

Information and Misinformation of Covid-19 Pandemic: A Descriptive Analysis of Local Perception in Delta State, Nigeria

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ABSTRACT

A lot of misconceptions and misinformation are being circulated concerning COVID-19. This study was therefore designed to investigate the role, and impact of information and misinformation with regard to socio-demographic factor relative to knowledge, attitude and cultural belief of the people of Delta State. The study adopted an online survey about misinformation on COVID-19 pandemic. The study investigated social media such as Whatsapp, Twitter, Facebook; and physical interaction and their impact on misinformation of COVID-19 on misinformation and information. The structured questionnaire was used for data collection. Data collected were analyzed using simple percentage, mean and standard deviation. Finding of the study showed that overall 45% of the sample population had good knowledge of COVID-19 management practice. Significant difference was found between the demographic factor knowledge and practice of COVID-19 management procedure, hence the impact was felt in Delta State. Also, the level of information about COVID-19 was low, due to the impact of socio-demographic factor about COVID-19 in Delta State. The acceptability of such information about COVID-19 prevention protocols were hindered by misconceptions (socio-demographic factors) about COVID-19 information, hence orientation of the populace about COVID-19 education need to be enhanced in Delta State. It was concluded that the knowledge of COVID-19 was poor and the practice (prevention protocol) was also poor among the respondents. It was recommended that health programme planners should consider reorientation of the respondents against COVID-19.

INTRODUCTION

The COVID-19 outbreak is the greatest challenge of the 21st century. Today, governments are grappling to tackle false and misinformation spreading through social media about COVID-19. In late December 2019, an outbreak of a strange disease (COVID-19) which is characterized by fever, dry cough, fatigue, and occasional gastrointestinal symptoms. It occurred in a seafood wholesale wet market in Wuhan, China. Since then, it has spread to many countries such as Thailand, Japan, the republic of Korea, Vietnam, Germany, Brazil, the United States, and Singapore (Chian, Yu-jium, 2020). Since December 2019 and as at the first week of 2021, about 11,123,385 cases of COVID-19 under the applied case definitions and testing strategies in the affected countries have been reported including 2,721,891 deaths. (ECDPC, 2021)

The COVID-19 pandemic has the potential to impact all facets of the society. Equally, anyone who is irresponsible during and after COVID-19 outbreak would likely put others at risk. The COVID-19 pandemic is accompanied by various stressors that requires adjustment in everyday life and possibly changes in personal prospects. While some individuals may cope well with COVID-19, others may develop psychological distress

which includes depressive symptoms, anxiety, or stress. (Noewi Anja Brog, Julia Katherine Hegy, Thomas Berger and Hans Jorg Znoj, 2021).

WHO declared COVID-19 a global health emergency, it introduced several healthcare protocols to mitigate the potential impact. Bauweister (2019) maintains that the outbreak of COVID-19 in Nigeria was accompanied by online, local and foreign information.

The COVID-119 is regarded as the first social media pandemic which have caused a huge disaster in the 21st century due to misinformation about the disease. Misinformation pertaining COVID-19 pandemic is generating severe risk to public health. To inform effective public health, especially among farmers, it to investigate the information and misinformation of COVID-19 in Delta State, Nigeria. The study, therefore investigated the local perception of Covid 19 Delta State, Nigeria

Objective of the study

The broad objective of the study is to investigate the local perception of Covid 19 and its implication on food production in Delta State, Nigeria.

The specific Objectives were to

- i. identify the sources of information and misinformation of Covid 19 in Delta state
- ii. examine the respondents knowledge about Covid 19 symptoms
- iii. ascertain the knowledge and attitude of respondents towards Covid 19 pandemic precautionary methods
- iv. determine the Covid 19 precautionary methods practice and culture among the respondents

METHODOLOGY

The study adopted an analytical cross sectional survey with 153,500 questionnaire drawn from the recourse of genera knowledge about COVID-19, its symptoms, precautionary methods and practice of precautionary method in relationship to socio-demographic factor of the sample. The survey was conducted in selected semi-urban, urban and rural areas with high intensity for food in Delta State, Nigeria. In August to November 2020, random sampling technique was used to select the samples from the selected semi-urban, urban and rural areas of Delta State, with informed consent of the respondents.

The research tools were grouped into participants demographics e.g. age, occupation, religion, sex, coupled with social demographic factor reactions to information knowledge, knowledge about symptoms of COVID - 19, COVID-19 precautionary method knowledge , knowledge about symptoms of COVID-19, and the practice of precautionary method of COVID-19 prevention protocol.

