COVID 19 VACCINATION PERCEPTIONS AND UPTAKE AMONG HEALTH PROFESSIONALS IN CROSS RIVER STATE.

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ABSTRACT

The discovery of vaccine against Coronavirus Disease of 2019 (COVID – 19) was considered a breakthrough in the control of SARS-CoV-2 transmission. Health professionals as frontline managers of COVID -19 patients were prioritized for vaccination as they were more at risk of the infection and transmission. However, past experience on vaccine production and knowledge of vaccine may influence their perception and uptake of COVID-19 vaccine due to some misconceptions surrounding its production and effectiveness. The aim of this study was to assess knowledge, perception and uptake of COVID - 19 vaccine among health professionals in Cross River State. A descriptive cross-sectional design was adopted to study a sample of 344 health professionals including nurses, physicians, pharmacists, and laboratory scientists working in University of Calabar Teaching Hospital, Calabar. The participants were selected to complete the survey using stratified random sampling technique. Data was collected through a validated and reliable questionnaire structured by the researchers. Using software from the Statistical Statistical Package for Social Sciences (SPSS version 23) collected data were analysed, while the association between variables was achieved using Chi-square test of association at a 0.05 level of significance. The study revealed that majority 256 (74.4%) of the participants had good knowledge of COVID-19 vaccine, while majority 214 (62.2%) had good perception of Covid-19 vaccine, and slightly above half, 196 (57.0%) of the participants had been vaccinated against COVID-19. There is a significant association between; knowledge and uptake of Covid-19 vaccine (Cal χ^2= 42.563; p=.000), as well as perception and uptake of COVID-19 vaccine (Cal χ^2= 28.204; p=.000) among the participants. The demographic variables significantly associated with uptake of COVID-19 vaccines were; age, marital status, religion, ethnicity, profession, income per month, and years of work experience (p<0.05). However, the proportion of the healthcare professionals in the hospital that have not been vaccinated was relatively high and the associated variables with uptake of the vaccine emphasize the need for intervention that would address the unique concern of each group within the healthcare professionals.

INTRODUCTION

COVID-19, identified as a worldwide health crisis, has had far-reaching consequences, leading to significant social, economic, and political disruptions (Nigeria Center of Disease Control (WHO), 2021). The novel strain of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first appeared in Wuhan Province, China, and swiftly spread across the globe.

Within a short period, the virus crossed international borders, impacting countries and communities in an unprecedented manner. By March 2020, the World Health Organization (WHO) recognized the gravity of the situation and declared the COVID-19 outbreak a global pandemic (NCDC, 2021). This announcement marked the beginning of a prolonged battle against the virus, with governments and health authorities striving to limit the spread and consequences of the disease.

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The COVID-19 infection is a highly contagious disease which is commonly transmitted via respiratory droplets while talking, coughing or sneezing by infected persons, indeed, the COVID-19 disease transmission have been reported between human and several animal species such as bats, cats, cattle and camels (Center for Disease Control (CDC), 2020). WHO (2020) added that direct or indirect contact with infected persons or contaminated surfaces has the potential to facilitate transmission of the virus.

Globally, over 565 million confirmed cases of COVID-19 infection with over 6 million deaths were reported in 2021 (NCDC, 2021). About 2 million confirmed cases were reported in Africa (Beaumont, 2020). Globally, two hundred and thirty nurses were infected and 600 lost their lives, while over 214,000 positive cases with more than 2000 deaths were reported in Nigeria (NCDC, 2021; Beaumont 2020). As the pandemic evolved, researchers raced against time to develop vaccines and therapies to protect populations from the deadly virus. Meanwhile, public health measures, such as social distancing, mask-wearing, and lockdowns, were implemented worldwide to curb transmission rates. The pandemic has challenged the resilience of healthcare systems, tested the adaptability of societies, and demonstrated the interconnected nature of our world.

