

Risk Perceptions for COVID-19 among Individuals with Chronic Diseases Pre- Post COVID -19 Vaccination Announcement

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Abstract

Introduction: According to the World Health Organization (WHO), coronavirus disease (COVID-19) had become the global concern as public health emergency. Cases are increasing as alarming rate. WHO also reported that prognosis of COVID-19 remains mostly unknown. **Aim:** This study aimed to assess risk perceptions for Covid-19 among individuals with chronic diseases pre- post COVID -19 Vaccination Announcement. **Research design:** exploratory comparative research design was employed to achieve the study objectives. **Setting:** The study was conducted at cardiac and diabetic outpatient clinics at Alexandria Main University Hospital, Egypt. **Subjects:** The study included random sample of 80 adult patients from both genders diagnosed as cardiovascular disorders, Diabetes Meletus, or both, who are admitted to the above-mentioned settings were included in the study. **Tools:** two tools were used for data collection; tool I- Patient **Demographic characteristics** and clinical data, tool II- perception of COVID 19 risk. **Results:** this study shows that the highest percentage of studied patients had high risk perception pre-post vaccination announcement. Also results revealed that more than half of studied patients agree with such statement " If the individual receive the vaccine, he leaves the precautionary measures and live a normal life" pre - post vaccination announcement. **Conclusion:** This study concluded that the highest percentage of studied patients had high risk perception pre COVID-19 vaccination announcement while all studied patients had high risk perception post vaccination announcement. **Recommendations:** Replication of the study on large probability sampling is require.

Keywords: Risk Perceptions for Covid-19 -chronic Diseases - Covid -19 Vaccination

Introduction:

The recent outbreak of coronavirus disease 2019 (COVID19) pandemic has spread rapidly on a global scale, leading to increase rate of hospitalizations and deaths worldwide (Ahuja& et al., 2021). The pandemic has impacted the world significantly due to both direct effects of the virus on physical and mental health, as well as indirect economic and social effects (Dryhurst, 2021). It is a highly infectious disease, so it is rapidly spread and poses a severe public health hazard around the world. Flu-like symptoms, acute respiratory distress syndrome, acute kidney injury, myocarditis, and organ failure are all common symptoms of COVID-19 (Ahuja, & et al., 2021). The most vulnerable patients to develop COVID-19 symptoms are the elderly, due to immunodeficiency occurred with age, and people with high blood pressure, cardiovascular diseases, and diabetes (Dominguez, Jiménez, Eraso, Otero, Pérez, & Vivas, 2020).

In 28 of January 2021, over one hundred million individuals have confirmed COVID-19 infections, resulting an over 2.1 million deaths worldwide. More than 220 countries reported laboratory-confirmed cases of COVID-19 on all continents except Antarctica. In the United States, over 25.4 million cases of COVID-19 had been confirmed in 28 of January 2021, resulting an over 427, 000 deaths, making it the third leading cause of death after heart disease and cancer. Beginning late in March 2020, the United States had more confirmed infections than any other country in the world. The US also reported the most confirmed mortality rate in the world, followed by Brazil and India (Cennimo, 2019). In Egypt, from Jan 3 to 6 of February 2021, there had been 168, 597 cases confirmed as COVID-19 with 9, 560 deaths (WHO, 2021). Recently during 15 of August 2022, there were 587 396 589 confirmed cases with COVID-19 with 6 428 661 confirmed deaths worldwide (WHO, 2022).

Patients with Chronic disease especially cardiovascular disease, diabetes, cancer, and respiratory diseases are disproportionately affected, with increased risk of severe illness from COVID-19. Severe illness is defined when patients admitted to an intensive care unit (ICU) or stepdown unit, need invasive mechanical ventilation (IMV), or death (Ahuja, & et al., 2021; Kompaniyets, & et al., 2021). CDC (2021) mentioned that the risk of severe COVID-19 increases as the number of underlying medical conditions increases in a person. As the number of hospitalizations and deaths from COVID-19 continues to rise around the world, it's important to try to understand people's perceptions of risk and how to use mitigation strategies like hand washing, physical separation, avoiding public places, wearing face masks, perform laboratory testing, and receiving vaccination (Ahuja, & et al., 2021; Kompaniyets, et al., 2021; Stefan & et al., 2021).