A self-developed comprehensive and well Structured questionnaire which includes areas of knowledge about information about the pandemic, knowledge of symptoms of COVID-19, knowledge on precautionary methods and the practice of precautionary methods to avoid the virus. The questionnaire responses were recorded as yes, no and not sure. General analysis was done using frequency and percentage.

DATA ANALYSIS AND RESULTS

The main purpose of this study is to investigate the information and misinformation of COVID 19 pandemic in Delta State.

The data generated from the questionnaire responses were grouped according to the research questions. The results were then presented in tables for easy analysis of data. The questionnaires include information on source of COVID 19 Pandemic information, information about COVID 19 symptoms, information on knowledge, attitudes & behavior of respondents to COVID 19 Pandemic and lastly information on COVID 19 precautionary practice and culture (Table 2-5) responses were recorded as “yes”, “No” and not sure” Analysis were performed using frequency and percentages.

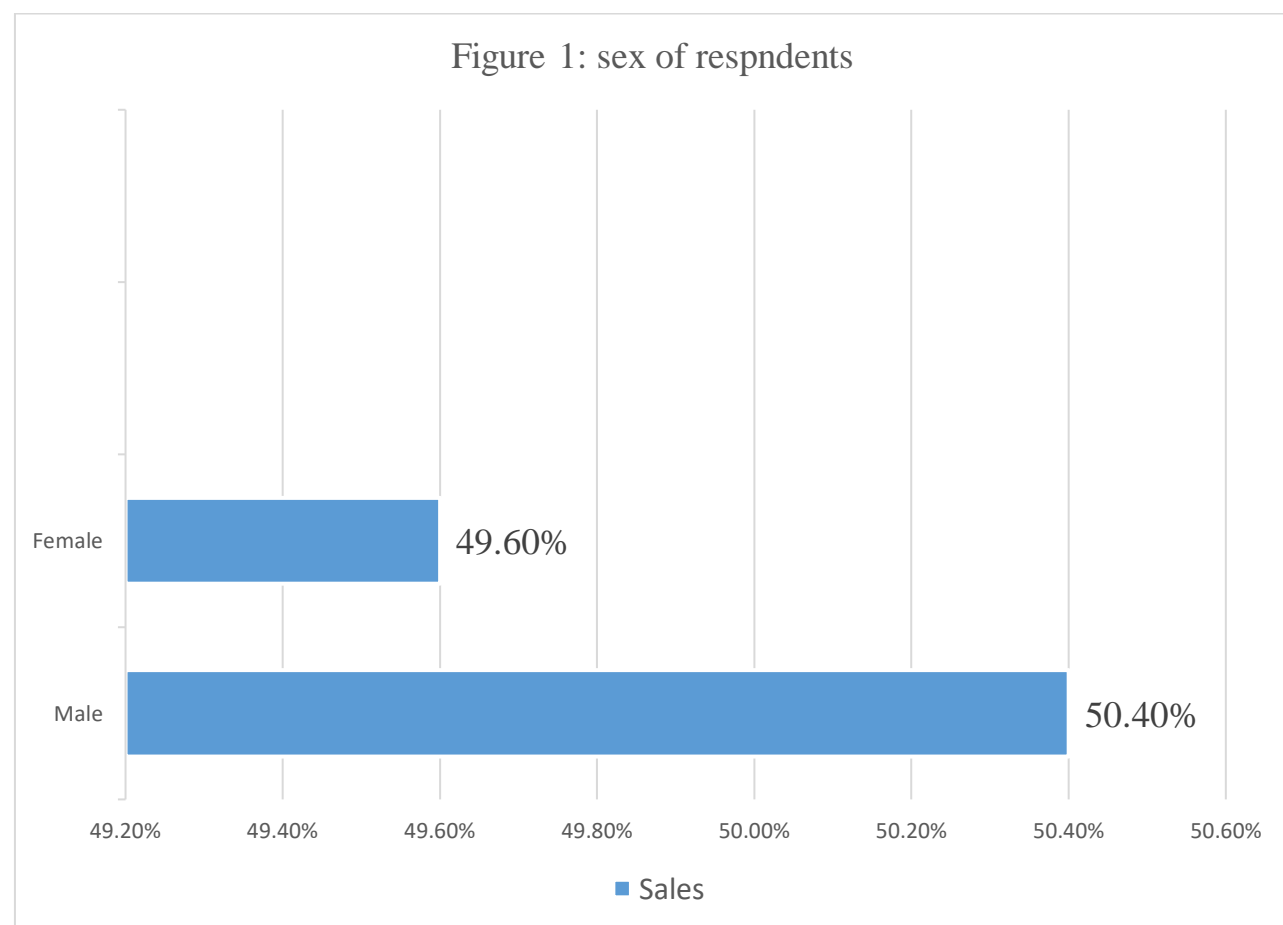
RESULTS

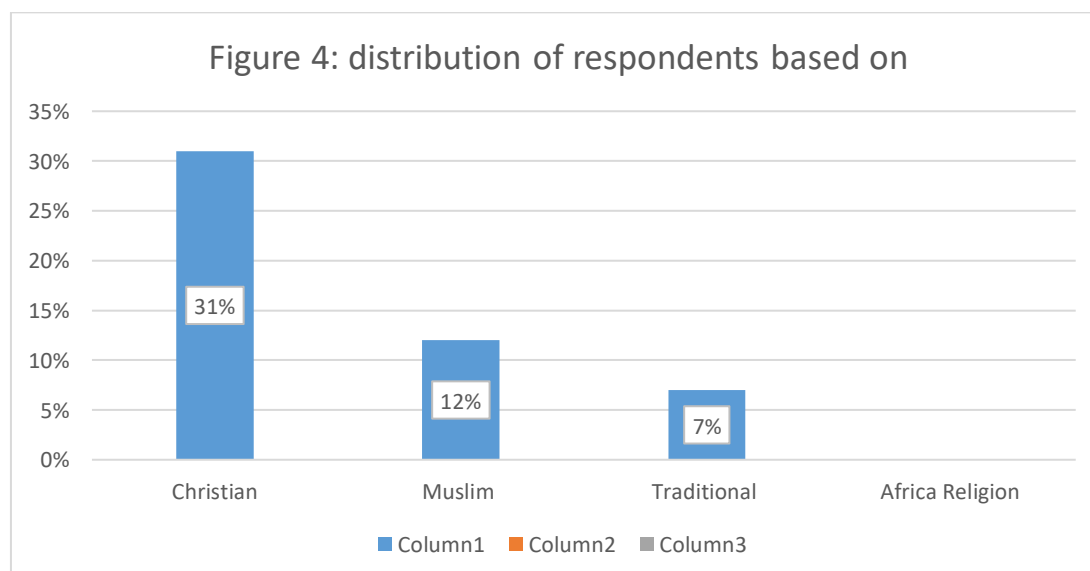
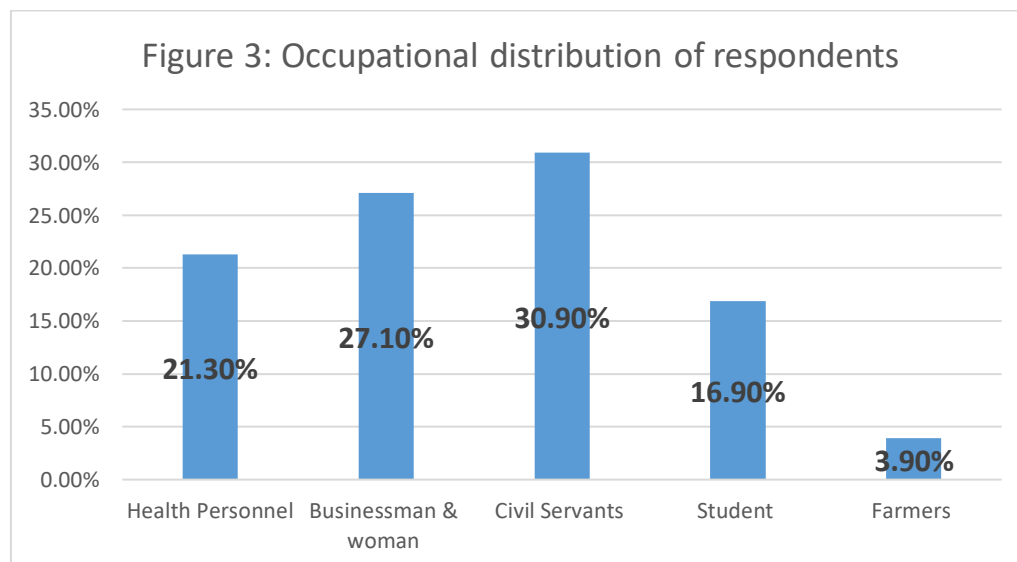
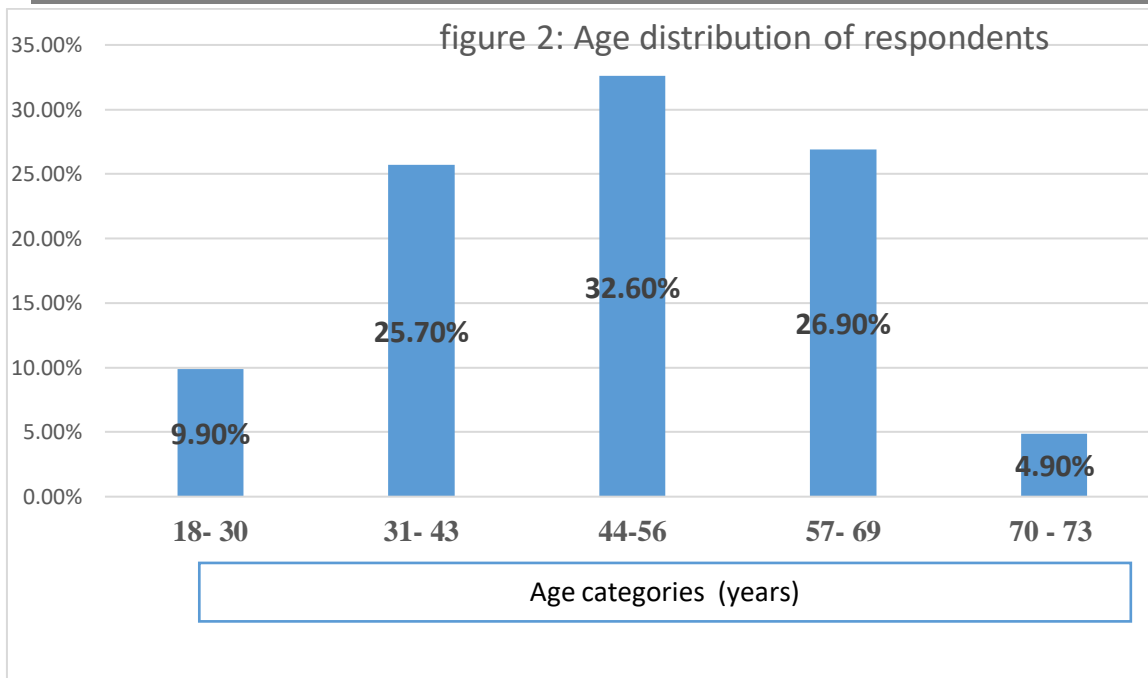
The result of study was presented and discussed under the following two sections.