Although the use of personal protective equipment (PPE), physical distancing, restriction, minimization of hand to face, respiratory and hand hygiene are viewed as main stay of infection control, the compliance by the populace and availability of PPE were not drastic enough to contain the spread of the COVID-19 infection (WHO, 2020). The increased morbidity and mortality rate occasioned by the COVID-19 infection necessitated the recommendation of COVID-19 vaccine by WHO to boost individual resistance (WHO, 2021). The vaccine, comirnaty COVID-19 mRNA was first introduced by Pfizer in December, 2020. This is particularly indicated for health professionals who are front line workers and are high at risk of exposure and transmission of the virus. According to the Advisory Committee on Immunization Practices (ACIP) recommendations, health workers are among the first group of individuals to receive the COVID-19 vaccine for their protection due to constant interactions with infected patients and exposure to contaminated surfaces (Olu–Abiodun et al., 2022).

Clem (2011) claims that the COVID-19 vaccination works by stimulating the immune system to increase its own immunity against the virus. The vaccine works by stimulating the generation of memory cells, which then trains the immune system to swiftly create antibodies in response to future infections. Vaccination against COVID-19 has the potential to put a stop to the pandemic and restore communities to their condition before the outbreak (Watson et al., 2022; Beaumont, 2022). However, there were reports of some delivery challenges due to the significant road block such as vaccine acceptance by the populace including health care workers (WHO, 2019).

Olu-Abiodun et al. (2022); Enitan et al. (2020) reported that vaccine acceptance among health workers in Nigeria is as low as 32.5%, at the current rate it is unlikely that by the end of 2022, Nigeria should have vaccinated its population to a level of 70% that would prevent the spread of COVID-19 (Irwin & Nkengasong, 2021). Several studies have identified factors influencing refusal and non-acceptance of COVID-19 vaccine to include mistrust of vaccine safety due to ubiquity of negative and false information on vaccine as well as political and religious saga in the internet (Oyira et al., 2020; Johnson et al., 2020). Others include limited information on different vaccine technology, development and side effects such as myocarditis, pericarditis, thrombosis and Guillain-Barre syndrome (Diaz et al., 2021).

According to Abdulwahab et al. (2021) acceptance and uptake of vaccine are particularly influenced by perception of safety and effectiveness, perception of the disease risk, awareness of social norms, myths and misconceptions. Several studies have linked knowledge of COVID -19 vaccine to uptake of the vaccine by health workers based on their past experiences and beliefs (Oppenheim et al., 2019; WHO, 2020). The low acceptance rate of COVID-19 vaccine among health workers may convey sense of unsafety, insecurity and delays prompt healthcare delivery to patients, heightened risk of infection transmission, thus endangering the lives of patients and medical staff. Recent research has shown that health professionals are under increasing amounts of pressure to fulfill their advising function and instill the public's trust in vaccinations (Malik et al. 2021). However, empirical evidence on knowledge, perception and uptake of Covid-19 vaccine among health professionals are limited in Cross River State (Oyira et at., 2020). This study was conducted to fill this gap.

MATERIALS AND METHODS
Study Setting
The University of Calabar Teaching Hospital (UCTH) is situated in Calabar Municipal Council, Cross River State, in Nigeria's South South Geopolitical Zone. UCTH is a tertiary care facilities that also functions as a referral center for primary and secondary care institutions (Osuchukwu, Yellow-Duke, Eko, & Nwachukwu (2019). Additionally, it plays a vital role as a national and international centre for medical study and education. The hospital compartmentalized into 48 departments/ units with a staff strength of 2946 of which 1432 are health professionals. The site was chosen because it serves as COVID -19 referral center with facilities and human resources for isolation and treatment of COVID -19 patients.

Study Design

A cross-sectional, descriptive design was used for this investigation. This design was found appropriate as it draws sample as it occurs in its natural setting. The sample size for the study was 344 respondents who were drawn proportionately from the 1432 health professional who were made up of Nurses, Physicians, Laboratory Scientist and Pharmacists using stratified simple random sampling technique. Respondents provided written agreement after being guaranteed of their privacy, the study's anonymity, and the study's emphasis on voluntary participation. The Cross River State Ministry of Health Research Ethics Committee also gave approval for the study with registration number: REC NO.CRSMOH/HRP/HREC/2022.

Research Instrument

Researchers' structured questionnaire was used to assess knowledge, perception and uptake of COVID–19 vaccines among the participants. The questionnaire faced validation by experts in the field. A test- retest approach was adopted to establish the reliability of the instrument. Data obtained were analyzed using Pearson Product Moment Correlation coefficient which revealed 0.81 indicating that the instrument was reliable and appropriate for the study. The questionnaire consisted of 31 items divided into 4 sections. Section A was on demographic variables including information on gender, age, marital status, and professional qualifications. Section B, C and D elicited data on knowledge, perception and uptake of covid-19 vaccine respectively from the participants.