Perceived risk could be defined as an individual's judgement of risk associated with a certain thing or situation. Risk has been characterized as a threat, or the prospect of negative effects. Individuals' perceptions of the world are influenced by belief, attitude, cultural sensitivity, and personal characteristics, as all influence not only decisions but also behaviors of peoples, who indirectly, exposed to environmental stressors. Furthermore, risk perception potentially could be a powerful moderator of epidemic progression, as it could influence the number of new positive cases, so the study of risk perception becomes increasingly significant. (Suhanti, Noorizki, & Pambudi, 2020; Cori, Bianchi, Cadum, & Anthonj, 2020).

The challenges which face health professionals are the current effects of COVID-19 on those with chronic diseases and those at higher risk for severe COVID-19 illness. So in this category there is the need for balance between protecting people with chronic diseases from COVID-19 while assuring them as they could engage in disease prevention measures, manage their conditions effectively, and safely receive the needed health care (Farley, 2020). Furthermore, there are no antiviral treatments for COVID-19, and only a few of the already available therapies had

proved to lower COVID-19 mortality rate among patients (Saied, Saied, Kabbash, & Abdo, 2021).

Safe and effective vaccines are a game-changing tool, but for the foreseeable future individuals must continue wearing masks, cleaning our hands, ensuring good ventilation indoors, physically distancing and avoiding crowding. Being vaccinated does not mean that they could throw caution to the wind and put themselves and others at risk, particularly because research is still ongoing into how much vaccines protect not only against disease but also against infection and its transmission (Who, 2022). An individual's risk perception has a substantial impact on their motivations to improve their health behavior and is important to determinant individual awareness in following the preventive healthy behavior. Risk perceptions have long been recognized as the key to guide people toward appropriate health behaviors. (Tejamaya, & et al., 2021; Suhanti, Noorizki, & Pambudi, 2020).

Florence Nightingale is one of the nurses pioneers who dealt with epidemics through the principles of hygiene and sanitation. Nightingale showed the relation between infection control and hand washing (World Economic Forum, 2020). Florence Nightingale's lessons nursing practice during the Crimean War are still being applied today during the COVID-19 pandemic which include essential handwashing and maintaining standards of cleanliness (Buheji & Buhaid, 2020).

Nurses also play a key role in providing public education, especially about infectious diseases prevention and in reducing the spread of misinformation around these diseases outbreak. The primary known function of the nurses in a global reaction toward a novel coronavirus like COVID-19 is to provide care for the sick, address their worries, and safeguard high-risk individuals, particularly those with chronic illnesses like diabetes or heart diseases. However, it is anticipated that nurses would play an even more significant role in managing and preventing the pandemic. Even before a disease had the chance to inflict extensive havoc, nurses play an important part during the pandemic (Buheji&Buhaid, 2020).

In sight of all aforementioned knowledge, and in absence of confirmed and succeed vaccine against COVID 19, nurses must concern the risk perception of those patient with comorbidities to change their health behaviors to follow the preventive instructions precaution. This is the best solution now to control COVID 19 outbreak and sugared life of those individuals with chronic disease. Therefore, it is important to assess the risk perception of COVID 19 pre and post COVID -19 Vaccination Announcement.

Aim:

This study aimed to assess risk perceptions for Covid-19 among individuals with chronic diseases pre- post COVID -19 Vaccination Announcement.

Materials and Method

Materials

Research design:

Exploratory comparative research design was used to accomplish the research goal.

Settings:

The present study was conducted at the outpatient clinics for patient with chronic disease at Alexandria Main University Hospital, Egypt. The outpatient clinic works two days per week for each specialty from 8.30 am to 12 pm.