Section A respondent data

Section B respondent questionnaires

Section A: Respondent data





From the finding on basic demography respondent data in table (1) above, it was found that 50.4% of the respondents were male while 49.6% of them were female. This result show a faire distribution of the male and female gender among the respondents, suggesting that responses will be presented as it affect the male and female gender accordingly. Similar sex distraction was reported by Onyemekihian et al., (2022) who reported a sex distribution of 54.22% and 45.78% respectively for delta state Nigeria. It was also found from the study that 15,205 (9.9%) of respondents were between 18-30 years, 39,490 (25.7%) were between 31-45 years, 41,300 (26.9%) of the respondent were 57-69years, while 7,500 (4.9%) of the respondent were between 70-83 years. This suggests a high population of middle age persons in the community. Similar result was by Onyemekonwu, et al., (2019) who reported a mean age of 43 years for respondents in Delta State, Nigeria. In terms of occupation, it was found that 32,650 (21.3%) of the respondent population are health personnel, 41,590 (27.1%) are business men/woman and 47,408 (30.9%) of the respondent are civil servants, 25,900 representing 16.9% of the respondent are student, while 5,952 (3.9%) are farmers. In Religion it was found that 124,335 (81%) are Christian, 18,420 (12%) are Muslim while 10,745 (7%) are traditional Africa Religion.

SECTION B; RESPONDENT QUESTIONNAIRE

TABLE 2 INFORMATION AND MISINFORMATION SOURCE

NO	RESOURCE	YES	%	NO	%	NO	%
1	Media (electronic & print)	76,750	50	64,163	41.8	14,587	8.2
2	Social Media (Facebook, Internet, Whatsapp etc)	104,687	68.2	21,183	13.8	27,630	18.2
3	Family members, place of work & friends	84,425	55	49,58.5	32.3	19,494.5	12.7
4	Health professionals	61,400	40	76,750	50	15,350	10

