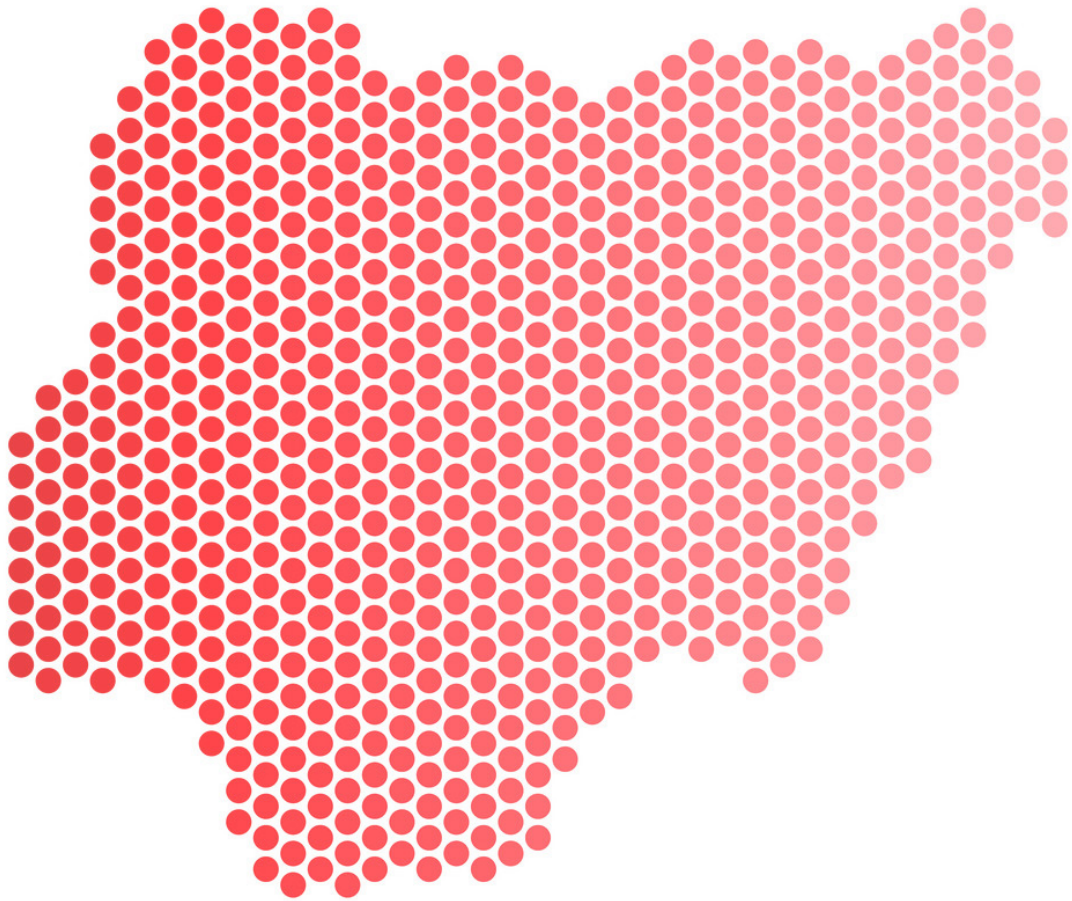




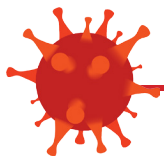
GET TECHNICAL PAPER VOLUME TWO



UNDERSTANDING FACTORS THAT INFLUENCE COVID-19 VACCINE ACCEPTABILITY IN NIGERIA

Authors:

Dr. Bobadoye Ayodotun & Alabi Ifeoluwa Yewande



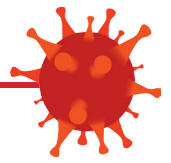
UNDERSTANDING FACTORS THAT INFLUENCE COVID-19 VACCINE ACCEPTABILITY IN NIGERIA

Abstract

Background:

Several countries have focused on developing COVID-19 vaccine; however, there has been little emphasis on COVID-19 acceptability in most developing countries. This study aimed to investigate the willingness of Nigeria to accept COVID-19 vaccine. Method: An online survey was conducted and about 1200 respondents were recorded within age range of 18 – 60 years old. Results: Religion has a significant influence on the willingness of the respondents to take the COVID-19 vaccine. The result shows that 61.7% of Muslim respondents are willing to take the COVID-19 Vaccine compared to 45.5% of Christian respondent and 25% of traditional worshippers that are willing to take the vaccine. Other factors such as occupation, age group, education level, gender, geo-political zones were non-significant. Factors that influence the willingness of respondents to accept the COVID-19 vaccine are lack of trust in government, financial reasons, non-involvement of Nigerians in the vaccine trails, religious beliefs and source of vaccine. Conclusion: To have successful vaccination process, the government needs to prioritize vaccine acceptance strategies which will include involvement of leaders and influencers such as religious leaders, community rulers.

