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Public Knowledge, Attitude And Acceptability of COVID-19 Vaccine among Traders in Wuse Market Abuja: A Cross-Sectional Study

Tensaba Andes Akafa[1], Gloria Omonefe Oladele[2], Kingsley Iyoko Iseko[3], Vika Tensaba Akafa[4], Izam Emmanuel David[5], Oche Williams Ujah[6], Tongle Nanle John[7], Chakfa Nanmar[8], Lawal Danjuma Tyem[9], Isaac John Umaru[10]

[1,4,5,7,8,9,10]Federal University Wukari, Taraba State, Nigeria

[2]Federal Medical Centre, Bida, Nigeria; [3]Limi Hospital Abuja, Nigeria

[6]Bingham University Karu. Nasarawa State, Nigeria

akafatensaba@gmail.com

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Abstract

The effect of the COVID-19 pandemic on public health has been unpleasant. Vaccination is a critical measure to decrease COVID-19 economic loss and public health burden. This is very helpful to control the COVID-19 pandemic. The process of halting COVID-19 solely depends on population uptake of the vaccination process and the adoption of non-pharmacological measures. This in turn relies on the public willingness to get vaccinated. The public acceptability of this vaccination is further determined by the level of knowledge and trust in currently available COVID-19 vaccines. Therefore, this paper aims to discuss the findings of public knowledge, attitude, and acceptability of COVID-19 vaccines among traders in Wuse Market Abuja. A cross-sectional study was conducted among different traders in the Abuja Wuse Market to assess their knowledge, attitude and level of acceptability toward COVID-19 vaccinations using a self-administered survey questionnaire with the following four sections; socio-demographic characteristics, knowledge assessment questions, attitude assessment, and acceptability questions. A total

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of 166 participants completed the questionnaire. The knowledge of the COVID-19 vaccinations among the study participants was high with 143(86%) respondents stating that they knew about COVID-19 vaccinations. Among the traders that participated, 74(44.36%) believed that vaccines are safe and 109 (66.02%) agreed that vaccines are critical to protect the public from COVID-19 infection. But only, 45 (27.4%) accept to receive the vaccine. Participants' attitudes, knowledge, and level of acceptability were significantly affected by age, gender, education level, and marital status (P <0.001). Our findings suggest that there is good knowledge and attitude toward the vaccination process against COVID-19 among study participants in spite of low acceptability. Awareness campaigns are therefore necessary to disseminate reliable knowledge about COVID-19 vaccines and demystify the COVID-19 conspiracy theory in order to raise the level of vaccination acceptance.

Keywords: COVID-19, Pandemic, Vaccine, Knowledge, Acceptability

INTRODUCTION

The coronavirus pandemic whose etiology is due to the new Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), overwhelmed the world's social systems since the first case was reported in Wuhan, Hubei China in 2019 according to World Health Organization (WHO). The WHO officially announced the SARS-CoV-2 epidemic as an international public health emergency of concern in January 30, 2020 before the declaration of global pandemic on March 11, 2020. The virus has since then spread around the world as a great tragedy. Therefore, many countries were told to adopt non-pharmacological approaches like strict social distancing and quarantine measures to reduce the mortality and morbidity magnitude, WHO (2019).

According to the latest global coronavirus daily updates tracker as of May 5, 2023; 687,363,950 cases were confirmed and **659,851,033 people have** recovered while **6,867,750** deaths have been recorded. This preventable death toll is really alarming.

Henceforth, vaccines are considered as the most promising tool for the effective fight against the pandemic. Over four vaccines against COVID-19 had been authorized by regulatory body around the world since 2021. However, the acceptability of the vaccine has varied with place, time and contextual human behavior. Notwithstanding, vaccination programs, in general, have been received with doubts and subjects of false beliefs leading to low acceptability among many communities, Al-Mohaithef & Padhi (2020).

For example, the reasons for the low vaccination rates even if provided free of costs are multifaceted and include misperceptions and erroneous interpretations of the efficacy and safety of the vaccine, and the perceived threat its poses to health. A set of these factors affected the current COVID-19 vaccination uptake in many climes therefore constituting the controversy or conspiracy theory, Biswas etal (2021).

Nigeria adopted the COVID-19 vaccination program on March 2, 2021. Since then, other COVID-19 vaccines have been authorized to prevent COVID-19 transmission in the country. Still, people have concerns about the safety profile of these vaccines, including side-effects and the appropriateness of COVID-19 vaccination. Regrettably, to the best of our knowledge, there are limited studies to assess the public acceptability of COVID-19 vaccination, Ojewale & Mukumbang (2023) despite the available evidence of the vaccines saving over 19 million lives across 185 countries thereby reducing global deaths from COVID-19 by 63% Watson & Barnsley (2022).