TABLE 3 INFORMATION KNOWLEDGE ABOUT COVID 19 SYMPTOMS

NO	SYMPTOMS	YES	%	NO	%	Not SURE	%
1	Flu	76, 750	50	61,400	40%	15,350	10
2	Cough	73,680	48	64,410	42	15,350	10
3	Sore throat	84,425	55	32.3	32.3	14,444	12.7
4	Headache	61,400	40	76,750	50	15,350	10
5	Difficulty in breathing	92,100	60	46,052	30	15,350	10
6	Fever	98,240	64	41,445	27	13,815	9

7	Muscle or joint pains	89,030	58	49,120	32	15,350	10
8	Abdominal symptoms	85,960	56	42,980	28	24,560	16
9	Dizziness	84,425	55	52,190	34	16,885	11

TABLE 4 INFORMATION ON KNOWLEDGE AND ATTITUDE OF RESPONDENTS TOWARDS
COVID 19 PANDEMIC PRECAUTIONARY METHODS

NO	PRECAUTIONARY	YES	%	NO	%	Not SURE	%
1	Hand washing	107,450	70	33,156	21.6	12,894	8.4
2	Use of facemask	90,565	59	44,361.5	28.9	18,574	12.1
3	Exercise	79,820	52	54,492.5	35.5	19,187.5	12.5
4	Use of sanitizers	75,982.5	49.5	51,422.5	33.5	26,095	17
5	Social distancing	82,890	54	39,296	25.6	15,964	10.4
6	Avoiding hand shaking/ hugging	47,431.5	30.9	87,648.5	57.1	18,420	12
7	Avoiding crowded places	75,215	49	79,513	51.8	14,122	9.2
8	Use of gloves	89,183.5	58.1	53,725	35	10,591.5	6.9
9	Staying at home	85,039	55.4	50,041	32.6	18,420	12
10	Healthy diet/use of hot fluid, vitamin C containing food etc	73,680	48	59,251	38.6	20,569	13.4

TABLE 5 INFORMATION ON COVID 19 PRECAUTIONARY METHODS PRACTICE AND CULTURE

NO	PRECAUTIONARY	YES	%	NO	%	Not SURE	%
1	Hand washing	67,540	44	61,707	40.2	24,253	15.8
2	Use of facemask	73,680	48	58,483.5	38.1	21,336.5	13.9
3	Use of gloves	79,820	52	64,623.5	42.1	9,056.5	5.9
4	Use of sanitizers	78,285	51	62,781.5	40.9	12,433.5	8.1
5	Social distancing	81,355	53	46,817.5	30.5	25,327.5	16.5
6	Staying at home	85,960	56	62,321	40.6	5,219	3.4
7	Avoiding nose touching, mouth, eyes	95,477	62.2	44,208	28.8	13,815	9
8	Avoiding hand shaking	93,635	61	46,050	30	13,815	9

9	Avoiding crowded places	101,310	66	48,813	31.8	3,377	2.2
10	Exercise avoidance	84,425	55	31,467.5	20.5	39,142.5	25.5
11	Healthy diet intake	87,648.5	57.11	48,966.5	31.9	16.885	11
12	Avoiding Vaccination Exercise	89,030	58	49,120	32	15,350	10
13	Avoidance of awareness campaign	98,240	64	41,445	27	13,815	9

1. The sample population believe that effective vaccination of the populace will reduce the effect of COVID 19 disease coupled with government awareness campaign.

DISCUSSION OF RESULTS

The availability of adequate information and misinformation about COVID 19 pandemic was viewed from different perspectives, namely basic demography, information knowledge about COVID 19 and the precautionary methods. The study aimed at describing, attitude, information knowledge and the general behaviour of the study population toward COVIDS 19 pandemic.

153,500 respondents were involved in this study. The male participant were 77,364 (50.4%) while the female were 76,136 (49.6%). The enrolled participants majority 50,102 (32.6%) were between the age of 44-56 years with 4.9% (7,500) participants above 70 years. There were 47,408 individuals in government service, 41,590 (27.1%) in private business, 37,650 (21.3%) as student or unemployed, while 5,952 (3.9%) were peasant farmers.

On inquiring about the sources of information of covid-19, majority (68.2%) reported they got information knowledge about corona virus through electronic and print media, (50%) through social media while (55%) through family members, place of work & friends only.