Keywords: COVID-19, Vaccine, Acceptance, Nigeria



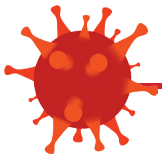
Introduction

The devastating global impact of COVID-19 has affected us all, and few will look back on 2020 with fond memories. With over 218 countries and territories affected, over 2million deaths, and more than 100 million confirmed cases as at January 26th, 20201. The COVID-19 pandemic is the biggest global challenge recorded in human history. In Africa, COVID-19 outbreak continues to evolve many new numbers of confirmed cases and deaths. As at 25th January 2021, there have been over 3.4 million cases in Africa and over 120,000 cases in Nigeria^{2,3}.

Although some drugs have been used to treat severe COVID-19 patients but no specific therapies have been approved for the cure of COVID-19⁴. However, the COVID-19 pandemic has proved that it is possible to develop, test and review multiple safe and effective vaccines against a new disease in less than a year. As at today the development of more than one vaccine candidate puts humanity in an extraordinarily promising position, both in terms of ending the COVID-19 pandemic and developing vaccines against other diseases, including future pathogens that could be a source of another pandemic in the future⁵.

Apparently, there are several clinical trials going on in some parts of the world⁶ but according to the African Academy of Sciences, only 2% of global clinical trials, for all types of vaccines are carried out in Africa. This may be challenging because people of different ethnic backgrounds could react differently to the vaccine⁷.

COVID-19 Vaccines are now being administered in North America, Europe, and few Asian countries, while Africa hopes to start sometimes in 2021. Until then, the continent of 54 countries will need to put the necessary measures in place. Policymakers and governments at the local, state, national and regional levels in Africa will have to assess the willingness levels of people to receive COVID-19 vaccine and identify the factors that could influence the perception rate⁸.



Methodology

Study

The survey was designed to obtain the response on the willingness of people to accept a potential COVID-19 vaccine in Nigeria. The questionnaire was prepared and evaluated to ensure that the respondents understand the questions and the questions were in line with our goal and targeted the objectives of the research. Data were collected using an electronic questionnaire via Google Form distributed on various online platforms. We designed a questionnaire that was administered online due to limitations of person to person contact as a measure to minimize the virus spread. The study population consisted of participants aged between 18 to 50 years and above.

The questionnaire contains the demographic characteristics and questions regarding to vaccine acceptance, willingness to participate in vaccine trials and risk perception of COVID-19 vaccine. Our inclusion criteria had adults above 18 years of age; those capable of using internet on a smart phone or computer; residents within the six (6) geopolitical zones of Nigeria and only those who gave consent to participate in the study.

Study Variables

The independent variables of this study were the demographic characteristics that included age, gender, education status, religion, occupation, and state of residence of the respondents. The dependent variables were knowledge of the vaccine, vaccine trial acceptance, preferred vaccine-access areas and risk perception of the vaccine.

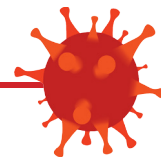
Sample Size Calculation

The sample size for this survey was 1200 individuals.

Statistical Analysis

Data was cleaned and analyzed using Chi-square at 0.05 (5 %) level of significance.

Design



Results and Discussion

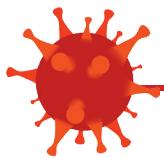
Demographic characteristics of the respondents

The survey presented a sample of 1200 valid responses from different parts of Nigeria (Figure 1). Regarding gender, there were 732 males and 468 females who participated in the study. Majority of the respondents were males which suggests that more males have online presence than females, although recent studies revealed that there is no significant difference between males and females in terms of internet usage⁹. Most of the respondents were between the age of 18 - 30 years (44.1 %). The reason for this high percentage of young people of this age bracket could be because of their frequent use of internet and social media platforms. This aligns with the report by Clemet (2020) that people between the ages of 24 and 35 years were the highest users of the internet¹⁰.

