



(RESEARCH ARTICLE)



Impact of covid-19 Sensitization and awareness programmes on the practice of vaccination by aged persons in Kogi State, Nigeria

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Abstract

With an official position that denied the existence of COVID-19, oiled by low level of COVID-19 sensitisation and awareness programmes, Kogi State became a threat to be avoided by her other ten neighbouring federating States, in slowing down the transmissibility of the virus through vaccination. It was against this background that this study examined the impact of COVID-19 sensitization and awareness programmes on the practice of COVID-19 vaccination by aged persons in Kogi State Nigeria. This study, underpinned by psychological inoculation theory explained vaccine hesitancy as a reflection of COVID-19 awareness and sensitization programmes on aged persons. The study adopted triangulation research design with the aid of interview and questionnaire designed on a five Likert scale. Scientific sampling technique developed by Krejcie and Morgan (1970) which recommends a sample size of 384 for a population above seventy-five thousand (75,000) was used. The population of the aged persons in Kogi State is 146,143. Ordinary least squares regression and descriptive statistics was used to analyse data elicited. The study revealed that low COVID-19 sensitization and awareness programmes have negative effects on vaccine hesitancy of aged persons in Kogi State, Nigeria. Based on this finding, the study recommends that the Federal Government, Non Governmental and Faith based agencies should be actively involved in pandemic-related sensitization, provision, warehousing and administration of vaccines in a bid to achieve community herd immunity so as to slow down transmissibility or outbreaks, and to void vaccine hesitancy which is mostly aggravated by misinformation and conspiracy theories.

Keywords: Misinformation; Psychological Inoculation Theory; Vaccination; Vaccine Hesitancy.

1. Introduction

Since the beginning of the COVID-19 pandemic, it is apparent that the disease affects different people in different ways. One of the stark contrasts has been how infection with SARS-CoV-2 can affect people dissimilarly across age groups (British Society for Immunology, 2020). The initial primary and desperate global approach to slow down the transmissibility of SARS-CoV-2 pandemic (COVID-19) by government and health policy experts was the adoption Non Pharmaceutical Initiatives (NPI) while the race for vaccines marked the attention of not only the world's pharmaceutical giants but also the involvement of academia, laboratories, research and virology centres in both private and public settings (Daems&Maes, 2022).

Thus, the emergence of COVID-19 vaccines, arrived amidst arrays of conspiracy theories leading to vaccine hesitancy (Neergaard& Fingerhut, 2020; Fisher et al., 2020), which tends to slow down vaccination practices therefore obstructing community herds immunity not only in developed clime but globally. Vaccine hesitancy as *explained* by the WHO Strategic Advisory Group of Experts (SAGE), is a delay in acceptance or refusal of vaccination despite availability of vaccination services (MacDonald, 2015). Existing information overloads skewed against trust, safety and effectiveness of the vaccine of which attempt by some sovereign States further validate earlier conspiracy theory submission in turn

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encourages more vaccine hesitancy (McAllister et al., 2021). In Nigeria, efforts by the Federal Government to make vaccination mandatory for all federal were being challenged in the court of law (Erunke, 2021). So much so that faith-based organisations had to appeal to people to take the vaccine in Kogi State (Olufemi, 2021). Amidst this furor, was the position of Kogi State government, disparaging the existence of Covid-19 (Fayemi, 2021), refusal to provide storage facilities for the vaccine which later expired (Olatunji, 2021) despite death of Aides and Chief Justice of the State in a Covid-19 complicated manner (Onochie&Obansa, 2020).