Data Analysis

Software from the Statistical Package for Social Sciences (SPSS version 23) was used to analyse the collected and coded data. Descriptive statistics which included mean, percentage and frequency tables and charts were used to analyze demographic variables. The study also used chi-square to test for association between categorical variables at 0.05 level of significance. Each of the variables of the study was summarized into two categories based on the aggregate scores of the respondents. Knowledge and perception of COVID–19 were graded as good knowledge/perception for a score of 50% and above and poor knowledge/perception for a score less than 50%.

RESULT

Table 1: Socio-demographic characteristics of Participants (n = 344)

Variable	Frequency	%
Gender:		
Male	146	42.4
Female	198	57.6
Age:		
Less than 20 years	-	0.0
20 – 29 years	85	24.7
30 – 39 years	109	31.7
40 – 49 years	88	25.6
50 years & above	62	18.0
Marital status:		
Single	110	32.0
Married	172	50
Divorced	19	5.5
Separated	33	9.6
Widowed	10	2.9
Religion:		
Christianity	292	84.9
Islam	13	3.8
Others	39	11.3
Ethnicity		
Igbo	76	22.1
Hausa	21	6.1
Yoruba	40	11.2
Non-Nigerian	3	0.9
Others	204	59.3
Educational status		
B.Sc/MBBCH/HND	307	89.2
M.Sc.	27	7.8
Ph.D.	10	2.9
Profession:		
Nurses	165	48.0
Physician	54	15.7
Laboratory Scientists	76	22.1
Pharmacist	49	14.2
Income per month (₦):		
< 30,000	-	0.0
31,000 – 100,000	80	23.3
>100,000	264	76.7
Work experience		
<6 years	78	22.7
6 – 10 years	171	49.7
11 – 20 years	60	17.4
> 20 years	35	10.2

Table 1 shows that slightly more than half 198 (57.6%) of participants were female; a higher proportion 109 (31.7%) were between 30-39 years of age. Half 172 (50%) of the participants were married while majority 292 (84.9%) were of the Christian faith. More than half 204 (59.3%) were of other ethnic group of which a greater part 92 (26.7%) were the Ibibios; Majority 307 (89.2%) of the participants had B.Sc/MBBCH/HND as their highest academic qualifications, a higher percentage 76.7% of the participants earns more than ₦100,000.00 as their monthly salary, and a greater proportion 171 (49.7%) of the respondents had 6-10 years of clinical experience prior to the study.

Table 2: Knowledge of COVID-19 among the Participants (n = 344)

S/No	Variable	F	%
1.	COVID-19 vaccine provides immunity against SARS-CoV2.		
	Yes	288	83.7
	No	56	17.3
2.	First COVID-19 vaccines produced in Nigeria is		
	Pfizer-BioNTech		
	Moderna	20	5.8
	Oxford-AstraZeneca	20	5.8
	Mosquirix15	289	84.0
		15	4.0
3.	COVID–19 stimulates the human body's own protective immune to SARS-CoV2		
	Yes	259	75.3
	No	85	24.7
4.	COVID-19 vaccine have some side effects.		
	Yes		
	No	283	82,2
		61	17.7
5.	Most common side effects of COVID -19 vaccine is:		
	Fatigue	20	5.8
	Headache	291	84.6
	Muscle pain	33	9.6
	Inflammation at the injection site	0	0.0
6.	It is required to follow a standard precaution even after being vaccinated.		
	Yes	344	100
	No	0	0.0
7.	Does COVID-19 convey active or passive immunity?		
	Active immunity	344	100
	Passive immunity	0	0
.8.	After COVID-19 infection, the victim still need to get vaccinated		
	Yes	267	77.6
	No	77	22.4
9.	Does COVID-19 vaccine worsen underlying health condition?		
	Yes	305	88.7
	No	39	11.3

Table 2 shows the knowledge items regarding COVID–19 vaccine with the mean score of14.25 (SD1.79). Two – third (83.7%) of the participants knew that COVID-19 vaccine can provide immunity against SARS-COV2. About 289 (84%) were aware of first COVID-19 vaccine produced in Nigeria. Three - quarter (75.3%) knew the vaccine stimulates immune response. Higher number of participants 283 (82.2%) knew about side effects of the vaccine. A higher percentage (84.6%) identified headache as most common side effect. All 344(100%) confirmed that observation of standard precaution is still vital even after vaccination. All the participants 344 (100%) knew the vaccine conveys active immunity, Majority 267 (77) participants knew that even after exposure to the virus the individual still needs to be vaccinated. Majority 305 (88.7%) claimed the vaccine does not worsen underlying health conditions.