The level of education of respondents shows that, 53 % of the respondents had postgraduate education while 44% had First degree and only about 3% of the respondents had no tertiary education. The result on religious inclination of respondents shows that 76% are Christians, 22% and Muslim while the remaining 2% are either traditional worshippers or Eckankar. Most of the respondents are employed with 49% working in the private sector, 24% working with government, 16% are students, 1.4% are retired, 1.3% are policy makers and 11% of the respondents are unemployed. Majority of the respondents (36%) live in Lagos, 45% live in other South West states, 8.3% live in North central, 5.0% live in

The result on willingness of the respondents to accept COVID-19 vaccine is presented in table 2. The result shows that 45% of females are willing to accepted COVID-19 vaccine while 54.9% are reported that they will not accept the COVID-19 vaccine. The number of male with positive response is higher with 51.4% of male respondents indicating that they will accept the COVID-19 vaccine while 48.6% indicated that they will not accept the vaccine. Although the number of male with positive response is slightly higher than the number of females, analysis shows that gender does not have a significant influence of COVID-19 vaccine acceptability. These agrees with several studies conducted in Sub Saharan Africa that reported that gender does not significantly influence vaccine acceptability in Africa^{11, 12}

The result shows a trend between age of respondent and their willingness to take the COVID-19 vaccine. The result shows that 53.1% of respondents between the age of 18-30; 46.5% of the age bracket 31-40; 45.1% of age bracket 41-50 and 41.9% of respondent between 51-60% are willing to take the COVID-19



vaccine. The result although not significant shows that with increase in age, fewer respondents were willing to take the COVID-19 vaccine. This may be due to lack of enough information and communication about the COVID-19 vaccine and the negative social media coverage of COVID-19 vaccine in Nigeria. Research has shown that the willingness to take health risk reduces with age¹³ and with the negative social media coverage of COVID-19; older people may perceive taking the vaccine a risk they are not willing to take.

Religion has a significant influence on the willingness of the respondents to take the COVID-19 vaccine. The result shows that 61.7% of Muslim respondents are willing to take the COVID-19 Vaccine compared to 45.5% of Christian respondent and 25% of traditional worshippers that are willing to take the vaccine. This study aligns with report by Danilo (2020) who reported that religion is a strong contributing factor to acceptance of the vaccine¹⁴.

Generally, level education plays a significant role in decision making, especially in the health sector. However, this study shows that level of education does not significantly influence willingness to COVID-19 vaccine in Nigeria. The result shows that 51.6% Of respondent with first degree are willing to take the COVID-19 vaccine compared with 46.3% of post graduate, 50% of secondary school holders and 80% of respondents with no formal education are willing to take the vaccine. Occupation of respondent has no influence on COVID-19 vaccine uptake. The willingness to take COVID-19 vaccine is highest among policy maker and policy (75%), followed by retired workers (57.1%), students (56.5%), Private sector (50.7%) and the unemployed are the least with 45.6% of unemployed respondent willing to take the COVID-19 vaccine.

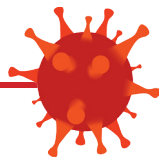
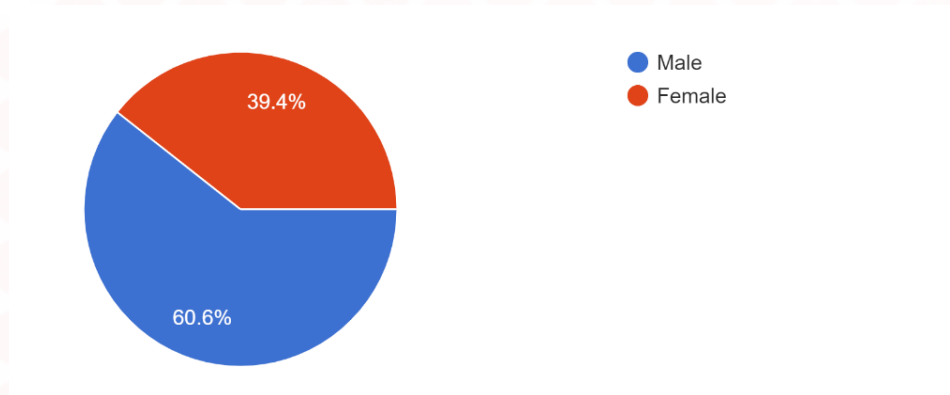
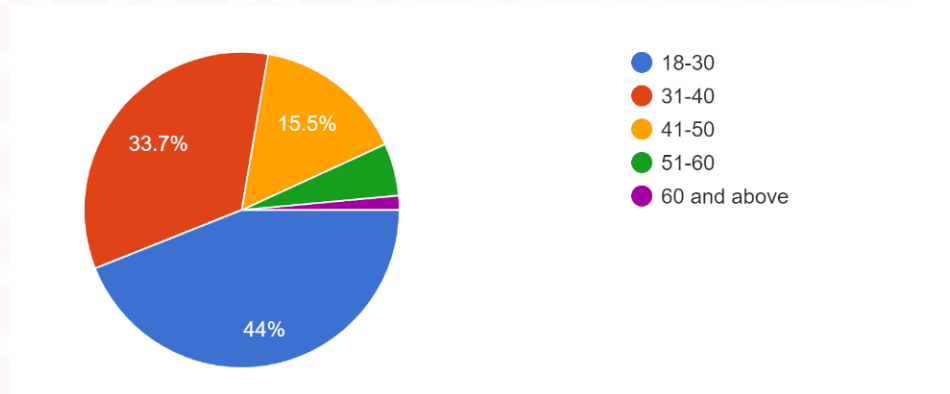