It is our hope that the discoveries from this survey will inform interventions aimed at improving COVID-19 vaccine uptake in Nigeria and fill important gaps in public health literature on this area of research. Hence, this survey appraised the acceptability of the COVID-19 vaccine among the traders in Wuse Market Abuja in order to prevent the impact of the widespread of the virus in the community.

Several studies have shown that the knowledge about COVID-19 vaccines varies widely among different populations. A study conducted in Saudi Arabia found that 57.7% of participants had a good knowledge level about COVID-19 vaccines (Al-Mohaithef & Padhi, 2021). Another study conducted in China found that the level of vaccine knowledge among healthcare workers was significantly higher than among the general population (Wang et al., 2021). Attitudes towards COVID-19 vaccines also vary among different populations.

A study done in Nigeria found that 62.5% of participants were willing to take the vaccine, while 18.2% were undecided, and 19.3% were unwilling, Olagoke et al. (2021). A study conducted in March 2021 among healthcare workers in Nigeria showed that 79.2% of the participants were willing to take the vaccine. Factors that influenced vaccine acceptance included trust in the vaccine's safety and efficacy, previous experience with vaccination, and encouragement from colleagues and superiors. These findings indicate that attitudes

towards COVID-19 vaccines are influenced by various socio-demographic factors and highlight the importance of targeted communication strategies.

Lazarus et al. (2021) conducted a global survey to assess the potential acceptance of a COVID-19 vaccine. Their study found that 71.5% of respondents were willing to get vaccinated. The study also identified vaccine hesitancy as a major barrier to vaccine uptake.

These findings suggest that the acceptability of COVID-19 vaccines is influenced by various socio-demographic factors, such as age, education, income, and occupation.

Another study conducted among university students in Nigeria in April 2021 found that only 32.3% of the participants were willing to take the vaccine. The main reasons cited for vaccine hesitancy included concerns about vaccine safety and efficacy, mistrust of the government and pharmaceutical companies, and religious beliefs.

Also, a study conducted in May 2021 among healthcare workers in Nigeria found that 75.3% of the participants were willing to take the vaccine. Factors that influenced vaccine acceptance included trust in the vaccine's safety and efficacy, previous experience with vaccination, and the desire to protect oneself and others from COVID-19.

In May 2021 a survey among residents of Lagos State, Nigeria, showed that 68.4% of the participants were willing to take the vaccine. Factors that influenced vaccine acceptance included trust in the vaccine's safety and efficacy, previous experience with vaccination, and the desire to protect oneself and others from COVID-19.

So far, the studies done shows that the knowledge and acceptability of COVID-19 vaccine varied across different locations, certain factors like socioeconomic status, concerns over safety of the vaccines as some governments had to sign an indemnity to absolve themselves of any harm that could come to those who took the vaccines and religious beliefs played roles.

Our study examined public knowledge, attitude and acceptability of COVID-19 vaccine to add credence to these body of knowledge already in the scientfic space.

MATERIALS AND METHODS

Aim & Objectives:

To assess the knowledge, attitude and acceptability of COVID-19 vaccine among traders in Wuse Market Abuja through cross sectional method in order to raise the level of the vaccine acceptance in the public.

Objectives:

1. To determine the sociodemographic factors that affect vaccination acceptance
2. To evaluate the knowledge and attitude of the respondents
3. To determine the level of acceptance of the Covid-19 vaccine

This study was conducted through a cross-sectional survey tool to assess the knowledge, attitude, and acceptability of COVID- 19 vaccines among different traders in Wuse Market Abuja. This survey data collection tool has been validated by other similar study in our climes. Traders aged > 18 years were included, while respondents age ≤ 18 years old or those who did not complete the questionnaire or refused to participate were excluded.

We used a convenient sampling technique to obtain our data due to time constraints. All collected data were entered and stored confidentially on our desktop. IBM's Statistical Package for Social Sciences SPSS version 26 was used to analyze the data. Descriptive analysis was used to describe sociodemographic characteristics and other parameters in the questionnaire. P-values of less than 0.05 were considered statistically significant.

Ethical consideration: This survey complied with the Declaration of Helsinki on conducting research among human subjects. The application was made to a Health Institution Research Ethics Committee. Consent was also obtained from the leadership of the Wuse Market Traders Union to conduct research on their members.

