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SHORT REPORT



Public perception of radio campaign messages in managing COVID-19 pandemic in selected states, Nigeria

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ABSTRACT

The study examined public perception of Nigeria Center of Disease Control's (NCDC) radio campaign messages in managing the Covid-19 pandemic in three selected states in the south-western part of the country. A survey research design was adopted with a questionnaire as a data collection instrument. A sample size of 400 respondents was chosen through the multistage approach. The study revealed that the residents in selected states in South-Western Nigeria reported exposure to radio campaign messages on COVID-19 preventive measures and perceived that the messages influenced the awareness and adoption of COVID-19 preventive measures. It was recommended that behavioral change communication experts and public health officers at all levels should leverage the reliability and spread of radio among the populace to disseminate public health issues.

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COVID-19; perception; NCDC; pandemic; radio campaign; COVID-19 preventive measures

Introduction

COVID-19 is a major issue that Nigeria government battles with since 2020. To curb the spread of the virus, the Federal government initiated several responses, including media campaigns to fight the spread of COVID-19 in Nigeria. Leading the frontlines is the Federal Ministry of Health, supported by the Presidential Task Force (PTF) for the Control of the COVID-19 and NCDC with the task of formulating and implementing policies and preventive measures, including inter-state and international travel bans, stay at home orders, restrictions on mass gatherings, closure of schools and businesses and cessation of non-essential movements.¹ Also, NCDC, the government agency saddled with the responsibility of curbing the spread of COVID-19, embarked on informational and media campaigns, including radio campaigns, to create awareness of COVID-19 preventive and safety measures.²

On the premise that the media is responsible for arming the public with vital information during a health crisis like the COVID-19 pandemic, media campaigns, particularly radio campaigns, are deployed to influence the public's health behaviors and perceptions.³ Several studies (e.g., reference 8) have found that media campaigns on public health crises like the Ebola outbreak and, most recently, the COVID-19 pandemic help prevent diseases and can moderately influence health behavior. For instance, during the Ebola outbreak, the media influenced the public's awareness of the disease and the adoption of preventive measures.⁴

Health communication scholars have deployed models and theories to explain how exposure to mass media messages promoting health influences health behavior. One of such

models is the Influence of Presumed Influence (IPI) model (see reference),⁵ which posits that individuals believe media campaign messages can change opinions and behaviors. Their perception of media influence motivates them to change their opinions and behavior on the media topic. Hinged on this notion, the current study examined the perceived influence of NCDC's COVID-19 radio campaign messages on awareness and adoption of COVID-19 preventive measures among residents in South-western Nigeria.

The Influence of Presumed Influence model is an indirect media effect model that explains the underlying mechanism of media messages and their impact on behavior. It hypothesizes that an individual's perception of media effects can influence their behaviors.⁶ Presumed exposure and presumed influence are the two major components of this model, and its dynamics are in two stages. The first stage is the general belief that the media especially the radio has a wide reach, and individuals tend to extrapolate the small sample of media messages they are exposed to as representative of media contents.⁷ For instance, an individual's exposure to media messages about smoking predicts their perception of others' exposure to similar messages.⁸ In the second stage, the general belief of a wide media reach and media exposure leads to the presumed influence of the media messages on behavior. For example, adolescents who watch sex-related content and presume their peers are exposed to similar content perceive the media as influencing behavior. Hence, the model expects that exposure to persuasive media messages impacts the perceived influence of those messages on attitude and behavior.^{9,10}

Table 1. Chi-Square tests for association in Table 1 shows the results between gender and exposure to NCDC's campaign messages.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.892 ^a	4	.001
Likelihood Ratio	19.410	4	.001
Linear-by-Linear Association	4.296	1	.038
N of Valid Cases	400		

^a0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.45.

Table 2. Correlations between gender and awareness of COVID-19 preventive measures is presented in Table 2.

		Awareness	Sex
Awareness	Pearson Correlation	1	-.157**
	Sig. (2-tailed)		.002
	N	400	400
Sex	Pearson Correlation	-.157**	1
	Sig. (2-tailed)	.002	
	N	400	400

**Correlation is significant at the 0.01 level (2-tailed).

Table 3. Correlations between gender and adoption of COVID-19 preventive measures is presented in Table 3.

		Sex	Adoption
Sex	Pearson Correlation	1	-.243**
	Sig. (2-tailed)		.000
	N	400	400
Adoption	Pearson Correlation	-.243**	1
	Sig. (2-tailed)	.000	
	N	400	400

**Correlation is significant at the 0.01 level (2-tailed).

The current study focuses on the second stage of the model, which posits that an individual's perceived notion of media reach and exposure influences the perception of media influence on behavior. There is evidence of presumed media influence on health promotion behaviors. For example, the presumed influence of physical activity messages influences attitude and behavior toward physical activity.¹¹ Considering the COVID-19 pandemic and the efforts of the government to create awareness and encourage the adoption of COVID-19 preventive measures through media campaigns, this study expects that the presumed influence of COVID-19 radio messages will influence the awareness and adoption of COVID-19 preventive measures. The model explains the relationship between exposure to radio messages on COVID-19 and its presumed influence on behavior—awareness and adoption.