Figure 1: Summary of the Participants' Demographics Characteristics

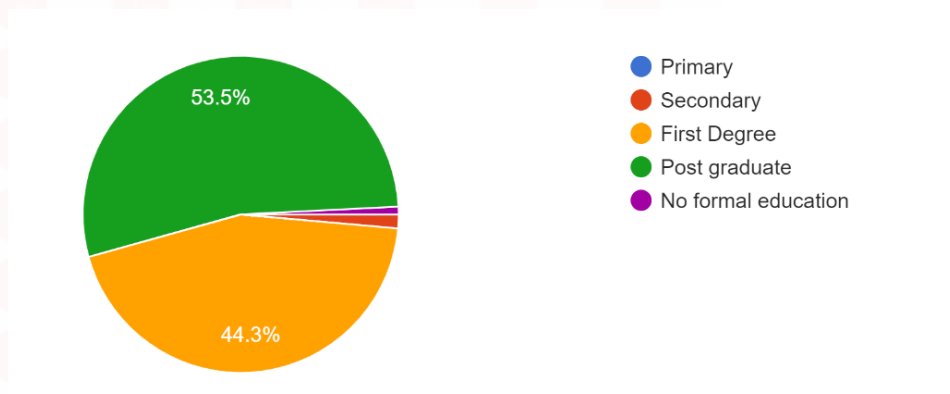
A. Gender



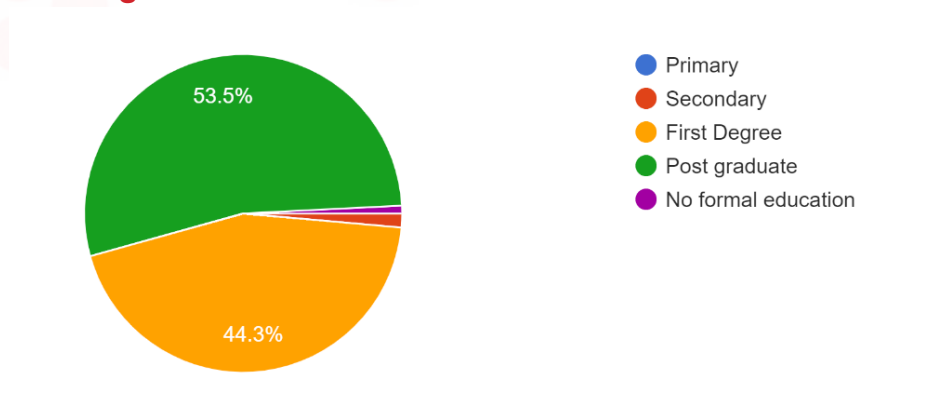
B. Age Group

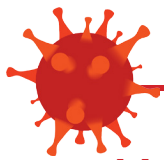


C. Education



D. Religion



**Table 1: Summary of the Participants' Demographics Characteristics**

| S/n | Other Variables | | Percentage (%) |
|------------|----------------------------|------------------------|-----------------------|
| F | Employment Status | Government Worker | 24.6% |
| | | Private sector | 49.8% |
| | | Retired | 1.4% |
| | | Student | 16.2% |
| | | Policymaker/politician | 1.3% |
| | | Unemployed | 11.3% |
| G. | Geo-political Zones | Lagos | 36.1% |
| | | North Central | 8.3% |
| | | North East | 1.4% |
| | | North West | 5.0% |
| | | South East | 0.7% |
| | | South South | 3.5% |
| | | South West | 45.0% |