From table 2, concerning information and misinformation source, it was gathered that 104,687 (68.2%) agreed that they got their information about COVID 19 through media (electronics & print media), 21,183 (13.8%) disagree while 27,630 (18%) was not sure. 76,750 (50%) said they got their information about COVID 19 through social media, 64,163 (41.8%) said No, while 14,587 (41.8%) said no, while 14,587 (8.2%) was not sure. 84,425 (55%) believed they got their information about COVID 19 from, family members, place of work & friends. 49,581.5 (32.3%) disagree, while 19,494.5 (12.7%) was not sure. 61,400 (40%) was sure they got their information about COVID 19 from health professionals, 76,750, (50%) said no, while 15,350 (10%) was not sure. This result is compatible with the World Health Organisation (WHO,2020) declaring information from social media as fake and a challenging phenomenon {Vicol, 2020). This result is also similar to work by (Ali, 2019) which also witnessed social media as a primary source of COVID 19 information.

Table 3; Concerning information knowledge about COVID 19 pandemic signs and symptoms.

76,750 (50%) believe that flu is also a sign of been infected by COVID 19 disease 61,400 said no, while 15,350 (10%) was not sure. 73,680 (48%) affirmed that cough also is a & symptoms of COVID 19 pandemic 64,410 (42%) disagree while 15,350 (10%) was not sure 84,425 (55%) said yes to sore throat being a symptoms of COVID 19, 76,750 (50%) said no while 15,350 (10%) was not sure. 92,100 (60%) attributed difficulty in breathing to sign & symptoms of COVID 19 disease. 46,052 (30%) said no, while 15,350 (10%) was not sure. 98,240 (64%) said headache was also a sign and symptom of COVID 19, 41,445 (27%) disagree, while 13,815 (9%) was not sure. 89,030 (58%) said yes that muscle or joint pains are sign of COVID 19 disease 49,120 (32%) disagree while 15,350 was not sure. 85,960 (56%) affirmed that abdominal symptom's were sign of COVID 19 pandemic, 42,980 (28%) disagree while 24,560 (16%) was not sure, 84,425 (55%) of the sample population said yes that dizziness is a sign & symptom of COVID 19 disease, 52,190 (34%) said no while 16,885 (11%) was not sure The result of this research was correlated with a previous study by Rizwan (2020). That was conducted on COVID 19 symptoms, which show a that common symptom of corona virus is fever.

Table 4; On information on knowledge attitude of respondent towards COVID 19 precautionary methods.

85,039 (55.4%) of respondents believed that hand washing was a good precautionary measure against COVID 19 disease 50,041 (32.6%) disagree (no) while 18,420 (12%), was not sure. 75,215 (49%) of the respondent population agreed that wearing of facemask as a precautionary method of COVID 19 prevention, 79,513 (51.8%) said no (disagree) while 14,122 (9.2%) was not sure. 79,820 (52%) agreed the use of hand gloves act as precautionary measure of preventing COVID 19 disease 54,492.5 (32.5) disagree while 19,187.5 (12.5%) was not sure. 75,982.5 (49.5%) affirmed the use of hand sanitizer as precautionary method, 51,422.5 (33.5%) said no, while 26,065 (17%) was not sure. 82,890 (54%) agreed to the fact that social distancing as precautionary method of Covid 19 prevention. 39,296 (25.6%) said no, while 15,964 (10.4%) was not sure. 87,648.5 (54%) said yes that social distance prevent COVID 19 disease, 39,269 (25.6%) said no, while 15,964 (10.4) was not sure. 87,648.5 (57.1%) agreed that hand shaking and hugging avoidance is a precautionary method against COVID 19 disease. 47,431.5 disagree, while 18,420 (12%) said yes that avoiding crowded place prevent COVID 19, 44,361.5 (28.9%) said no, while 18,574 (12.1%) was not sure. 89,183.5 (58.1%) agreed that regular exercise prevent COVID 19 disease, 53,725 (35%) said not, while 10,591.5 (6.9%) was not sure. 107,450 (70%) said yes that staying at home is a good precautionary method of COVID 19, 33,156 (21.6%) said no, while 12,894 (8.4%) was not sure. 73,680 (48%) agreed that healthy diet/use if hot fluid, vitamin C is a good precautionary method of COVID 19 disease 59,251 (38.6%) said no, while 20,569 (13.4%) was not sure. Another report by Rizwan (2020) affirm the regular usage of hand sanitizer, hand washing and masking to mitigate the disease infection, which invariably means increasing of participant to personal hygiene measures primarily to avoid COVID 19 infection to prove this research work relevant.