Specifically, the study sought to find out how often the residents in the selected states were exposed to NCDC's radio campaign messages on COVID-19; identify the perceived influence of NCDC's radio campaign on the awareness of COVID-19 preventive measures among residents in the selected states, and assess the perceived influence of NCDC's radio campaign on the adoption of COVID-19 preventive measures among residents in selected states.

Materials and methods

This is a cross-sectional descriptive survey conducted in three purposively selected states in the South-West geopolitical zone of Nigeria: Lagos, Oyo and Ogun states. The descriptive survey

method was chosen based on researcher¹² observation that it is one of the best methods available to social researchers interested in collecting original data for describing a population too large to observe directly.

Selection of state

Purposive sampling was used to select the three states used in the study. Purposive sampling is used in situations where desired traits are visible in the population. Lagos was purposively chosen because the state recorded the first confirmed Coronavirus disease (COVID-19) on the 27th of February 2020.¹³ Ogun and Oyo States were chosen because of their proximity to Lagos State and because the residents of the States were at the risk of contracting the virus as a result of the spillover from Lagos State. Oyo State confirmed its first case in March 2020,¹⁴ while Ogun state became a state at risk of the virus when the first carrier of the virus, an Italian who came into Nigeria through Lagos, traveled to Ogun State to visit a factory in Ewekoro, a town in Ogun State.¹⁵ The data were generated based on the 3.5% population increase by 2016 as specified by the 2006 population census.¹⁶

Sample size

To determine the sample size of the study, Taro Yamane formula was used. The calculation is presented below:

Therefore;

$$n = \frac{4,900,000}{1 + 4,900,000(0.05)^2}$$

$$= 399.9$$

Questionnaire

The 15-item questionnaire was divided into four sections containing the measures explained below.

Exposure to NCDC's radio campaign messages

Respondents' exposure to NCDC's radio campaign messages was assessed through two items created for this study. Respondents were asked questions like 'from which media did you first hear about COVID-19 preventive measures?' with a list of information sources (e.g. newspaper, television, radio and others) as response options. Also, respondents were asked 'how often do you listen to the radio broadcast on Covid-19?' with ordered response options ranging from 'Never', 'Often' to 'Always'.

Perceived influence of radio campaign messages on awareness of COVID-19 preventive measure

Items used to measure this variable include: "I became aware that sanitizing my hands with alcohol-based sanitizers or washing my hands with soap and water prevents COVID-19 transmission," "I learned that avoiding handshake, hugging, kissing can prevent coronavirus as disseminated on radio," and "I learned that the use of facemasks is a preventive measure that helps reduce the spread of COVID-19." Respondents indicated

responses on a 5-point scale of “Strongly Agree” to “Strongly Disagree” (5 = strongly agree, 3 = neither agree nor disagree, 1 = strongly disagree).

Perceived Influence of radio campaign messages on adoption of COVID-19 preventive measure

Items used to measure this variable include: “I avoid handshakes, hugging and kissing to prevent COVID-19 transmission,” “I use a face mask all the time, especially in public places, to prevent COVID-19 transmission,” “I frequently sanitize my hands with alcohol-based sanitizer or wash my hands with soap and water to prevent COVID-19 transmission,” and “I regularly observe social and physical distancing measure to prevent contracting and spreading COVID-19”. Respondents indicated responses on a 5-point scale of “Strongly Agree” to “Strongly Disagree”.

Four hundred copies of the questionnaire were self-administered to the participants selected across six randomly selected local government areas: Alimosho, Ikeja, Egbeda, Akinyele, Abeokuta North and Abeokuta South at convenient spots like motor parks, markets and local government areas. The participants verbally gave informed consent to participate in the study and filled out the questionnaire on paper within 15 min.

A pilot study was conducted on the 20 respondents drawn from one of the LGA's selected for the study to examine the internal consistency of the instrument using Cronbach's Alpha. The result of the analysis for the two items in Section B in the questionnaire was $r = 0.61$, the analysis of the three items in Section C was $r = 0.60$, and the analysis of the four items in Section D was $r = 0.66$. This analysis shows that the instrument is reliable because Cronbach's Alpha statistic greater than 0.60 is considered good and acceptable. Descriptive statistics were used to analyze the data, including the chi-square Test of Independence and Pearson product-moment correlation coefficient deployed to test the association between the respondents' gender and exposure to NCDC's radio campaign messages and its perceived influence on awareness and adoption of COVID-19 preventive measures.