The evolving attitude of aged person's to emerging vaccines (Astracenal, Johnson and Johnson, Moderna, and Pfizer) could be seen impacted upon by their level of sensitisation and awareness both as related officially by government and her relevant health agencies or awareness as transmitted by the unrestricted and uncensored social media. The practices so likely adopted by aged persons in order to navigate through the deadly COVID-19 could also be seen in their varied preventive practices of; intake of ginger spice, garlic, chloroquine drugs, drinking or steaming of hot water, avoidance of handshakes and hugging, spraying of environment with hydro chloroquine all to prevent, reduce, eradicate, or eliminate COVID-19 (Okonofua et al., 2022). This same could be seen in the evolving health lifestyle that is carried out by taking into account a number of health factors, including food, rest patterns, avoidance of overcrowded place of worship centre, exercise and clean living environment. All these practices could be seen adopted in varying measures as impacted upon by the level of sensitization and awareness of COVID-19 and the immediate perception which the knowledge triggers (Sharma et al., 2022).

This study focuses on Kogi State, where the State government outrightly denies the existence of COVID-19 (Fayemi, 2021). Not giving the Presidential Taskforce Committee on COVID-19 access to the State and the non preparedness of the state for warehousing of COVID-19 vaccines (Olatunji, 2021), is also a source of concern not only to policy makers, health developmental experts, civil society group but also to the academia. Another rationale for choosing Kogi State as a case for this study is as a result of the fact that Kogi State is the only State in Nigeria sharing boundaries with ten other States.

The high level of vaccination hesitancy could possibly account for expiration of millions of vaccine aggravated by the high level of skepticism and conspiratory theories making wave in Kogi state. Poor awareness level encouraged the disbelief of the populace as to the existence of COVID-19 so much so that it could be affecting the attitude of the aged persons of which such disorder could be seen playing out in the health practices adopted (health seeking behaviour) by aged persons and this calls for further studies. Interestingly, to the extent of literature reviewed, no study has examined the impact of COVID-19 sensitization and awareness programmes on vaccination practices of aged persons in Kogi State, Nigeria. It is this dearth of studies that this present work intends to fill by expanding the frontier of knowledge.

To achieve the objective of the study; impact of covid-19 sensitisation and awareness programmes on the practice of vaccination by aged persons in Kogi state, Nigeria. Study engaged the below stated null hypotheses:

H₀₁: COVID-19 sensitization and awareness programmes have no significant impact on vaccine hesitancy of aged persons in Kogi State, Nigeria.

2. Literature Review

2.1. COVID-19 Vaccines

Vaccines are one of the most reliable and cost-effective public health interventions ever implemented that are saving millions of lives each year (Rodrigues & Plotkin, 2020). Following the deciphering of the genome sequence of SARS-CoV-2 in early 2020 and the declaration of the pandemic by WHO in March 2020, scientists and pharmaceutical companies raced against time in efforts to develop vaccines (Coustasse et al., 2021). As of December 22, 2020, at least 85 vaccines are in preclinical development in animals and 63 are in clinical. Pfizer-BioNTech's (BNT162b2), Johnson and Johnson and Moderna (mRNA-1273) mRNA vaccines have been approved for emergency use globally (Zimmer et al., 2020). Most countries presently battle with how to surmount the prevailing COVID-19 Conspiracy theory which has greatly factored in doubts and hesitancy (Bertin et al., 2020).

2.2. Vaccine Hesitancy

One critical factor confronting the achievement of clinical vaccine is believed to be skepticism and hesitancy and skepticism among the population worldwide to emerging vaccines (Coustasse et al., 2021). Vaccine hesitancy is not limited to Nigeria, nor Africa (Neergaard& Fingerhut, 2020), but a global phenomenon though with high prevalence of skepticism in developing nations, aggravated further by the arrays of conspiracy theories. Vaccine hesitancy was

defined by the WHO Strategic Advisory Group of Experts (SAGE) as a delay in acceptance or refusal of vaccination despite availability of vaccination services (MacDonald, 2015). The worrisome dimension as seen of Nigeria was the alert that most vaccines unpatronised by the populace and could soon expire (Mcallister et al., 2021).