Table 5; Information on COVID 19 precautionary method practice and hand washing as a precautionary method (61,707) (40.2%) is no, while 24,253 (15.8%) was not sure. 73,680 (48%) agreed to the usage of

facemask, 58,483.5 (38.1%) said no, while 21,336.5 (13.9%) was not sure. 79,820 (52%) affirmed to the usage of hand gloves, 64,623.5 (42.1) said no, while 9,056.5 (5.9%) was not sure 78,285 (51%) said yes, hand sanitizer gives a hope of prevention of the disease, 62,781.5 said No, while 12,433.5 (8.1%) was not sure. 81,355 (53%) agreed that social distancing as a precautionary method, 46,817.5 (30.5%) said no, while 25,327.5 (16.5%) was not sure 85,960 (56%) affirmed to staying at home, 62,321 (40.6%) said no, while 5,219 (3.4%) was not sure 95,477 (62.2%) agreed to no touching of mouth and nose and eyes, 44,208 28.8% agreed to touching of mouth eye and nose, while 13,815 (9%) was not sure. 93,635 (61%) affirmed to avoidance of hand shaking, 46,050 (30%) said no while 13,815 (9%) was not sure. 101,310 (66%) agreed to crowded place avoidances, 48,813 (31.8%) said no, while 39,142.5 (25.5%) was not sure. 84,425 (55%) agreed to exercise participation, 31,467.5 (20.5%) said no, while 39,142.5 (25.5%) was not sure. 87,648.5 (57.1%) said yes to healthy diet intake, 48,966.5 (31.9%) disagree, while 16,885 (11%) was not sure. 81,030 (58%) said yes to non-avoidance of vaccination, exercise, 41,120 (32%) disagree, while 15,350 (10%) was not sure. 98,240 (64%) did not agreed to the avoidance of awareness campaign, 41,445 (27%) agreed while 13,815 (9%) was undecided

On inquiring about the resource majority 68.2% report they got their information from social media, while 50% from print and electronic media and 55% family members, 40% through health professionals. The reason for social media being the most of available source of information about COVID 19 virus is because people are more exposed to social media technology and grabs information easily from them. Real and correct information about COVID 19 virus from health professional takes (40%), which is not enough for the populace hence they the despondence tend to collect information about corona virus from any available sources, either the information is correct or not.

On information knowledge about COVID 19 symptoms, most of the participant (64%) reported fever as a symptom of corona virus infection, 60% though about difficulty in breathing, 58% about muscle and joint pain, 56% about abdominal symptoms, sore throat and dizziness got 55%, 50% about cough, 48% said flu, and 40% believe in head ache in table 3. My result was correlated with a previous study conducted, which shows that the most common symptoms of corona virus is fever 98,240 (64%), which is still not appreciable compare to the % that disagreed, which invariable depict low knowledge about information about COVID 19. The result agrees with Onyemekonwu and Meludu, (2022) who reported that there are some levels of community awareness regarding the symptoms of Covid-19. Majority of the participants (70%) of my study consider information about practicing hand washing as a precautionary measure, 59% reported that the usage of facemask as a protective measure was learnt from information available, 58.1 said they wear hand gloves as a preventive measure to corona virus inversion. 57.1 agreed on avoiding hand shaking as a preventive measure to combat COVID 19, About not using sanitizers, participants shared different views like unavailability or lack of it or as an extra expenses, hence 49.5% of the participant agreed to it. 54% of the participant believe that social distancing could benefit much when practiced, 49% were practicing staying home, while majority was saying that for job or other tasks they cannot stay home. 30.9% were practicing hugging/hand shaking,

while majority is of the view that it is not their tradition and they are not habitual to such practice, and that it should be best avoided. 62.2% individuals shared their concern about touching nose, eyes and mouth, a lesser number of participants 28.8% showed carelessness about touching mouth, nose & eyes. A lesser number of participants 30% showed exercised avoidance while a large figure 55% considered it as a health important. 57.1% participants were practically using healthy diet as a protective measure against corona virus infection, they reported that they are aware of the facts that intake of vitamin C, and frequent use of fluid can help fight against COVID 19. In result of a past study similar to this study, showed 85% participants reported positive behaviour towards hand washing as an effective way to prevent corona virus infection, 70% use of facemask usage and 67% considered wearing gloves to be a preventive strategy. Another report affirms the regular usage of usage of hand sanitizer, hand washing & masking which invariable mean increasing concern of participant to personal hygiene measure primarily to avoid COVID 19 infection. 58% majority of participants reject vaccination, said it is a ploy by the authority to make them a “zombie” or die in few years time to reduce the world population and 64% of the sample size also affirm the avoidance of awareness campaign most especially when the campaigner’s are mostly woman, men seems to hold up to the ego and in certain culture it is unheard of mean to allow women to lead them. This is reflected in their behaviour and altitude significantly as most of the participant agreed with misinformation on COVID 19 pandemic represented one of the biggest challenges to global health. This study found that exposure to misinformation was negatively associated with information insufficiency, it is important to note that exposure to misinformation reduces current information knowledge, which results to lower information insufficiency. This agrees with WHO (2020) that several misconception influence the spread of Covid-19. Information insufficiency serve as a significant mediator of the relationship between misinformation exposure and information avoidance. It is evidence important to reduce exposure to incorrect information and to deliver evidence based health advisories. To this end government authorities should regularly monitor and clarify emerging information on various social media platforms to prevent public misperception and engagement in fake disease remedy or scenically unproven measure. Because misinformation during the current pandemic has raised many issued of concern regarding public health.

