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The Attitude and willingness towards COVID-19 Vaccine in healthcare workers in Sirte, Libya

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ABSTRACT

Healthcare workers (HCWs) are among the groups that were at the forefront of the Corona epidemic. Many of them became infected and sometimes died. Since they are among the most vulnerable to this epidemic, they were among those targeted for the Covid-19 vaccination. This an observational cross-sectional study aims to evaluate the knowledge and attitudes of health care workers at Ibn Sina Hospital in the city of Sirte regarding vaccination against the Coronavirus, and how demographic, professional, or other factors may be affected by differences in knowledge and attitudes related to acceptance of taking the Coronavirus vaccine. The study was targeted 155 participants (mean age 1.97, male 73 (47.1%), female 82 (52.9%). Those who agreed to take the vaccination were (77) and represented (49.7%). Those who did not agree to take the vaccination and answered no were (58) and represent (37.4%). There were (20) of those who were not interested and were hesitant about taking the vaccination or not, representing (12.9%) of the total number in this study.

1.0 Inroduction

Corona virus (covid-2019) caused epidemic that was first spread in china in 2019. This Covid-19 is a pandemic cause acute respiratory disease. The virus causes morbidity in many millions of people and has taken the lives of many millions since its emergence (Noh J and Danuser G, 2021). COVID-19 affects the respiratory organs with a range of symptoms from rhinorrhea to severe respiratory disease. This virus is generally more critical for the old age people and those with a history of low immunities and noncomunicable diseases.

As other countries, the Libyan authorities have taken high measures recommended by World Health Orgnization to control and prevent the spread of virus, such as minimizing public gatherings, limiting social activities and schools, quarantining measurements in the country and minimizing to closing the airports. (Bedford 2020).

There are many COVID-19 vaccines listed for use by WHO. The first vaccination campaign started in beginning of December 2020. In Libya, the first case of COVID-19 was identified in Libya on march 2020. Months later, the number of reported COVID-19 cases started to increase notably and then spread to whole country (Bredan and Bakoush, 2021).The purpose of this research is to investigate the attitude and awareness among health care workers in Ibn Sina Hospital about COVID-19 vaccine.

2.0 Methods

An observational cross-sectional study was conducted to address the research topic from a scientific perspective by using the questionnaire method as a basic tool for collecting data. The questionnaire design is based on (21) questions to measure attitude, awareness and knowledge about the Covid-19 vaccine

The number of sample was 155 of healthcare workers at Ibn Sina Hospital. The questionnaire was collected during a specific period of time for May 18 to June 15, 2022. The socio-demography characteristics of sample was collected. Factors which have impact on knowledge and awareness to covid-19 vaccine was studied. These factors included, evaluation of precautionary measures, awareness to accept covid-19 Vaccine, awareness role taken by health authorities in the city.

2.1 Statistical analysis

Data were collected and Microsoft Excel used. Statistical significance was calculated. SPSS package used for determine t-test and p-values.

3.0 Results

Regarding the gender of health care workers in this study, the most gender was female counting of 82 (52.9%), while men were 73, representing 47.1%.

Table 1. Distribution of gender in the study

Gender	No. (%)
Male	73 (47.1)
Female	82 (52.9)
Total	155 (100)

In regards of the relation of gender on vaccine acceptance. The comparison between the two gender variables was investigated, a t-test was conducted in the samples population and was 0.990. The *p* value was 0.324, which is less than the confidence level of 0.05, and we assumed no statistically significant between the male and female .So, we can conclude there was no relation or affect between the acceptance of been vaccinated and both genders. The Marital status showed that married people were 86 represented 55.5% while singles were69 represented 44.5%. In regards to family status and its relation vaccine acceptance. The comparison between the two variables was investigated, a t-test was conducted in the samples population and it was 4.66 and *P* value was 0.00. this indicate the significant relation and effect of family status on the individual acceptance of taken corona vaccine.