The opposite of vaccine hesitancy is vaccine acceptability, which is determined by three factors: confidence, convenience, and complacency (Al-Mohaithef&Padhi, 2020). Confidence is the trust in the safety and effectiveness of the vaccine, trust in the delivery system as the healthcare system, and the trust in the policymakers (French, et al., 2020). Many people have doubts about the vaccine safety, and this is a major challenge to be resolved by health care providers, policymakers, community leaders, religious bodies, and governments to increase and encourage wide acceptance of the vaccines even as *Federal Government in Nigeria, set out to make it mandatory for all federal-staffa move being challenged in the court of law* (Erunke, 2021). Moreover, vaccination convenience refers to the relative ease of access to the vaccine which includes physical availability, affordability, and accessibility (MacDonald, 2015). While complacency is associated with a low realized risk of the vaccine-preventable disease and hence more negative attitudes towards the vaccines (French, et al., 2020).

2.3. COVID-19 Sensitization and Awareness Programmes and Vaccine Hesitancy

Crawshaw et al. (2021) investigated the predisposing factors predicting COVID-19 vaccination acceptance and uptake among the general public in Canada. The study employed exploratory research design. Result from the study showed 62% of respondents were willing to accept vaccination. Thus, while a majority of individuals wanted to get the COVID-19 vaccine, there existed mistrust of governments and public health agencies accounting for lower vaccination acceptance, coupled with deep vaccination hesitancy by racialised blacks. Though a Canadian study highlighting vaccine hesitancy, there is the need for similar study in Nigeria particular in Kogi state with focus on aged persons.

El-Elimat et al. (2021) leveraged on triangulation method to examine the acceptability of COVID-19 vaccines in Jordan. The study engaged an online, cross-sectional, and self-administered questionnaire to survey 3,100 adult participants. Logistic regression analysis was used to find the predictors of COVID-19 vaccines' acceptability. Findings from the study showed that public acceptability of COVID-19 vaccines was fairly low (37.4%) in Jordan and those above 35 years old were less likely to accept the COVID-19 vaccines. The study submitted that the hesitancy vaccination level is very high in Jordan. This study was done using Jordanian data with focus on COVID-19 vaccine while this study, using Nigeria data, captures how sensitization and awareness programmes affect vaccination of aged persons in Kogi State.

Islam et al. (2021) adopted an exploratory and anonymous population-based survey to examine community knowledge, attitudes and perceptions towards COVID-19 vaccinations in Bangladesh. The survey study employed a semi-structured and self-reported questionnaire on 1658 general individuals using multiple linear regression performed to determine the variables predicting knowledge, and attitudes towards COVID-19 vaccinations. Results from the study revealed that about a quarter of respondents thought that the COVID-19 vaccination available in Bangladesh is safe, only 60% will have the vaccination and about two-thirds will recommend it to family and friends. Study though done in Bangladesh, harped more on COVID-19 vaccination perception with less focus on aged person while this study will examine the impact of COVID-19 sensitization and awareness programmes on aged persons in Kogi state, Nigeria.

2.4. Theoretical Framework

2.4.1. Psychological Inoculation Theory

This theory which underpins this study is likened to the practice of vaccination in medicine from the realm of resistance to persuasion (McGuire, 1964). In a medical inoculation, a virus is weakened to the point where it will not make the person sick, but it will trigger protective responses, like antibodies. In a persuasion inoculation, a strong challenge (a conspiracy theory) is weakened to the point where it will not change the person's position—the person's healthy state—but it will trigger protective responses, like enhanced critical thinking (Compton et al., 2016). In both contexts, a similar process is at work: exposure to weakened challenges leads to resistance to stronger challenges. In psychological inoculation, the weakened challenge often consists of two elements; a forewarning of a threat on one's attitudes and a preemptive refutation of counter-arguments. Preemptive refutation of misinformation weakens the misinformation, just as a medical vaccine is often comprised of weakened virus.