Table 3: Perception of Participants towards COVID-19 vaccine (n = 344)

S/No	Variable	Agree (%)	Disagree (%)
1.	I believe COVID-19 vaccines are effective against the virus.	245 (71.3%)	99 (28.7%)
2.	COVID-19 vaccines available are safe.	228 (66.2%)	116 (33.8)
3.	I trust the science behind the safety development of COVID-19 vaccine.	231 (67.1%)	113 (32.9%)
4.	The government should make COVID-19 vaccine available and affordable to all.	276 (80.3%)	68 (19.7%)
5.	COVID-19 vaccine intake should be made mandatory to all health workers.	228 (66.3%)	116 (33.7%)
6.	COVID-19 vaccine is effective against the virus.	238 (69.2%)	106 (30.8%)
7.	There is still need to be vaccinated after COVID-19 infection.	56 (16.3%)	288 (83.7%)
8.	COVID-19 vaccine developed in Europe and America are safer than the vaccine developed in Nigeria	197 (57.3%)	147 (42.7%)
9.	COVID-19 vaccine vaccines developed in Europe and America are more effective than Nigerian made vaccines	253 (73.6%)	91 (26.4%)
10.	The short period of COVID-19 vaccine development is worrisome.	197 (57.2%)	147 (42.8%)
11.	I do not believe in the existence of COVID-19 vaccine.	56 (16.3%)	288 (83.7%)
12.	I am afraid of the likely side effects of COVID-19 vaccine.	186 (54.1%)	158 (45.9%)

Table 3 illustrates perception of COVID-19 among health professional with a mean score of 41.82 (4.22). More than 71.3% of the participants perceived the effectiveness of COVID -19 vaccine, over 66.2% of the participants had correct perception of safety of the vaccine. Greater proportion 231 (67.1%) trusted the science behind the safety development of the vaccine, majority 276 (80.3%) of participants believed that government should make COVID -19 vaccine available and affordable to all. Greater proportion 228 (66.3%) believed COVID -19 vaccine should be made mandatory to all health workers, over two – third (83.7%) felt that vaccination is irrelevant after recovery from COVID -19 infection, slightly more than half (57.3%) believed that COVID -19 vaccine developed in Europe and America are safer than the vaccinated developed in Nigeria. Majority 197 (57.2%) of participants raised concern about the short period of COVID-19 vaccine production, 288 (83.7%) believed in the existence of COVID-19 infection.

Table 4: Uptake of COVID-19 vaccine among the Participants (n = 344)

S/No	Variable	F	%
1.	Have you been vaccinated against COVID-19?		
	Yes		
	No	196	57
		148	48
2.	If **NO** to question 1 above WHY?		
	a. Do not trust the science and production process	50	34
	b. Not readily available	98	66.2
3.	Will you take COVID-19 vaccine in near future?		
	Yes	130	87.8
	No	18	12.2
4.	Should COVID-19 vaccine be made mandatory to all health professional		
	Yes	342	99.4
	No	2	0.6
5.	Will you recommend COVID-19 vaccine to others?		
	Yes	228	66.3
	No	116	33.7

Table 4 shows that only 57% of the participants had been vaccinated. A greater number 98 (66.2%) of the unvaccinated respondents claimed unavailability of the vaccine. Majority 130(87.8%) of the participants hope to take the vaccine in near the future. A higher percentage (66.3%) accepted that they will recommend the vaccine to others.