Subjects:

Random sample of 80 adult patients of both genders diagnosed with chronic disease admitted to the above-mentioned settings for disease management, interventions and follow up. Subjects were included in the study according to the following **inclusion criteria:**

- Adult patients from both genders, aged from 18 to 60 years old.
- Patient who is conscious and able to communicate verbally.
- Patients willing to participate in the study.
- No history of Covid 19 nor vaccinated

The subjects of the study are selected according to power analysis (using the program **Epi-info7** to estimate the sample size) using the following parameters:

- Population size: 1000 in 2021
- Expected frequency: 50%
- Acceptable error: 10%
- Confidence coefficient: 95%
- Sample size: 80

Tools of the study:

Two tools were used to collect the necessary data.

Tool 1: Patient's Demographic characteristics and clinical data

It was developed by the researchers; it consisted of 8 items of questions covering data such as age, gender, marital status, level of education, residence, type of chronic disease, diagnosed with COVID-19 in the past, a family member or close contact had been diagnosed with COVID-19.

Tool II: Perception of COVID 19 risk:

This tool developed by researchers after review of the relevant literature (Vally, 2020) **It contains (20) items related to the following questions: -**

There is a possibility that I have covid-19, A person who gets covid-19. has no chance of being cured, a person with chronic disease has no chance of being cured, A person with a chronic disease, if infected with the Corona virus will be exposed to many complications, such as entering the intensive care unit and placing on a mechanical ventilator, also is more prone to complications than others, A person with a chronic disease is more likely to die if he is infected with the Corona virus than others, I have a feeling for sure that I have been infected with Covid 19 virus., I am too young to be infected with Covid -19 virus, People in my age do not contract the virus.

The risk perceptions were collected on a three-point scale ranging from "disagree" to "strongly agree, " where (1) indicates disagreement with the risk statement and (3) indicates strong agreement with the risk statement.

Moreover, People who don't get Covid -19 are just plain lucky, If I find a vaccine, I will receive it immediately, COVID 19 virus is an epidemic disease in your country, corona virus

could be prevented by good hygiene, Corona disease is a dangerous disease for people with chronic illness, think that you could contract corona virus in the coming year if you do not take any preventive measures, Keep the precautionary measures such as washing hands - wearing a mask - distancing from others, You will be able to implement the precautionary measures if you advise by them, If you receive the vaccination, you leave the precautionary measures and live a normal life, Receiving the vaccination makes me safe and I will not be exposed to the virus.

Scoring system:

Each participant will be asked to express his perception about COVID 19 before and after vaccination for each item on three-point Likert type scale ranging from 1 to 3.

- The score of (1) will be given to disagree.
- The score of (2) will be given to agree.
- The score of (3) will be given to high strongly agree.

Maximum total score of the studied patient's risk perceptions for Covid-19 was calculated to be 60 (20 statements x 3 points=60) and minimum total score equal to 20 (20 statements X 1 points=20) the row score transformed to percentage.

A total score percentage will be classified as the following:

0-20 was considered as **low perception**.

21 > 40 was considered as **moderate perception**.

41>60 was considered as **high perception**.

Methods

1 The study will be accomplished as follows:

An approval from the Ethical Research Committee of the Faculty of Nursing, Alexandria University was obtained.

Approval from research affairs committee was obtained.

An official letter was obtained from the Faculty of Nursing Alexandria University to the administrative authorities in cardiac and diabetic outpatient clinics at Alexandria Main University Hospital to take their permission to carry out the study after explaining its purpose.

Tools of the study was developed by the researchers thorough reviewing of the current literature

The developed tools were submitted to a jury of five experts in the field of Medical Surgical Nursing, faculty of Nursing, Alexandria University, to assess its content validity. Comments and suggestion were reviewed, and necessary modifications were done.

Reliability of COVID 19 risk perception tool was identified using Cronbach's Alpha statistical test. The reliability coefficient was (0.76 %).

Ethical Considerations:

Informed written consent was obtained from head nurses after explanation of the aim of the study.

- The patients were informed that his or her participation in the study is voluntary and
- He / she can withdraw at any time.
- Privacy of the study participants was asserted.
- Confidentiality of the collected data was assured.