A number of things happen during the inoculation process of resistance to influence. One of the most important is threat—the motivation to engage in resistance. The cognitive and affective processes unleashed by threat are varied and powerful, including increased counter arguing, increased attitude accessibility (Pfau et al., 2006), less psychological reactance against the inoculation-informed campaign (Richards & Banas, 2015), and more psychological reactance

against attack messages (Miller et al., 2013). For conventional, prophylactic inoculation to take hold, the desired position needs to already be in place—a healthy state (Compton, 2013).

In the context of the Coronavirus, this would imply protecting the attitudes of those people who are already following public health guidelines. Strengthening their attitudinal defenses will decrease the potency of misinformation attacks. However, a more recent approach within inoculation theory expands its efficacy to also include a therapeutic application—inoculation treatments that target an unhealthy state (Compton, 2020). New work in this latter area expands inoculation theory’s reach by inoculating audiences who have already been “afflicted” with the informational virus. Therapeutic inoculation works by boosting immune defenses and decreasing the probability that people will spread the informational Virus (van der Linden et al., 2017).

The health domain boasts a particularly strong record for inoculation theory—appropriately enough in the context of COVID-19. Inoculation theory-informed public health messages could help shore up resistance to unhealthy pressures, like smoking cigarettes (Pfau et al., 1992) or binge drinking (Parker et al., 2010). More recently, inoculation work has explored ways of enhancing beneficial health behaviors, like committing to exercise programs (Dimmock et al., 2016) or strengthening vaccination intentions (Wong and Harrison, 2014), especially in response to conspiracy theories (Jolley & Douglas, 2017). For example, vaccination intentions only improved when participants were presented with anti-conspiracy arguments prior to exposure to the vaccination conspiracy theories but not when presented with counter arguments afterward.

3. Methodology

The study adopts triangulation research design of in-depth interview, and questionnaire to examine impact of COVID-19 sensitisation and awareness programmes on vaccination practice of aged persons in Kogi States, Nigeria. This study focuses on Kogi State in the North Central region of Nigeria. The projected Aged population of Kogi State is presently estimated as 146,143 for 60 years and above (National Bureau of Statistics (NBS), 2020). The purposively chosen study sites are Yagba-East local government area (LGA) from Kogi West senatorial, Ogori/Magongo LGA from Kogi Central senatorial while Olamaboro and Ankpa LGA based on largeness of size of Kogi East senatorial. The study also considers Lokoja LGA to give the purposefully chosen study sites a metropolitan outlook, all totaling five LGAs.

The Study employs scientific sampling technique determination of Krejcie and Morgan (1970) that recommends a sample size of 384 for a population above 75,000. In-depth interview four persons per LGAs were held with aged Clerics, pensioners, community heads, and retired principals. A five points Likert-Scale as suitable for regression analysis on impact was adopted using Strongly Agreed (SA), Agreed (A), Neutral (N), Disagreed (DA) and Strongly Disagreed (SD) was used in collecting the data. OLS was engaged in order to establish impact level of COVID-19 sensitisation and awareness programmes on Aged persons’ vaccination practice

$$VCHS = f(CVSA)$$

Linearizing equation (1) above produces simple regression model as thus:

$$VCHS = \beta_0 + \beta_1 CVSA + \varepsilon \dots\dots\dots (1)$$

Where;

CVSA = COVID-19 Sensitisation and Awareness in Kogi State

B₀ = is the constant or coefficient of intercept.

VCHS = Vaccine Hesitancy

β₁= the corresponding coefficients for the independent variable.

ε = stochastic error term

Table 1 Kogi State Age Population Distribution

S/n	Age distribution	Population 2006	Targetted aged
1	0-9 years	1,122,948	
2	10-19 years	728,506	
3	20-29 years	566,764	
4	30-39 years	375,041	

5	40-49 years	243,113	
6	50-59 years	131,528	
7	60-69 years	79,342	79,342
8	70-79 years	37,194	37,194
9	80+ years	29, 607	29, 607
	Aged Totals		146,143

Source: Kogi State Ministry of Information & Communication, 2022.