Table 2. The social status of the sample in the study

Marital status	No. (%)
Married	86 (45.7)
Single	69 (44.5)
Total	155 (100)

The age groups in table 3 showed the majority of age group among health care workers in this study at Ibn Sina Hospital was from (31-41) represent 101 (65.2%), while the age group of (20-30) represent 30 (19.4%). the age group of (42-52) represent 23 (14.8%). Only one (0.6%) represent the age group of more than 52 years old

Table 3. Age groups of the sample in the study

Age groups	No. (%)
30-20	30 (19.4)
41-31	101 (65.2)
52-42	23 (14.8)
More than 52	1 (0.6)
Total	155

	N	Mean	Std. Deviation
Age	155	1.97	0.608

The educational level (in table 4) of those targeted by this study at Ibn Sina Hospital was mostly university, representing 131 (84.5%), while the academic level was 20 (12.9%), and the lowest were those with a basic education level, representing only 4 (2.6%). According to the impact of education level on acceptance of vaccine, a comparison between the two education levels was investigated. For that a t-test was 5.46 and *p* value was 0.00. This conclude the differences of vaccine acceptance was significantly influenced by education levels

Table 4. Educational level of health care workers in the study

Education level	No (%)
Basic	4 (2.6)
University	131 (84.5)
Academic	20 (12.9)
Total	155

The table (5) showed the distribution of occupational in this study. The nurses were represented by the largest percentage 55 (35.5%), followed by doctors, with a percentage of 45 (29.0%). The technicians, with a percentage of 32 (20.6%), and the least were specialists, with a percentage of 21 (13.5%). Only (1) represent (0.6%) for occupational of administrators and pharmacists respectively

Table 5. The occupational of health care workers in the study

Occupational	No. (%)
Administration	1 (0.6)
Specialist	21 (13.5)
Physician	45 (29.0)
Technician	32 (20.6)
Nurse	55 (35.5)
Pharmacist	1 (0.6)
Total	155

Of those who participated in the study (85) representing (54.9%), they answered that the precautionary measures are not expensive for them. While (28) people, representing (18.061%), answered that the precautionary measures are costly to them. The answer was "I don't know" for (42) people, representing (27.09%) as shown in table (6).

Table 6. Evaluation the coast of precautionary measure

Evaluation of precautionary measures	No. (%)
Costly	28 (18.1)
Not costly	85(54.9)
I do not know	42(27.1)
Total	42(27.1)

The Table (7) shows the extent of approval for taking the vaccine among those questioned. Those who agreed to take the vaccination were (77) and represented (49.7%). Those who did not agree to take the vaccination and answered no were (58) and represent (37.4%). There were (20) of those who were not interested and were hesitant about taking the vaccination or not, representing (12.9%) of the total number in this study.

Table 7. Acceptance to take covid-19 Vaccine

Acceptance to take covid-19 vaccine	No. (%)
No	58 (37.4)
Yes	77(49.7)
I do not care	20(12.9)

Of The healthcare workers (Table. 8) who were participating and questioned in this study at Ibn Sina Hospital (58) agreed to take the Russian vaccine (Sputnik) representing (37.4%). Others (35) wanted the American vaccine (Moderna) representing (22.6%). While (23) preferred the united kingdom vaccine (AstraZeneka) representing (14.85%). On the other hand, (23) responded that they do not care about the type of vaccine they take, but rather they care about which vaccine is available for them to take, and they represent (14.85%). The smallest number of participants in this study responded that they agreed to take the Chinese vaccine (Sinopharm), and they were counted as (16) and represented (10.32%).

Table 8. The type of vaccine had preferred to be taken in this study

Vaccine type by country of origin	No. (%)
AstraZeneka- United kindom	23(18.8)
Sinopharm- China	16(10.3)
Sputnik- Russia	58(37.4)
Moderna-USA	35(22.6)
Any which available	23(14.8)
Total	155

To assess the knowledge of the participants in this study in terms of the transmission of the virus, as well as their confidence that vaccination is safe and does not cause corona infection to them. Regarding the question: "Does the vaccine cause coronavirus disease?" Of the total 155 participants, 65 were answered "NO" which represent 41.9%. While 57 (36.8%) of participants answered, "THEY DO NOT KNOW". Only 33 of the participants answered "YES", representing 21.3% of the total study.