A pilot study was conducted on 10% of the study sample (8 patients) to ascertain the applicability, clarity, and feasibility of the developed tool as well to calculate time needed to fill in the study tools. Necessary modifications were done. Those patients were excluded from the study sample.

Tools of the study was distributed to every patient for 10-15 minutes and filled by educated patients or their educated relatives to collect data related to perceptions of risk for covid-19 two times, the first before vaccination announcement and the second time after vaccination announcement.

Data collection started at the beginning of February 2021 and ended of August 2022 by the researchers.

Data were collected and analyzed to assess Perceptions of risk for covid-19 among individuals with chronic diseases pre and post COVID 19 vaccinations for all patients.

Statistics analysis:

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Qualitative data were described using number and percent. The **Kolmogorov-Smirnov**/test was used to verify the normality of distribution. Quantitative data were described using range (minimum and maximum), mean, standard deviation and median. Significance of the obtained results was judged at the 5% level.

The used tests were

1 - Mann Whitney test

For abnormally distributed quantitative variables, to compare between two studied categories

2 –Wilcoxon signed ranks test

For abnormally distributed quantitative variables, to compare between two periods

Results:

Table (1): showed that more than two thirds of the studied patients were among age group ($50 \geq 60$) and female with secondary education (66.3%, 66.3%, 62.5%) respectively. Most of the patients were married and from urban area (85%, 81.3%) respectively. Moreover, the table presents the highest percentage (40%) of them suffered from heart diseases.

Table (2): clarified that three quarters (75%) of the studied patients reported "agree" response with "A person with a chronic disease, if infected with the Corona virus, will be exposed to many complications, such as entering the intensive care unit and placing on

mechanical ventilators" and "Corona virus could be prevented by good hygiene". More than half (51.3%) of the studied patients mentioned "agree " response with " corona disease is a dangerous disease for people with chronic diseases" and "If you receive the vaccination, you leave the precautionary measures and live a normal life". Moreover, nearly two thirds of patients select "agree" response with " Keep the precaution measures such as washing hands - wearing a mask – keep distancing from others".

Table (3): presented that only more than one quarter (26.3%) of the studied patients select "agree" response with "A person with a chronic disease, if infected with the Corona virus will be exposed to many complications, such as entering the intensive care unit and placing on mechanical ventilators". Nearly one third (32.5%) of the studied patients reported "agree" response with " Keep the precaution measures such as washing hands - wearing a mask – keep distancing from others. Furthermore, more than the half (56.3%) of the studied patients select "agree" response with " If you receive the vaccination, you leave the precautionary measures and live a normal life

Table (4): The table showed that there was statistically significance difference with ($p < 0.001^*$) between the risk perception of patients with chronic diseases pre and post COVID 19 vaccination.

Table (5): clarified that the highest percentage (75%) of studied patients had high risk perception pre vaccination announcement while all studied patients (100%) had high risk perception post vaccination announcement.

Table (1): Distribution of the studied patients according to Demographic & clinical data

| Q | Patients' Demographic data | No. | % |
|----------|----------------------------|-----------|-------------|
| 1 | Age (years) | | |
| | 20 > 30 | 0 | 0 |
| | 30 > 40 | 0 | 0 |
| | 40 > 50 | 27 | 33.8 |
| | 50 ≥ 60 | 53 | 66.3 |
| 2 | Gender | | |
| | Male | 27 | 33.8 |
| | Female | 58 | 66.3 |
| 3 | Marital Status | | |
| | Married | 68 | 85 |
| | divorced | 12 | 15 |
| 4 | residence | | |
| | urban | 57 | 81.3 |
| | rural | 23 | 28.7 |
| 5 | Educational level | | |
| | Primary | 30 | 37.2 |
| | Secondary | 50 | 62.5 |
| 6 | Chronic disease | | |
| | diabetes | 22 | 27.5 |
| | Heart disease | 32 | 40 |
| | Hypertension | 26 | 32.5 |

