus. Similarly, Danenberg et al., (2021) discovered that the majority of patients with serious mental illnesses are willing to get vaccinated, and individuals who delayed getting vaccinated were willing to do so later in the hospital or their communities.

The recent research found that the mean rank of the outpatient group regarding the coronavirus is higher than that of the inpatient. Also, another study showed that patients who are admitted to the hospital were suffering from severe mental illness and there are many reasons for low awareness such as social deprivation, decreased access to mass media, and relapse of psychiatric symptoms (Muruganandam et al, 2020).

There is a positive relation between covid-19 awareness and agreement of taking the vaccine as clarified in the current study. This result can be explained by a psychiatric patient who is constantly informed about the situation of the coronavirus and are afraid of catching the coronavirus have a high readiness to be vaccinated against this virus. This result is similar to that of (Gelaw & Andargie, 2021), who found that participants are 1.6 times more likely to be aware of the COVID-19 vaccination than those who do not have access to the media and are informed about it.

Furthermore, this study demonstrated a positively correlated between mental patients' perceptions of side effects and their knowledge of the coronavirus.

Patients who perceived side effects would avoid receiving the COVID-19 vaccination. Patients who were apprehensive about drug side effects may not be ready to get the vaccination, which may account for this finding.

Conclusion:

Based on the obtained results, it can be concluded that psychiatric patients who have coronavirus concerns and have information about the virus are willing to be vaccinated more than patients who didn't aware of the pandemic of coronavirus. Also, outpatients were more aware of COVID-19 as they were in more contact with mass media than those inpatients.

Recommendations:

The following suggestions are made in light of the findings of this research:

1. Implementation of psycho-educational programs about COVID-19 as ways of transmission, symptoms, and complications of the disease.
2. Implementation of educational programs about the effects and importance of vaccines against the virus.

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