Table 9. show those were believed taking Corona vaccines cause the infection virus

The belief that taking Corona vaccines causes infection with the virus	No. (%)
No	65(41.9)
Yes	33(21.3)
I do not know	57(36.8)
Total	155

Regarding knowledge of the relationship between taking the vaccine and fear of infertility (Table 10), they were 59 represent (38.1%) responded that there is "NO" relationship

and they are not afraid of that. Those who answered YES, they believe that the vaccine causes infertility counted 49 (31.6%), and those who answered that "THEY DID NOT KNOW" counted 47 represent (34%) and they did not differ much from those who said they believe that the vaccine causes infertility. There are significant differences statistically in the belief of individuals participating in the study that the Corona vaccine may cause infertility in the long term. Where is the t-test was 6.283 and *p*. value was 0.00.

Table 10. It is believed that vaccines cause long-term infertility

Believe that vaccines cause long-term infertility	No. (%)
No	59(38.1)
Yes	49(31.6)
I do not know	47(30.3)
Total	155

Forty eight (30.9%) of participants intended to not believe that the COVID-19 vaccine causing chronic disease. However, 57 (36.8%) of respondents were intended to believe that the COVID-19 vaccine causing chronic disease. Whereas 50 (32.3%) participants answered (I don't know) as showed in (Table 11).

Table 11. Believe that vaccines cause long-term chronic disease

Believe that vaccines cause long-term chronic diseases	No. (%)
No	48(30.9)
Yes	57(36.8)
I do not know	50(32.3)
Total	155

Regarding the evaluation of the health authorities' management of the Corona epidemic in the city of Sirte shown in table 12. The respond to that varied, and the evaluation was with the word "bad," representing 66 (42.6%) of the total participants. While 41 were satisfied with the measures taken. of total of the participants, 34 (21.9%) responded that they were not satisfied. The small number represented 14 (9%) participants who were very satisfied with the procedures and response of the city authorities in confronting the Corona epidemic.

Table 12. The played by health authorities in Sirte city

Evaluation of the management of epidemic played by health authorities in Sirte city	No. (%)
Very satisfied	14(9.0)
Satisfied	41(26.5)
Not satisfied	34(21.9)
Bad	66(42.6)
Total	155

As recommended by the World Health Organization (WHO), healthcare workers (HCWs) were considered a priority group for COVID-19 vaccination (WHO, 2020).

According to studies conducted in various countries around the world, age, occupational status, educational status, income, perceived risk of COVID-19 infection, attitude, knowledge of COVID-19, being sick with COVID-19, and the presence of chronic disease are the most important predictors of intention to use COVID-19 vaccine (Bhartiya etal., 2021; Lin etal., 2020; Verger etal., 2021).In our study the hesitancy or refuse to take corona vaccine was lower compared with other European countries represent 34%. In other hand COVID-19 vaccine hesitancy among HCWs were mentioned in France (68%) (Mueller etal., 2021) and in 76% in Belgium (Verger etal., 2020). This may related to occupational, age, gender, fear of COVID-19, attitudes and knowledge towards vaccination.

Perhaps the phrase "I don't know" contained in the phrase "I don't know" reflects the belief of (36.8%) of the participants that the Corona vaccine causes infection, as well as the belief of 30.3% of the participants that Corona causes infertility, and also in the answer of 32.3%, That the vaccine causes chronic diseases (Vignier 2021). These may lead to more negative attitudes and distrust of the information received from media, authorities. Such situations generate conspiracy theories with global dominance of industrialized countries

Conclusion

Several variables or factors that effect on confidence and on covid-19 preventative measurement and vaccines. These factors included personal risk perception, attitudes, knowledge and governmental authorities roles are all together strongly matching with personal attitudes and willingness be vaccinated. There are significant barriers or factors had important role in acceptance of vaccine such as family status and the belief of how far the vaccine was safe. One of the important factors was the effect of corona vaccine on personal fertility. Comprehensive educational program to improve trust in scientific information is likely to be productively in education in vaccine acceptances and other preventative measurements.

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