Table (2): Distribution of the studied patients according to risk Perception pre vaccination (n = 80)

| Q | Risk Perception | Disagree | | Agree | | Strongly agree | |
|-----------|---|-----------|-------------|-----------|-------------|----------------|-------------|
| | | No. | % | No. | % | No. | % |
| 1 | There is a possibility that" I have covid-19" | 57 | 71.3 | 11 | 13.8 | 12 | 15.0 |
| 2 | A person who gets covid-19 "has no chance of being cured" | 68 | 85.0 | 12 | 15.0 | 0 | 0.0 |
| 3 | A person with a chronic disease who is infected with the Corona virus will not recover | 80 | 100 | 0 | 0.0 | 0 | 0.0 |
| 4 | A person with a chronic disease, if infected exposed to complications and placing on mechanical ventilators. | 20 | 25.0 | 60 | 75.0 | 0 | 0.0 |
| 5 | A person with a chronic disease is more prone to complications than others | 20 | 25.0 | 29 | 36.3 | 31 | 38.8 |
| 6 | A person with a chronic disease is more likely to die if he is infected with the Corona virus than others | 8 | 10.0 | 28 | 35.0 | 44 | 55.0 |
| 7 | I have a feeling for sure that I have been infected with the Covid 19 virus | 68 | 85.0 | 12 | 15.0 | 0 | 0.0 |
| 8 | I am too young to be infected with the virus 19 | 59 | 73.8 | 21 | 26.3 | 0 | 0.0 |
| 9 | People my age do not contract the virus. | 80 | 100 | 0 | 0.0 | 0 | 0.0 |
| 10 | People who don't get covid-19 are just plain lucky | 80 | 100 | 0 | 0.0 | 0 | 0.0 |
| 11 | If I find a vaccine, I will receive it immediately | 53 | 66.3 | 27 | 33.8 | 0 | 0.0 |
| 12 | I received the Covid 19 vaccine | 52 | 65.0 | 28 | 35.0 | 0 | 0.0 |
| 13 | Covid 19 virus is an epidemic disease in your country | 0 | 0.0 | 53 | 66.3 | 27 | 33.8 |
| 14 | Corona virus could be prevented by good hygiene | 0 | 0.0 | 60 | 75.0 | 20 | 25.0 |
| 15 | Corona disease is a dangerous disease for people with chronic diseases | 0 | 0.0 | 41 | 51.3 | 39 | 48.8 |
| 16 | Think that you can contract corona virus in the coming year if you do not take any preventive Measures? | 21 | 26.3 | 59 | 73.8 | 0 | 0.0 |
| 17 | Keep the precaution measures such as washing hands - wearing a mask - distancing from others | 29 | 36.3 | 51 | 63.8 | 0 | 0.0 |
| 18 | You will be able to implement the precautionary measures if you advise them | 53 | 66.3 | 16 | 20.0 | 11 | 13.8 |
| 19 | If you receive the vaccine, you will leave the precautionary measures and live a normal life | 39 | 48.8 | 41 | 51.3 | 0 | 0.0 |
| 20 | Receiving the vaccination makes me safe and I will not be exposed to the virus | 20 | 25.0 | 60 | 75.0 | 0 | 0.0 |

Table (3): Distribution of the studied patients according to risk Perception post vaccination (n = 80)