RESULTS

Socio-demographic factors

A total of 166 responses were analyzed from different categories of traders, most of the participants 71(42.8%) were aged 30-39 while 56 (34 %) of were 40-49 years and 27 (16.5%) were in 20-29 age group. 105(63.3%) of the respondents were female and 61(36.6%) were male. The majority of participants were married 137 (82.1%) and others were not. Those with a higher education degree (diploma or higher) were 123 (79.6%) and

the rest had lower education. 119 (72.0 %) were into retail trading while 47 (28.0%) were into wholesale trading. Refer to Table I below for further details.

Table 1: Socio-demographic Characteristics of the Study participants n=166

Variables	Frequency	Percentage
Age (years)		
20 – 29	27	16.3
30 – 39	71	42.8
40 – 49	56	33.7
50 – 59	10	6.0
60+	2	1.2
Gender		
Male	105	63.3
Female	61	36.7
Marital status		
Single	20	12.0
Married	137	82.6
Divorced separated widowed	9	5.4
Educational status		
Primary	20	12.0
Secondary	23	13.9
Diploma	53	31.9
University degree	70	42.2

Knowledge of COVID-19 infections and vaccinations

It was observed that most of the respondents,161 (97%) were aware of the COVID-19 infections. The composite measure of knowledge about COVID-19 vaccination and the infections demonstrated in figure I below showed that 116 (69.9%) of the traders had correct knowledge of the COVID-19 situations. Twenty-seven respondents (16.3%) indicated that they had become ill due to COVID-19 infection. While,156 (94.3%) of the participants reported knowing someone who contracted COVID-19 disease.

In addition, the knowledge of the COVID-19 vaccinations among the study participants was high with 143 (86%) participants stating that they knew about the COVID-19

vaccinations and 162 (97.8%) were aware of the COVID-19 vaccine reinforcement plans in Nigeria.

Table 2: Knowledge of Covid-19 vaccination among the study participants

Questions on Knowledge	Frequency	Percentage
Is COVID-19 a serious disease?		
Yes	161	97.0
No	5	3.0
Do you know that COVID-19 can result in complications?		
Yes	158	95.2
No	8	4.8
Are you aware of vaccines that can effectively prevent COVID-19?		
Yes	143	86.1
No	23	13.9
Can COVID-19 be acquired after full vaccination?		
Yes	105	63.3
No	61	36.7
Do you know where you can get a COVID-19 vaccinations?		
Yes	100	60.2
No	66	39.8
Do you think COVID-19 vaccines have side effects that may affect your refusal for the uptake?		
Yes	120	72.3
No	46	27.7
Have you ever been infected with COVID-19 disease?		
Yes	27	16.3
No	139	83.7
Knowledge of traders about the mode of transmission of COVID-19 (multiple responses possible)		
Poor hygiene	97	58.4
Inhalation of the virus	26	15.7
Touching contaminated surfaces, eyes, nose or mouth	13	7.8
Shaking hands, hugging, and kissing	30	18.1
Composite measure of knowledge about COVID-19 vaccination		
Correct	116	69.9
Incorrect	50	30.1