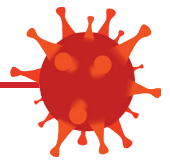
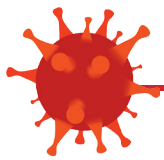


Table 2: Analysis of responses regarding acceptance of COVID-19 vaccine among different variables

| Variables | | % No | % Yes | P-value | Level of Significance (5%) | Level of Significance (10%) |
|---------------------------|---------------------|------|-------|---------|----------------------------|-----------------------------|
| Gender | Female | 54.9 | 45.1 | 0.14 | Not significant | Not significant |
| | Male | 48.6 | 51.4 | | | |
| Age | 18-30 | 46.9 | 53.1 | 0.48 | Not significant | Not significant |
| | 31-40 | 53.5 | 46.5 | | | |
| | 41-50 | 54.9 | 45.1 | | | |
| | 51-60 | 58.1 | 41.9 | | | |
| Religion | Christianity | 54.5 | 45.5 | 0.003 | Significant | Significant |
| | Islam | 38.2 | 61.7 | | | |
| | Traditional | 75.0 | 25.0 | | | |
| Education | First Degree | 48.4 | 51.6 | 0.32 | Not significant | Not significant |
| | No formal education | 20.0 | 80.0 | | | |
| | Post graduate | 53.7 | 46.3 | | | |
| | Secondary | 50.0 | 50.0 | | | |
| Geopolitical Zones | Lagos | 52.9 | 47.1 | 0.80 | Not Significant | Significant |
| | North. Central | 54.2 | 45.8 | | | |
| | Northeast | 50.0 | 50.0 | | | |
| | Northwest | 44.8 | 55.2 | | | |



| | | | | | | |
|-------------------|-------------------------|------|------|------|-----------------|-----------------|
| | South East | 75.0 | 25.0 | | | |
| | South South | 60.0 | 40.0 | | | |
| | South West | 48.6 | 51.4 | | | |
| Occupation | Government Worker | 59.1 | 40.9 | | | |
| | Policy maker/politician | 25.0 | 75.0 | 0.19 | Not significant | Not significant |
| | Private Sector | 49.3 | 50.7 | | | |
| | Retired | 42.9 | 57.1 | | | |
| | Student | 43.5 | 56.5 | | | |
| | Unemployed | 54.4 | 45.6 | | | |

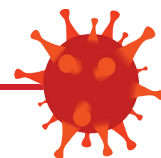
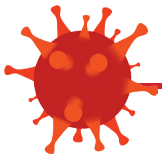


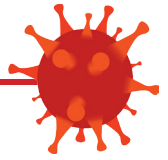
Table 3: Factors determining willingness of respondents to take COVID-19 vaccine

| S/N | Factors determining COVID-19 acceptance | % respondent |
|-----|--|--------------|
| 1 | Lack of trust in government | 46.9% |
| 2 | Nigerians not involved in vaccine trails | 23.9% |
| 3 | Personal preference | 21.4% |
| 4 | Financial reasons | 18.2% |
| 5 | Religious belief | 4% |
| 6 | Source of the vaccine (USA, China, Russia etc) | 2% |



Discussion contd.

It is clear that from table 3 that trust is an intrinsic component of any successful COVID-19 vaccine uptake in Nigeria. Result shows that lack of trust in government is strongly associated with COVID-19 vaccine refusal and can contribute significantly to public refusal of the vaccine in Nigeria.¹⁵ Lessons learned from previous infectious disease outbreaks and public health emergencies such as HIV and Ebola; remind us that trusted sources of information and guidance are fundamental to disease control¹⁶. Clear and consistent communication by government officials is crucial to building public confidence in vaccine programs. This includes explaining how vaccines work, as well as how they are developed, from recruitment to regulatory approval based on safety and efficacy. Effective campaigns should also aim to carefully explain a vaccine's level of effectiveness, the time needed for protection (with multiple doses, if required) and the importance of population-wide coverage to achieve community immunity. Other factors that determine acceptability of COVID-19 acceptability among respondents include inclusion in vaccine trials, financial reasons, religious beliefs and source of the vaccine. Absence of Nigeria and other Africa countries in most of the COVID-19 vaccine trials is a major challenge to the country and region. Sub Saharan Africa displays an incredible amount of genetic diversity. It is difficult to generalize trials from COVID-19 vaccine if the genetic diversity from Africa is not well represented.