4. Results and Analysis of Data

The data collected from respondents and showed in Table 2 reveals that 46% of the respondents fall under the age category of 60 - 65 years, followed by 29% which falls within the age bracket of 66-70. 17% of the respondents are within the age bracket of 71-75, while 6% of the respondents fall within the age group of 76-80. Lastly, 2% of them were above 80 years of age. It can be deduced that the respondents are aged and need Medicare.

Table 2 Age Distribution of Respondents

Answer Options	Number of Respondents	Percent
60-65	178	46%
66-70	110	29%
71-75	67	17%
76-80	21	6%
80 and Above	8	2%
Total Number of Respondents	384	100%

Source: Field Survey, 2023.

Table 3 Gender Distribution of Respondents

Answer Options	Number of Respondents	Percent
Male	118	31%
Female	266	69%
Total Number of Respondents	384	100%

Source: Field Survey, 2023.

It is clear from Table 3 that the gender with the highest frequency with 266 respondents or 69% were female and the least frequency with 118 respondents or 31% were male. It shows that the female respondents are more participatory in the survey than male respondents.

The results clearly indicate that 340 respondents representing a great percentage of 88% agreed with the position of Kogi State government on denial of the existence of COVID-19. While 8 respondents, totalling 2% of the total sample size were neutral on this position and merely 36 respondents of 10% of total respondents disagreed with the position of Kogi State government on denial of the existence of COVID-19. Majority of the respondents totalling 343, submitted that Cable TV and News from neighbouring States drives sensitisation and awareness on COVID-19 in Kogi State. While 3% of total respondents were neutral on this issue and only 31 respondents disagreed that reliance on Cable TV and News from neighbouring States drives sensitisation on COVID-19 in Kogi State.

Majority of the respondents totalling 342 which represent 90% agreed that the non-functioning of State media during lockdown assisted conspiracy theories against COVID-19. While 29 respondents did not share common ground on this position only 13 respondents which amounted to 3% remained neutral on the position that the non-functioning of State media during lockdown assisted conspiracy theories against COVID-19. Testing the knowledge of respondents on their

perception of the non-pharmaceutical as a preventive approach in Kogi State shows that 58% of total respondents agreed while 40% of respondents amounting to 157 respondents disagreed 7 respondents remained neutral.

Table 4 Results and Analysis of Data

COVID-19 (Dependent)		SA	A	N	D	SD	Total
1	Do you agree with Kogi State government on denial of the existence of COVID-19	140 (36%)	200 (52%)	8 (2%)	30 (8%)	6 (2%)	384
2	Cable TV and News from neighbouring States drives sensitisation on COVID-19 in Kogi State	214 (56%)	129 (33%)	10 (3%)	20 (5%)	11 (3%)	384
3	Non-functioning of State media at lockdown assisted COVID-19 Conspiracy theories	141 (38%)	201 (52%)	13 (3%)	18 (5%)	11 (2%)	384
4	Non pharmaceutical means (Nose mask, physical distancing, handwashing) is the best way to prevent COVID-19 infection	125 (33%)	95 (25%)	7 (2%)	72 (19%)	85 (21%)	384
5	Practices of ginger, garlic and hot water is mostly done	185 (48%)	95 (25%)	21 (5%)	68 (18%)	15 (4%)	384
6	Patronage of vaccination is encouraged in Kogi state	47 (12%)	34 (9%)	17 (4%)	194 (51%)	92 (24%)	384
7	COVID-19 is a game by the rich against the poor	105 (27%)	127 (33%)	8 (2%)	69 (18%)	75 (20%)	384

Source: Field Study, 2022.

On the practices of ginger, garlic and hot water usage as a way of slowing down the transmissibility of COVID-19 in the State. Majority of the respondents amounting to 280 and 73% agreed that such practice was common during the pandemic. Only 83% respondents did not share common view on practices of Ginger and garlic on transmissibility of COVID-19 while 21 respondents were neutral on the issue. On the patronage of vaccination being encouraged in Kogi State, the majority of the respondents totalling 286 and representing 75% of total respondents disagreed as they mostly submitted that poor provision for storage of the vaccines itself at the first instance coupled with the reluctance of the State government to accept the vaccine and the eventual expiration of some of the vaccine did not amount to any encouragement for State residents to patronise the vaccination.