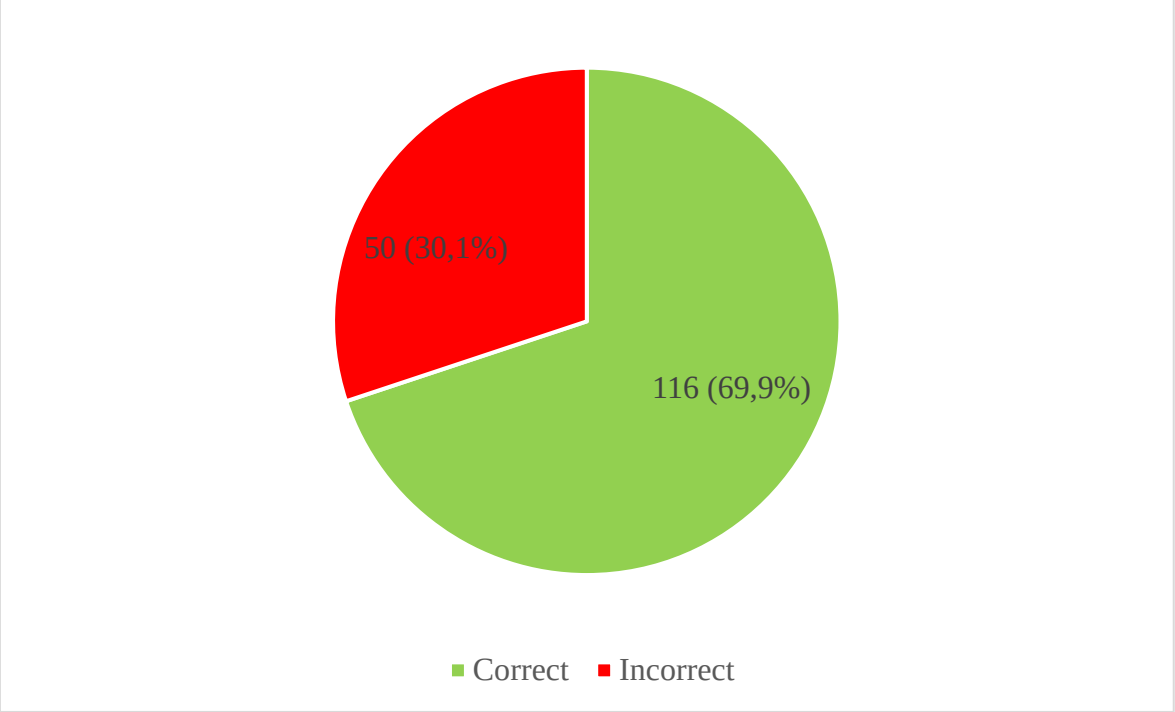


Figure I: Knowledge of COVID-19 Vaccination among the Respondents

The attitudes of respondents varied with various government social interventions as demonstrated in Table 3 below. Ninety-five (57.2%) respondents expressed doubts on the COVID-19 vaccine safety while others did not. The risk perception among the study respondents was high, 133 (80.1%) indicated that they were at risk of contracting COVID-19 infection post vaccination. The composite measure of attitude and perception of Covid-19 vaccination demonstrated on figure II showed a high positive response rate of 63.3%.

One hundred and sixteen (69.9%) of the participants reported that they trusted the government on planning and strengthening the COVID-19 vaccination program. In addition, 125 (75.3%) of participants agreed that the government can provide transparent information on COVID-19 vaccine to enhance public trust and acceptability of the vaccine. Participants also gave various hesitancy reasons toward COVID-19 vaccinations with 116 (69.9 %) centers on the conspiracy theory.

Table 3: Attitude of respondents towards Covid-19 Vaccination n=166

Attitude	Frequency	Percentage
Are you confident that the government reinforcement control plan for COVID-19 in Nigeria?		
Yes	162	97.6
No	4	
Do you have trust on the government on planning effort?		
Yes	116	69.9
No	50	30.1
Reasons for refusing COVID-19 vaccines?		
Conspiracy theory	116	69.9
dangerous to their health	30	18.1
Only God/Allah can prevent COVID-19	20	12.0
Do you get enough info from government on COVID-19 vaccines?		
Yes	125	75.3
No	41	24.7
Do you think you are also at risk of becoming infected with COVID-19 after vaccinations?		
Yes	133	80.1
No	33	19.9
I am unsure or unwilling to accept the COVID-19 vaccines		
Yes	121	72.9
No	45	27.1
Expressing doubts on the COVID-19 vaccine safety?		
Yes	95	57.2
No	71	42.8
Composite measure of attitude and perception of Covid-19 vaccination		
Positive	105	63.3
Negative	61	36.7