Table 5: Contingency Chi-square analysis showing the association between knowledge and uptake of COVID-19 vaccine among the Participants (n = 344)

Knowledge	Uptake of COVID -19 vaccine		Row total	df	Cal χ^2	p-value
	Vaccinated	**Unvaccinated**				
Good	172 (50.0)	84 (24.4)	**256 (74.4)**			
Poor	24 (7.0)	64 (18.6)	**88 (25.6)**	1	42.563	.000*
Column total	**196 (57.0)**	**148 (43.0)**	**344 (100)**			

*p<0.05

Table 6: Contingency Chi-square analysis showing the association between perception and uptake of COVID -19 vaccine among the Participants (n = 344)

Perception	Uptake of COVID -19 vaccine		Row total	df	Cal χ^2	p-value
	Vaccinated	**Unvaccinated**				
Good	180 (52.3)	34 (9.9)	**214 (62.2)**			
Poor	16 (4.6)	114 (33.1)	**130 (37.8)**	1	170.099	.000*
Column total	**196 (57.0)**	**148 (43.0)**	**344 (100)**			

*p<0.05

Table7: Contingency Chi-square analysis showing the association between the Participants s' demographic characteristics and acceptance of COVID -19 vaccine (n = 344)

Demographic characteristics	Uptake of COVID-19 vaccine			χ^2	P-value
	Vaccinated	Unvaccinated	Row Total		
Gender:					
Male	81 (23.6)	65 (18.9)	146 (42.4)		
Female	115 (33.4)	83 (24.1)	198 (57.6)	0.232	0.630
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Age					
Less than 20 years	0 (0.0)	0 (0.0)	0 (0.0)		
20 – 29 years	30 (8.7)	55 (16.0)	85 (24.7)		
30 – 39 years	68 (19.8)	41 (11.9)	109 (31.7)	22.573	0.000*
40 – 49 years	55 (16.0)	33 (9.6)	88 (25.6)		
50 years & above	43 (12.5)	19 (5.5)	62 (18.0)		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Marital status					
Single	68 (19.8)	42 (12.2)	110 (32.0)		
Married	99 (28.8)	73 (21.2)	172 (50.0)		
Divorced	10 (2.9)	9 (2.6)	19 (5.5)	10.304	0.036*
Separated	18 (5.2)	15 (4.4)	33 (9.6)		
Widow	1 (0.3)	9 (2.6)	10 (2.9)		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Religion					
Christianity	178 (51.7)	114 (33.1)	292 (84.9)		
Islam	5 (1.5)	8 (2.3)	13 (3.8)	12.601	0.002*
Others	13 (3.8)	26 (7.6)	39 (11.3)		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Ethnicity					
Igbo	40 (11.6)	36 (10.5)	76 (22.1)		
Hausa	6 (1.7)	15 (4.3)	21 (6.1)	12.236	0.016
Yoruba	20 (5.8)	20 (5.8)	40 (11.6)		
Non-Nigerian	1 (0.3)	2 (0.6)	3 (0.9)		
Others	129 (37.5)	75 (21.8)	204 (59.3)		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Educational status					
B.Sc./MBBCH/HND	174 (50.6)	133 (38.7)	307 (89.2)		
M.Sc.	16 (4.7)	11 (3.2)	27 (7.8)	0.106	0.948
Ph.D.	6 (1.7)	4 (1.2)	10 (3.0)		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Profession					
Nurse	109 (31.7)	56 (16.3)	165 (48.0)		
Physician	35 (10.2)	19 (5.5)	54 (15.7)		
Laboratory Scientist	41 (11.9)	35 (10.2)	76 (22.1)	31.023	0.000*
Pharmacists	11 (3.2)	38 (11.0)	49 (14.2)		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		
Income per month (₦)					
≤30,000					
31,000 – 100,000	0 (0.0)	0 (0.0)	0 (0.0)		
>100,000	35 (10.2)	45 (13.1)	80 (23.3)		
Column Total	161 (46.8)	103 (29.9)	264 (76.7)	7.440	0.006*
	196 (57.0)	**148 (43.0)**	**344 (100)**		
Work experience					
< 5 years	22 (6.4)	56 (16.3)	78 (22.7)		
6 – 10 years	114 (33.1)	57 (16.6)	171 (49.7)		
11 – 20 years	38 (11.0)	22 (6.4)	60 (17.4)	34.373	0.000*
> 20 years	22 (6.4)	13 (3.8)	35 (10.2		
Column Total	**196 (57.0)**	**148 (43.0)**	**344 (100)**		