This position did not enjoy the support of 81 respondents totalling 21% who submitted that patronage of vaccination was encouraged in Kogi State. Only 17 respondents were neutral on this vexed issue. The conspiracy theory was tested by the question of, if COVID-19 is a game by the rich against the poor and 232 respondents agreed with such line of thought, while 8 respondents were neutral on this submission 144 respondents totalling 38% did not share the view that COVID-19 is a game by the rich against the poor.

340 respondents agreed totaling 88% agreed with the submission that vaccinated person are exposed to high risk of death and this could be said to align with the position of the Conspiracy theory and misinformation overloads on social media this could be seen as a measure that could also account for vaccination hesitancy in the State of Kogi State. 8 respondents accounting for 2% of total respondents were neutral on the issue of death risk and vaccine acceptance while just 36 respondents amounting to 10% of total respondents did not share common ground with the majority as they disagreed that vaccinated person are exposed to high risk of death.89% of total respondents which translates

The extent to which misinformation thrives in the absence of sensitisation and awareness program could be gleaned from the response of 89% of total respondents that amounted to 343 respondents , who submitted that aged persons are committed to the vaccination exercise while just 31 respondents differs in opinion only 10 respondents remained neutral on such assertion. 341 respondents asserted that they will need more conviction to take COVID-19 vaccines even as only 7% of the total respondents thought otherwise. 232 respondents agreed to vaccinate Children than being vaccinated while 144 respondents thought otherwise even as just 8 respondents are neutral.

Table 5 Vaccine Hesitancy and COVID-19 Sensitisation and awareness programmes

	Vaccine Hesitancy	SA	A	N	D	SD	Total
8	Vaccinated person are exposed to high risk of death	140 (36%)	200 (52%)	8 (2%)	30 (8%)	6 (2%)	384
9	Aged persons are committed to the vaccination exercise	20 (5%)	11 (3%)	10 (3%)	214 (56%)	129 (33%)	384
10	You need more conviction to take COVID-19 vaccine	141 (38%)	201 (52%)	13 (3%)	18 (5%)	11 (2%)	384
11	You selectively relate with those in contact with Chinese constructions workers	185 (48%)	95 (25%)	21 (5%)	68 (18%)	15 (4%)	384
12	Your adherence to regular exercise is on the increase	47 (12%)	34 (9%)	17 (4%)	194 (51%)	92 (24%)	384
13	Would you prefer to vaccinate the children	105 (27%)	127 (33%)	8 (2%)	69 (18%)	75 (20%)	384

Source: Field Study, 2022.

The practice of intakes of ginger, garlic and lemons are order of the day to stay safe was agreed to by 157 respondents while 220 did not share such view and only 7 respondents remained neutral on such assertion.

Table 6 Presentation of the Interview Transcript on COVID-19 Sensitisation and Awareness Programmes in Kogi State

Interview Questions	Themes	Frequency	Percent
How would you evaluate the awareness level about COVID-19 in Kogi State	Low	11	55%
	High	2	10%
	Moderate	3	15%
	non existent	4	20%
	Total	20	100%
In your opinion, which medium has assisted awareness level of COVID-19 in Kogi State	Social Media	10	50%
	Print Media	2	10%
	Radio	3	15%
	Television	4	20%
	Public Outreach and Campaigns	1	5%
	Total	20	100%
Who do you think are greatly endangered by COVID-19 outbreak	Aged People	13	65%
	People with Disabilities	1	5%
	Children	2	10%
	Adult	3	15%
	Pregnant Women	1	5%
	Total	20	100%

Kindly relate the most prevalent rumour of COVID-19 in your locality	Bioweapon Conspiracies	10	50%
	It is divine punishment	3	15%
	It was manufactured by big pharmaceutical companies for profit	3	15%
	It is an excuse for service cuts	4	20%
	Total	20	100%
Aged persons already on prescriptions do more of self medication with no physician follow up	Agreed	16	80%
	Disagreed	4	20%
	Total	20	100%

Source: Field Survey, 2023.