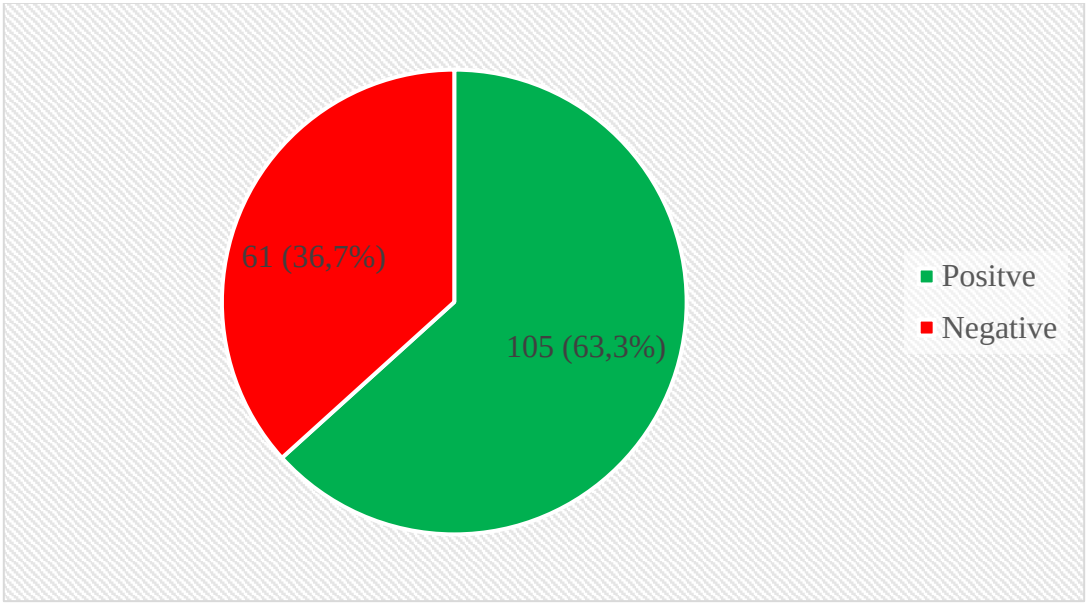


Figure 2. Attitude of Covid-19 vaccination among the Respondents

Acceptability to receive the COVID-19 vaccine

Out of the total 166 respondents, only 45 (27.1%) were willing to receive the COVID-19 vaccine. The majority of the participants were unsure to receive the COVID-19 vaccine as displayed on figure III below. The participants who responded to be unsure were categorized as hesitant for further analysis. Meanwhile, 21 (12.7%) of the respondents where totally unwilling to accept the COVID-19 vaccinations.

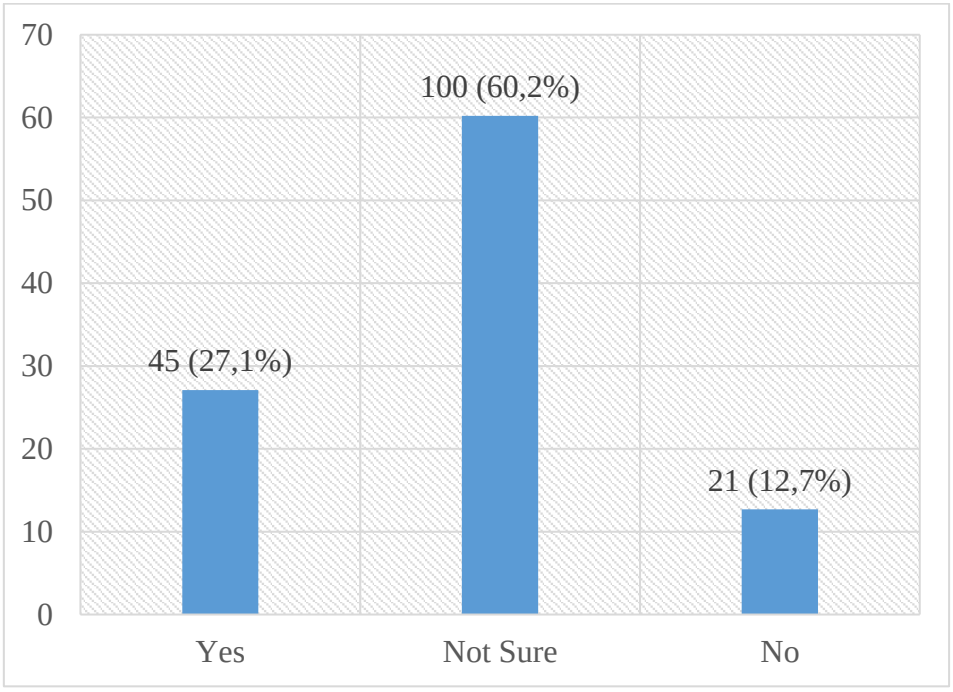


Figure 3. Acceptability of Covid-19 vaccine among the respondents n=166

Reasons for Non-acceptance of the COVID-19 vaccine

The main reason among the participants for non-acceptance for COVID-19 vaccine was to protect themselves and their families from COVID-19 infection according to 116 (70%) of participants was due to the conspiracy theory. In addition, 30 (18.07%) of the respondents stated that COVID-19 is dangerous to their health. Sixty-one (36.9%) of the traders believed that the COVID-19 vaccine is effective in preventing future infections as well as the vaccine is safe. Also, concerns over side-effects of COVID-19 vaccination were a major reason among 120 (72%) of the traders for non-acceptance of the COVID-19 vaccine. Doubts on the COVID-19 vaccine safety were also stated by 91 (55%) of the participants as important reasons for non-acceptance for vaccination COVID-19.