SUMMARY OF THE FINDINGS

From the above findings it was observed that; information about COVID 19 was inadequate for the sample population

1. Majority of the sample population, especially between age 31-69, opined that COVID 19 prevention protocol intervenes with their cultural belief system.
2. The majority of the sample population understands the signs & symptoms of COVID 19 and its community transmission from person to person.

CONCLUSION

The study depicts inadequate information on knowledge, negative attitude and behavior towards the prevention of corona virus, finding of this study suggests the adherence of COVID-19 prevention protocol be encouraged particularly among the vulnerable population, who may be at risk of contacting COVID-19 diseases. Pandemic education should be targeted at young and old people for the common good of the community knowledge of transmission and preventive measures should be improved in the general population.

The study highlights that the importance of preventive protocol of COVID-19 procedures would help to control negative belief and perception associated with control measures against COVID-19 pandemic. The crux of the study acknowledge that behavior, knowledge and practice about corona virus pandemic infection and prevention was found to be inadequate and unsatisfactory, hence it is urgent to strengthen community education on the symptoms and mode of transmission of corona virus infection in Delta State.

RECOMMENDATION

It is necessary to minimize exposure, incorrect information and to deliver evidence health based advisories. To this end, risk communicators and government authorities should continuously monitor and clarify emerging misinformation on various platform to prevent misperception and engagement in fake remedies. In regard, accuracy nudges should be top priority for the media platform to counter the role of misinformation during the current pandemic positively. The researcher recommends improved global healthcare policies and strategies to counteract misinformation to mitigate the impact of COVID-19. To counteract against the impacts of misinformation, it is essential to;

REFERENCE

1. Baumeister, H. (2019). Novel Corona virus. Indo American Journal of Pharmaceutical Science, 23(3), 6. <https://doi.org/10.5281/zenodo.1477753>
2. Chan, K., Luo, Y., Hu, A., Zhang L., and Zjao J. (2021). *Characteristics of Misinformation Spreading on Social Media during the COVID 19 Outbreak in China a Descriptive Analysis*. <https://doi.org/10.2147/RMHP.S312327>.
3. Noemi Anja Brog, Julia Katharina Hegy, Thomas Berger & Hansjörg Znoj (2021) *An internet-based self-help intervention for people with psychological distress due to COVID-19: study protocol for a randomized controlled trial*. *Trials*, 22: 171. <https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-021-05089-9>
4. Rizwan, T. (2020). Knowledge, Behavior and Practices of General Public Towards COVID 19 - a Study from Islamabad: *Journal of Global Bioethics Enquiry* 8(2).
5. Onyemekihian, F., Onyemekonwu, R. C. and Chisonum, M. (2022). Economic feasibility of private extension among small scale cassava farmers in Edo and Delta state, Nigeria. *FUDMA Journal of Agriculture and Agricultural Technology* 8 (2) 138-144.
6. Onyemekonwu, R. C. and Meludu, N. T. (2022). Enhancing Capacity of Agricultural Extension Officers for Sustainable Community in Post Covid-19. (In Anyogu, F. A., Eme, C. A. and Ogbodo, J. A. Eds), *Attaining Sustainable Development Goals in Families, Companies and*

Communities, Nnamdi Azikiwe University Book Series on Sustainable Development. Boldscholar Research Ltd, www.boldscholar.com. Pp 168 – 179

7. Onyemekonwu, R.C., Onemolease, E.A. and Ehiwario, F.A. (2019). Production Performance and Constraints Associated With Watermelon Farming in Delta State, Nigeria. *Journal of Agriculture and Food Environment* 6(1): 60-72
8. WHO. (2020). Corona virus Disease (2019). A & A Practice, 14(6), e011218; <https://doi.org/10.1213/xa.0000000000001218>