The respondents were asked “How would they evaluate the awareness level about COVID-19 in Kogi State”. The majority of the responses (55%) gotten from interview conducted showed that there is low level of awareness about the coronavirus disease (COVID-19) in Kogi State. The interviewees disclosed that though they got to know that the virus exist through the social media, but there is no sensitization and awareness as to the existence of the virus in the State. It is worrisome that despite the measures put in place by the Federal Government through the Nigeria Centre for Disease Control (NCDC) and the various state governments, the level of awareness in the state is virtually non existence.

Also, one of the interview questions was “In your opinion, which medium has assisted awareness level of COVID-19 in Kogi State”. The greater part of the responses indicated that social media has really assisted awareness level of covid-19 in Kogi State. This is as a result of the fact that social media gives its users the power to build communities around a cause and encourage supporters to take action. This is done by sharing images, stories, and videos to raise awareness and facilitate discussion. News spreads quickly online and it can take just minutes for a post to go viral. The Kogi State has discouraged the sensitisation and awareness programmes using State Television and Radio stations. The People only get information about the virus on the social media.

The interviewees were asked “Who do you think are greatly endangered by COVID-19 outbreak”. The aggregate of evidence gotten from the interviewees suggest that COVID-19 is more likely to cause severe illness in aged person and pregnant women, particularly if they have certain underlying health conditions.

One of the interview questions was “Kindly relate the most prevalent rumour of COVID-19 in your locality”. The cumulative answers revealed that the interviewees submitted that COVID-19 infection in Nigeria is seen as biological weapon and a product of big pharmaceutical companies to make money from the virus. Majority of the interviewees agreed that aged persons already on prescriptions do more of self-medication with no physician follow up because of the fear of contacting the virus from health care givers.

Table 7 Presentation of the Interview Transcript on Vaccine Practices in Kogi State

Interview Questions	Themes	Frequency	Percent (%)
How likely are you to get a COVID-19 vaccine?	Not Likely	16	80%
	Likely	4	20%
	Total	20	100%
Factors that could possibly change your mind regarding the COVID-19 vaccine	Necessary to secure/maintain job	4	20%
	Allow free access to social activities	2	10%

	More scientific or medical information	5	25%
	Saw people they care about getting sick/dying	8	40%
	Required to travel overseas	1	5%
	Total	20	100%
Have you been vaccinated	Yes	3	15%
	No	17	85%
	Total	20	100%
Would you support vaccine mandate	With respect to arriving passengers	1	5%
	Frontline medical/elder care workers	8	40%
	Those in the hotel and tourism sector	2	10%
	Taxi and minibus drivers.	5	25%
	Public servants and school children.	4	20%
	Total	20	100%
Reasons for refusing a COVID-19 vaccination.	low perceived benefits of getting vaccinated	1	5%
	a low subjective risk	1	5%
	concerns of potential vaccine adverse effects	6	30%
	poor health literacy	4	20%
	mistrust	5	25%
	spiritual and religious beliefs	3	15%
	Total	20	100%

Source: Field Survey, 2023.

The respondents were asked “How likely are you to get a COVID-19 vaccine”. The majority of the responses from interview conducted showed that they are not likely to get the vaccine, they are apprehensive about the efficacy of the vaccine and the side effects that could emanate from the vaccine. Also, one of the interview questions was “what are the factors that could possibly change your mind regarding the COVID-19 vaccine”. The greater part of the responses indicated that what could make them to change their mind about vaccination is when they see people they care about getting sick/dying. Second reason is when there is more scientific or medical information about the virus.