Table 4: Association between socio-demographic characteristics of the study participants and attitude of Covid-19 vaccination

	Acceptability						
Variables	Yes (45) n (%)	Not sure (100) n (%)	No (21) n (%)	**Total (166) N (%)**	χ^2	**df**	**p-value**
Age (years)					38.940	8	<0.001
20 – 29	7 (15.6)	19 (19.0)	1 (4.8)	27 (16.3)			
30 – 39	32 (71.1)	31 (31.0)	8 (38.1)	71 (42.8)			
40 – 49	5 (11.1)	43 (43.0)	8 (38.1)	56 (33.7)			
50 – 59	1 (0.2)	7 (7.0)	2 (9.5)	10 (6.0)			
60+	0 (0.0)	0 (0.0)	2 (9.5)	2 (1.2)			
Gender					2.614	2	0.271
Male	24 (53.3)	67 (67.0)	14 (66.7)	105 (63.3)			
Female	21 (46.7)	33 (33.0)	7 (33.3)	61 (36.7)			
Marital status					13.800	4	0.008
Single	12 (26.7)	5 (5.0)	3 (14.3)	20 (12.0)			
Married	31 (68.9)	89 (89.0)	17 (81.0)	137 (82.6)			
Divorced, separated, widowed	2 (4.4)	6 (6.0)	1 (4.7)	9 (5.4)			
Educational status					37.180	6	<0.001
Primary	2 (4.4)	15 (15.0)	3 (14.3)	20 (12.0)			
Secondary	3 (6.7)	16 (16.0)	4 (19.1)	23 (13.9)			
Diploma	4 (8.9)	42 (42.0)	7 (33.3)	53 (31.9)			
University degree	36 (80.0)	27 (27.0)	7 (33.3)	70 (42.2)			

DISCUSSION

This cross-sectional survey conducted among traders in the study area has revealed good knowledge of the preventive measures against the new coronavirus. Consequently, it positively affects the attitudes of the participants to cripple the further transmission of COVID-19 infection. Regarding the acceptability of COVID-19 vaccinations among our study participants; they have a low acceptance rate despite good knowledge that the vaccine can protect against COVID-19 infection.

The participants showed a good knowledge in the measures used in preventing the spread of the new coronavirus, 152 (91.7%), 148 (89.2%), and 142 (85.4%) agreed that hand washing, wearing masks, and cleaning surfaces as non-pharmacological measures to reduce the spread of COVID-19 infection; respectively, the majority of participants 142 (85.3%) believed that there are ways that help to slow the spreading of the virus, which is consistent with a survey conducted in the United States and the United Kingdom.

Additionally, our results were consistent and similar to a previous study in Jordan, which revealed that Jordanians had a positive attitude towards COVID-19; about 99.7% of the participants believed that hand washing is essential.

More than half of the traders (67.54%) know that there is a vaccine against COVID-19, (41.8%) believe that the COVID-19 vaccine is safe, and (67.5%) and (34.4%) believe that the flu vaccine and the pneumococcal vaccine will not protect against COVID-19. When being compared with other populations, about a quarter of people in Bangladesh believe that the COVID-19 vaccine is safe. In Jordan, 90% of participants clearly understood COVID-19 symptoms, and more than 80% were aware of the lack of vaccination. Knowledge is vital in halting the spread of the coronavirus, a Chinese study has reported that knowledge has a direct impact on attitudes and acceptability for COVID-19 Vaccinations. Sallam M, etal (2021)

Conclusion: Our study participants had good knowledge and attitudes towards COVID-19 but the acceptability level of COVID-19 vaccinations was low compared to other countries. Health authorities need to encourage more research into the main reasons in the acceptability rate of COVID-19 vaccinations. This should be intended to increase trust and advance campaigns to create more awareness about the safety and technology use to manufacture vaccinations.

The high level of reluctance regarding the COVID-19 vaccine uptake is due to multiple factors like, lack of confidence in COVID-19 vaccines, possible side effects and lack of trust in the safety of the vaccine products. The perceived risk associated with the vaccines, the government and the health system were important predictors of intent to accepting the COVID-19 vaccine. Thus, we need to develop strategies; educating public on importance of COVID-19 vaccines, awareness on potentials side effects after vaccination and trust-worthy reliable information to address the concerns raised in the study to ensure best vaccine uptake among the general population in Nigeria as a whole.

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