| Q | Perception | Disagree | | Agree | | Strongly agree | |
|----|---|----------|---|-------|------|----------------|------|
| | | No. | % | No. | % | No. | % |
| | | 1 | There is a possibility that I have covid-19 | 28 | 35.0 | 29 | 36.3 |
| 2 | A person who gets covid-19. has no chance of being cured | 80 | 100 | 0 | 0.0 | 0 | 0.0 |
| 3 | A person with a chronic disease who is infected with the Corona virus will not recover | 50 | 62.5 | 30 | 37.5 | 0 | 0.0 |
| 4 | A person with a chronic disease, if infected with the Corona virus, will be exposed to many complications, such as entering the intensive care unit and placing on a MV | 59 | 73.8 | 21 | 26.3 | 0 | 0.0 |
| 5 | A person with a chronic disease is more prone to complications than others | 37 | 46.3 | 27 | 33.8 | 16 | 20.0 |
| 6 | A person with a chronic disease is more likely to die if he is infected with the Corona virus than others | 61 | 76.3 | 19 | 23.8 | 0 | 0.0 |
| 7 | I have a feeling for sure that I have been infected with the Covid 19 virus | 0 | 0.0 | 47 | 58.8 | 33 | 41.3 |
| 8 | I am too young to be infected with the virus 19 | 31 | 38.8 | 49 | 61.3 | 0 | 0.0 |
| 9 | People my age do not contract the virus. | 80 | 100 | 0 | 0.0 | 0 | 0.0 |
| 10 | People who don't get covid-19. are just plain lucky | 80 | 100 | 0 | 0.0 | 0 | 0.0 |
| 11 | If I find a vaccine, I will receive it immediately | 0 | 0.0 | 46 | 57.5 | 34 | 42.5 |
| 12 | I received the Covid 19 vaccine | 0 | 0.0 | 56 | 70.0 | 24 | 30.0 |
| 13 | Covid 19 virus is an epidemic disease in your country | 0 | 0.0 | 28 | 35.0 | 52 | 65.0 |
| 14 | Coronavirus can be prevented by good hygiene | 14 | 17.5 | 66 | 82.5 | 0 | 0.0 |
| 15 | Corona disease is a dangerous disease for people with chronic diseases | 0 | 0.0 | 65 | 81.3 | 15 | 18.8 |
| 16 | Think that you can contract corona virus in the coming year if you do not take any preventive Measures? | 7 | 8.8 | 42 | 52.5 | 31 | 38.8 |
| 17 | Keep the precautionary measures such as washing hands - wearing a mask - distancing from others | 54 | 67.5 | 26 | 32.5 | 0 | 0.0 |
| 18 | You will be able to implement the precautionary measures if you advise them | 45 | 56.3 | 35 | 43.8 | 0 | 0.0 |
| 19 | If you receive the vaccination, you leave the precautionary measures and live a normal life | 35 | 43.8 | 45 | 56.3 | 0 | 0.0 |
| 20 | Receiving the vaccination makes me safe and I will not be exposed to the virus | 63 | 78.8 | 17 | 21.3 | 0 | 0.0 |

Table (4): Comparison between patient's risk perception pre-post COVID 19 vaccination (n = 80)

| Perception | Pre (20 – 80) | Post | Z | p |
|--------------------|------------------|---------------|--------|---------|
| Total Score | | | 4.225* | <0.001* |
| Min. – Max. | 41.0 – 59.0 | 49.0 – 55.0 | | |
| Mean ± SD. | 48.51 ± 6.69 | 51.95 ± 1.68 | | |
| Median | 45.0 | 52.0 | | |
| % Score | | | | |
| Min. – Max. | 35.0 – 65.0 | 48.33 – 58.33 | | |
| Mean ± SD. | 47.52 ± 11.15 | 53.25 ± 2.81 | | |
| Median | 41.67 | 53.33 | | |

SD: Standard deviation

Z: Wilcoxon signed ranks test

p: p value for comparing between pre and post

*: Statistically significant at $p \leq 0.05$

Table (5): Comparison between risk perception level of the studied patients pre / post vaccination announcement:

| Risk Perception | Pre | | Post | | Test of Sig. | P |
|---------------------------------|-----|------|------|-------|--------------|---------|
| | No. | % | No. | % | | |
| Low risk perception (0 - <22) | 0 | 0.0 | 0 | 0.0 | McN | <0.001* |
| Medium risk perception (22-<44) | 20 | 25.0 | 0 | 0.0 | | |
| High risk perception (44-60) | 60 | 75.0 | 80 | 100.0 | | |

SD: Standard deviation McN: McNemar test -

p: p value for comparing between **pre** and **post**

*: Statistically significant at $p \leq 0.05$

Discussion:

Nursing is the main active partners in any primary and secondary infectious disease prevention efforts. In primary or secondary infectious disease prevention program, nurses are one of the most engaged participants. Nursing care is the top first line committed profession in prevention of diseases and alleviation of suffering during and after treatment for any condition, including the COVID-19, in every country, regardless of their socioeconomic development. The best practices for patient management and clinical safety were created by nurses, who were the forerunners in doing so. The core role of nursing is to build cross-disciplinary bridges and effective teamwork, especially during the various stages of mitigation or in response to the surge of COVID-19 cases. Their work capacity and effectiveness thrive more during crises, wars situations, disasters, and even in infectious disease pandemics, such as the COVID-19. Nurses today facing the biggest challenges and concerns in their nursing profession towards the unprecedentedly outbreak of coronavirus worldwide especially those with chronic disease (Buheji, Buhaid, 2020).

Heart disease, diabetes, cancer, chronic renal disease, and obesity all raise the risk of developing a serious illness from COVID-19 (Hacker, Briss, Richardson, Wright, & Petersen, 2021). Elderly persons with chronic conditions had the highest fatality rates in this epidemic. Independent of COVID-19 infection, the existence of these comorbidities may have raised the chance of mortality rate. As a result, some elderly people with chronic conditions are afraid to visit the hospital. All these circumstances raise the risk of a relapse or mortality rate (Onder, Rezza, Brusaferrò, 2020).

Multiple health models suggest that COVID 19 risk perception is a vital component of any behavior change. The perception of risk depends on perceived threats. Thus, in order to change people's behavior to follow the COVID 19 health recommendations, it is important to understand how people perceive COVID 19 pandemic, how they are assessing these risks, and how such assessments might lead them to change their behavior. (Jehangiry, Bakhtari, Sohrabi, Reihani, Samei, & et al 2020; Dominguez, Jiménez, Eraso, Otero, Pérez, 2020). The goal of risk assessment is to contain the outbreak, enable emergency responses, and lessen the damage utilizing public health practices that don't use drugs. This is crucial in dealing with COVID-19 because there is no currently known cure or vaccine for the disease. Risk evaluation begins with the event's detection and continues until become under control (Arslanca, Fidan, Daggez, Dursun, 2021)

The current finding showed that the majority of the studied patients were in age group ($50 \geq 60$) and female, this data was in line with (Ahuja, & et al., 2021) in their study entitled, title " Perceptions of risk for COVID-19 among individuals with chronic diseases and stakeholders in Central Appalachia." In which they mentioned that, the mean age of the survey participants was 54.6 ± 13.9 years old and the majority of the participants were female. These results may be related to effect of aging process on body systems and getting chronic disease. Additionally, women have many responsibilities and exposed to many stressors, women are mothers, housewives, teachers and so on. Obesity among women is more common than in men. All these factors increase risk for chronic diseases among female than men.

Moreover; (Suhanti, Noorizki, & Pambudi, 2020) in their study entitled " Risk Perception of Covid 19, " found that, the age of the participants was mostly seen in the range of 18-25 years old (early adulthood). This finding contradicted with the current study finding. This difference between the results of both researches could be referred to the association between aging process and appearance of chronic diseases especially heart diseases. In this current study, all patients suffered from one or more of chronic diseases.

In the current study, the highest percentage of the studied patients suffered from heart diseases. This may be related to other factors than old age. In this study more than two third of patients were old adult and female, that keep them at risk for chronic disease especially cardiac disease which increased after menopause. From the other hand the effect of aging process on cardiovascular system, in addition to decreased level of activity among female with increased age. This finding contradicted with (Pahlavanyali, Hetlevik, Blinkenberg, & Hunskaar, 2022) in research entitled "Continuity of care for patients with chronic disease: a registry-based observational study from Norway." In which they represented that the smallest percentage of their study group suffered from heart disease while the highest suffered from diabetes. This may be related to factors associated with residency of the studied patients.