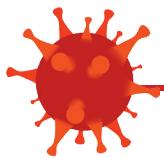


Conclusion

Vaccination is an effective process for the prevention of COVID-19 diseases and it is becoming a necessity for people to vaccinate. However, to have the vaccine accepted by Nigerians, there are necessary procedures to put in place. Credible and culturally informed health communication is vital in influencing positive health behaviours as has been observed with respect to encouraging people to cooperate with COVID-19 control measures. This includes preparing the public and leaders of civic, religious and fraternal organizations that are respected within various sectors of society and local communities, as well as the private sector, for a mass vaccination program with credible spokespeople, local engagement, accurate information and technological support.

Study Limitations

The study being online based could also have omitted those without phones, computer and internet.



References

1. Worldometer.info (2021). <https://www.worldometers.info/coronavirus/>
2. Africa Centre for Disease Control (2021). <https://africacdc.org/covid-19/>
3. Nigeria Centre for Disease Control (NCDC), (2021). <https://covid19.ncdc.gov.ng/report/>
4. Cao B, Wang Y, Wen D, Liu W, Wang J, Fan G, (2020). A Trial of lopinavir/ritonavir in adults hospitalized with severe Covid-19. *N Engl J Med.*382:1787–99. doi: 10.1056/NEJMoa2001282.
5. Lurie N, Saville M, Hatchett R, Halton J. (2020). Developing Covid-19 vaccines at pandemic speed. *N Engl J Med.* 382:1969–73. doi: 10.1056/NEJMp2005630.
6. Snyder C.M, Hoyt K, Gouglas D, Johnston T, Robinson J. (2020). Designing Pull Funding For A COVID-19 Vaccine. *Health Aff.* Jul; doi: 10.1377/hlthaff.
7. Greenwood B. (2014). The contribution of vaccination to global health: past, present and future. *Philos Trans R Soc B Biol Sci* [Internet].
8. Statista.com (2021). <https://www.statista.com/statistics/1196071/covid-19-vaccination-rate-in-europe-by-country/>
9. Odell P.M, Korgen K.O, Schumacher P, Delucchi M. (2000). Internet Use Among Female and Male College Students. *CyberPsychology Behav* [Internet]. Oct; 3(5): 855-62.
10. Clements K. (2020). Acknowledging All Learning: Alternative, Micro, and Open Credentials. In: Bishop M.J., Boling E., Elen J., Svihla V. (eds) *Handbook of Research in Educational Communications and Technology*. Springer, Cham. https://doi.org/10.1007/978-3-030-36119-8_27.
11. Isaac E, Patricia D, and Edmund M.B. (2020). Acceptance and Risk Perception of COVID-19 Vaccine in Uganda: A Cross Sectional Study in Western Uganda. *Research Square*.
12. Aryn A. M, SarahAnn M, (2020). Determinants of COVID-19 vaccine acceptance in the US *Journal of EClinical Medicine*, 8:57.
13. Buonsenso, D, Malorni, W, Sisti, G.L, Moscato, U. (2020). COVID-19 and Religion: Risks and Opportunities. *Preprints*, 2020120173. doi: 10.20944/preprints202012.0173.v1.
14. Harapan H, Abram L, Amanda Y. (2020). Acceptance of a COVID-19 Vaccine in Southeast Asia: A Cross-Sectional Study in Indonesia. *Frontiers in Public Health*, 8:381.
15. Hovland, C. I. & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opin. Q.* 15, 635.
16. Siegrist, M. & Zingg, A. (2014). The role of public trust during pandemics: implications for crisis communication. *Eur. Psychol.* 19, 23–32.



FOLLOW US

facebook.com/GETConsortium
twitter.com/GETConsortium
instagram.com/GETConsortium

FOR ENQUIRERS

bobadoyed@getafrica.org
admin@getafrica.org

FIND OUT MORE ABOUT THE ORGANIZATION

Copyright © February 2021 by the Global Pathogens Treatment Consortium. All rights reserved. Citation, reproduction and or translation of this publication, in whole or in part, for educational or other non-commercial purposes is authorised provided the source is fully acknowledged.