The interviewees were asked “Have you been vaccinated”. The aggregate of evidence gotten from the interviewees suggest that majority of them have not been vaccinated. One of the interview questions was “Would you support vaccine mandate”. The cumulative answers revealed that the interviewees submitted that they would support compulsory vaccination for frontline medical/elder care workers and public servants and school children. Majority of the interviewees agreed that reasons for refusing a COVID-19 vaccination were because of concerns of potential adverse effects from the vaccine, poor health literacy and mistrust that exist between the citizens and the government.

4.1. Test of Hypotheses

The R^2 value of .969 indicates that 96% of Vaccine Hesitancy of aged persons in Kogi State is likely explained by Covid-19 Sensitisation and Awareness Programmes. The remaining 4% are attributed to other independent variables that are not captured in the regression model.

Table 8 Model Summary

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.984 ^a	.969	.949	.10424	.949	2367.786	5	378	.000	.187

Source: SPSS Output, 2023.a. Predictors: (Constant), CVSA. Dependent Variable: VCHS

Table 9 Ordinary Simple Regression Result for Model

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.583	.040		14.575	.000		
	CVSA	-.733	.041	-.906	-17.878	.000	.031	10.768

a. Dependent Variable: VCHS Source: SPSS Output, 2023.

The regression result confirms that Covid-19 Sensitisation and Awareness Programmes has negative significant impact on Vaccination practices of aged persons in Kogi State ($\beta = -.733, p < .001$). The coefficient of Covid-19 Sensitisation and Awareness Programmes is negative. This means that Covid-19 Sensitisation and Awareness Programmes in Kogi State will translate to Vaccine Hesitancy of aged persons in Kogi State. Thus, Study have sufficient reason to reject the null hypothesis, we therefore conclude that Covid-19 Sensitisation and Awareness Programmes has significant negative impact on Vaccine Hesitancy of aged persons in Kogi State.

Table 10 Analysis of Variance for Model

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	128.634	5	25.727	2367.76	.000 ^b
	Residual	4.107	378	.011		
	Total	132.741	383			

Source: SPSS Output, 2023. a. Dependent Variable: VCHS , b. Predictors: (Constant), CVSA

The $F(5, 378) = 2367.786, p < .001$. It indicates that the model is fit and the independent variable is properly selected and used.

5. Discussion of Findings

The finding from the hypothesis is that Kogi State Sensitisation and Awareness programmes has a negative impact on Vaccine Hesitancy of aged persons in Kogi State, Nigeria. It indicates that the little or non-existing sensitisation and awareness level further negatively impact on the hesitancy level of the aged whose reliance wax stronger by the official disbelief of the State Official and assisted by the conspiracy theories trending to that effect. This finding is inconsistent with the findings in previous works of Crawshaw et al. (2021); El-Elimat et al. (2021). By this result, we therefore reject the null hypothesis and accept the alternate that Kogi State sensitisation and awareness program negatively impact vaccine hesitancy of aged person and reject the alternate

6. Conclusions

This study concludes that absence of Covid-19 sensitisation and awareness program is counterproductive in Kogi State and this could be seen in the Vaccine Hesitancy of the aged person in Kogi State which did not help in slowing down the

transmutability of the Covid-19. The study also submits that the poor and absence of Covid-19 sensitisation and awareness program by the state government couple with the refusal of the State to make provision for storage of Moderna and Astracene Vaccines for the residents of the state further transmit despair and aggravate negatively disposition to patronise vaccination by residents of the State.

Recommendations

Based on the conclusions of this study, the following recommendations are made;

Federal Government, Non-Governmental and Faith based agencies should be actively involved to counter the negative narratives from the Kogi State Government and the misinformation from conspiracy theories trending on social media. Federal Government and intergovernmental agencies, Regional bodies, Faith Based organisations and International Donor should be actively involved in the provision, warehousing and administration of vaccination respectively during pandemic as effort to achieve herd immunity as negative narrative could aggravate transmissibility amongst the aged.

Compliance with ethical standards

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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