*p<0.05

Table 5 presents a summary of the statistical relationship between knowledge and uptake of COVID-19 vaccine among the participants. The results revealed a significant relationship between knowledge and uptake of COVID-19 vaccine (χ^2 = 42.563, p=.000) among the participants. Similarly, results presented in Table 6 revealed a significant relationship between the participants' perception towards COVID -19 vaccine and uptake of COVID -19 vaccine (χ^2 = 170.099, p=.000). Table 7 summarized the Chi-square test results showing the statistical association between the participants' demographic characteristics and uptake of Covid-19 vaccine. Among the participants' characteristics tested, uptake of Covid-19 vaccine was significantly associated with; age (χ^2=22.573, p=.000), marital status (χ^2 = 10.304, p=.036), religion (χ^2 = 12.601, p=.002), ethnicity (χ^2 = 12.236, p=0.016), profession (χ^2 = 31.023, p=.000), per monthly income (χ^2 = 7.440, p=.006) and years of work experience (χ^2=34.373, p=.000).

DISCUSSION

Covid-19 vaccine has been identified as the ideal solution to combat the Covid-19 infection even as new strains of the virus keep emerging. In Nigeria, the vaccination programme has released positive results and identified as an effective means to control the virus. However, there is hesitancy among the health workers regarding the Covid-19 vaccination. Vaccine uptake by health professional has the potential to improve vaccination among the general population as they are considered as role model in the communities. Moreover, substantial population vaccination can achieve herd immunity.

This study examined knowledge, perception and uptake of covid – 19 vaccine among health professionals in Cross River State. Slightly, more than half of the participants were female and about one – third were between 30 – 39years of age. Majority of the participants were professional nurses, followed by Laboratory scientists. Knowledge about effectiveness of covid – 19 vaccine, the first covid – 19 vaccine produced in Nigeria, action of the vaccine by stimulating body's immune response to convey immunity against the virus were adequate with correct response. This is similar to a report from western india where Dara et al (2021) reported an excellent knowledge of Covid-19 vaccine among health professionals The high mean knowledge was attributed in many instances to the continuous professional developments in areas of infectious diseases, control and pharmacotherapy among health professionals (Nega et al; 2021). However, the finding is inconsistent to studies conducted in Bangladesh which reported low knowledge among health care workers.

Findings from the study also revealed that the respondents perceived positively the effectiveness of Covid-19 vaccine. This may be related to their previous experience with use of vaccine in the control of infectious diseases in the past such as polio, BCG, measles vaccine. This finding was in agreement with Adane et al (2022) who reported positive perception of Covid-19 vaccine among health workers. More than two –third of the respondents believed that Covid-19 vaccine was irrelevant once recovered from Covid-19 infection. This perception might be connected to the science and development of active immunity after exposure to a particular infection in the past. Slightly more than half believed that the vaccine could have serious side effect. This finding is similar to Islam et al 2021 who reported similar findings in their study. This misleading information could be attributed to unguided media information. The study also reported that majority received Covid-19 jabs and almost all the respondents accepted that the vaccine should be made mandatory to all health professionals. This may be connected with the effort to promote and encourage large population vaccination, reduce incidence of infection and mortality. This finding is in accordance with Oluwatosin, Olumide & Okafor (2022) who also had similar report in their study.

Interestingly, knowledge and perception were significantly associated with uptake of covid – 19 vaccine. We also found significant associated with gender, age, years of work experience, type of profession, educational level and marital status. This finding is consistent with studies on acceptance of Covid-19 vaccine conducted in Ethiopia which indicated higher level of acceptance of Covid-19 vaccine among males, older in age and physicians (Yilma et al., 2022; Qattan et al., 2021). This finding are possible due to experience acquired over the years, previous positive experience from vaccination and trusted evidenced vaccine information as has been seen over the years against infectious diseases.

CONCLUSION

The study revealed good knowledge, positive perception and high level of uptake of Covid-19 among Health care workers. However, the proportion of participants who were not vaccinated was relatively high and the percentage of participants who felt vaccination is irrelevant for post infected patients showed the knowledge gap in the current scientific evidence regarding covid – 19 vaccine. Thus, the need for an effective strategy to address these misconceptions through seminars and conferences to address the current scientific evidence regarding Covid-19 vaccine and effectiveness.

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