The current study finding confirmed that the number of the studied patients who mentioned agree response with "A person with a chronic disease, if infected with the Corona virus, will be exposed to many complications, such as entering the intensive care unit and placing on mechanical ventilators" pre vaccination decreased post vaccination announcement. This means that those patients believed that vaccine provide safety forever and removed the risk of COVID 19 among patients with chronic diseases. These group of patients may leave the precautionary measures on long run. Overall, those patients believed that "when they are vaccinated, they will be safe". Also, these results appraised that more than half of patients agree with " If you receive the vaccination, you leave the precautionary measures and live a normal life" pre/post

vaccination announcement. Also percentage of patients who agree with this statement increased post vaccination announcement. Additionally, the number of the studied patients who were agree with " Keep the precaution measures such as washing hands - wearing a mask – Keep distancing from others" decreased post vaccination. It confirmed that those patients thought "when they are vaccinated, they will be safe" and will return to usual life without following COVID 19 precaution measures. On the other hand, this conformed the strong desire of people to return to their normal lives without any restrictions.

The current results contradict WHO (2022), report in which mentioned, to "keep patients and others safe: Do it all; Protect patients and the surrounded people by getting the vaccine as soon as possible and following local guidance on vaccination, keeping physical distance of at least 1 meter from others, even if those people don't appear to be sick. Avoiding crowds and close contact, wearing a properly fitted mask when physical distancing is not possible or in poorly ventilated settings, cleaning hands frequently with alcohol-based hand rub or soap and water, covering mouth and nose with a bent elbow or tissue in case of coughing or sneezing and disposing of used tissues immediately and cleaning hands regularly".

Finally, the risk perception of the studied patients still high post as pre vaccination announcement. From the researchers' point of view, this may be referred to many factors; as hesitancy, intuitions, beliefs, and refuse of vaccination, long run effect of vaccine, effect of this vaccine on their chronic diseases, and lack of knowledge related to vaccine and its side effect. On the end, patients who are at high-risk for COVID 19 and its complications showed more anxiety and stress than other patients who are not at risk. So, nurse has main role to educate those patients related about COVID 19 vaccine, its effect, efficacy, and side effects, Furthermore, nurse must emphasize the urgent need to maintain precautionary practices and hand hygiene, whether vaccination is done or not.

This result matched with (Domínguez, Jiménez, Eraso, & Vivas, 2020) in study

entitled "Risk Perception of COVID-19 Community Transmission among the Spanish Population" Who reported that " As the data about the number of infections, mortality rate and the saturation states of the hospitals were known by the population through different media, government information, social networks, television, radio, etc. Creating a social alarm that provoked fear among the population and increase risk perception associating with the risk of infection which threaten their health.

Also (Yang, Gong, Sassine, Morsa, Tchogna, Chadi, & Jantchou, 2020) in study entitled "Risk Perception of COVID-19 Infection and Adherence to Preventive Measures among Adolescents and Young Adults." concluded that the study participants had higher mean risk perception about COVID-19 for their relatives than for themselves . Factors associated with higher risk perception included higher level of knowledge about the disease, presence of chronic disease and use of immunosuppressant drugs.

Conclusion:

Based on the finding of the current study; it could be concluded that the highest percentage of studied patients had high risk perception pre-post vaccination announcement. Also results revealed that more than half of the studied patients agree with " If you receive the vaccination, you leave the precautionary measures and live a normal life" pre - post vaccination announcement. Additionally, the number of the studied patients who were agree with " Keep the precaution measures such as washing hands - wearing a mask – keep distancing from others" decreased post vaccination. This result could help the nurse to develop teaching program for those patients related to vaccine effect, efficacy, side effects, and all about COVID 19 vaccine. Furthermore, nurse must emphasize the urgent need to maintain precautionary practices and hand hygiene, whether vaccination is done or not.

Recommendations:

Upon the completion of this study, the following recommendations are suggested:

- Replication of the study on large probability sampling.
- Nurses should develop educational program for those patients related to vaccine effect, efficacy, and side effects of COVID 19 vaccine. Furthermore, nurses must emphasize the urgent need to maintain precautionary practices and hand hygiene, whether vaccination is done or not

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