Results

The current study examined public perception of NCDC's radio campaign messages in managing the COVID-19 pandemic in three selected states in the Southwestern part of the country. The study sought to identify the public's exposure to NCDC's radio campaign messages and its perceived influence on the awareness and adoption of COVID-19 preventive measures. First, respondents were asked to indicate the first media platform they heard about COVID-19 preventive measures. In response to this, 180 (45%) indicated television, 172 (43%) indicated radio, 6 (1.5%) indicated newspaper and 42 (10.5%) indicated other media platforms. Therefore, majority of the respondents indicated that they first heard about COVID-19 preventive measures on television, followed by radio.

Also, respondents were asked to indicate to what extent they were exposed to NCDC's radio campaign message. Data from the study reveals the frequency of respondents' exposure to

NCDC's radio campaign on COVID-19, with respondents indicating that they were often exposed to NCDC's radio campaign on COVID-19 ($M = 3.15$, $S.D = 1.47$).

To ascertain the perceived influence of NCDC's radio campaign on the awareness of COVID-19 preventive measures, respondents reported their agreement with three statements on a five-point scale (5 = strongly agree, 3 = undecided, 1 = strongly disagree). For the first statement, “I became aware that sanitizing my hands with alcohol-based sanitizers or washing my hands with soap and water prevents COVID-19 transmission,” 167 (41.8%) respondents strongly agreed, 140 (35%) agreed, 42 (10.5%) strongly disagreed, 27 (6.8%) disagreed, and 24 (6%) were undecided about the statement. Hence, majority of the respondents strongly agree that NCDC's radio campaign informed them about the preventive measure of using hand sanitizers, soap and water to keep their hands clean and prevent the spread of COVID-19.

For the second statement, “I learned that avoiding handshake, kissing, and hugging prevents COVID-19 transmission as disseminated on radio,” 203 (50.8%) respondents agreed, 152 (38%) strongly agreed, 32 (8%) were undecided, 8 (2%) disagreed and 5 (1.3%) strongly disagreed with the statement. Hence, majority of the respondents agree that NCDC's radio campaign made them aware of the need to avoid close contact with others through a handshake, hugging and kissing to prevent COVID-19 transmission.

The third statement is, “I learned that the use of facemasks reduces the spread of COVID-19.” 241 (60.3%) respondents strongly agree, 141 (35.3%) agree, 10 (2.5%) are undecided and 8 (2%) strongly disagreed with the statement. The implication is that majority of the respondents agree that NCDC's radio campaigns made them aware of the use of facemasks as a COVID-19 preventive measure.

To ascertain the perceived influence of NCDC's radio campaign on the adoption of COVID-19 preventive measures by residents in South-Western Nigeria, respondents reported their agreement with four statements on a five-point scale (5 = strongly agree, 3 = neither agree nor disagree, 1 = strongly disagree). For the first statement, “I avoid handshakes, hugging and kissing to prevent COVID-19 transmission,” 252 (62.8%) respondents strongly agreed, 126 (31.4%) agreed, 13 (3.2%) were undecided, and 9 (2.2%) strongly disagreed with the statement. Hence, majority of the respondents strongly perceived that NCDC's radio campaign influenced their avoidance of handshakes, hugging and kissing to prevent COVID-19 transmission.

For statement two, “I use face mask all the time, especially in public places to prevent COVID-19 transmission,” 215 (53.6%) respondents agree, 144 (35.9%) respondents strongly agree, 38 (9.5%) are undecided, while 3 (0.7%) disagree with the statement. Therefore, majority of the respondents perceived that NCDC's radio campaign made them use face masks always in public places as a COVID-19 preventive measure.

Regarding statement three, “I frequently sanitize my hands with alcohol-based sanitizer or wash my hands with soap and water to prevent COVID-19 transmission,” 175 (43.6%) respondents strongly agree, 126 (31.4%) agree, 58 (14.5%) are undecided, 40 (10%) disagree and 1 (0.2%) strongly disagree.

Hence, most of the respondents strongly perceive that NCDC's radio campaign on COVID-19 preventive measures made them sanitize their hands with sanitizers and soap and water.

For statement four, "I regularly observe social and physical distancing measures to prevent contracting and spreading COVID-19," 189 (47.1%) respondents strongly agree, 121 (30.2%) agree, 46 (11.5%) are undecided, 17 (4.2%) disagree and 27 (6.7%) strongly disagree. This implies that majority of the respondents strongly perceive that NCDC's radio campaign made them observe social and physical distancing as a COVID-19 preventive measure.

Finally, the chi-square Test for Independence and Pearson product-moment test were used to test the association between the respondents' gender and reported exposure to NCDC's radio campaign messages and perceived influence on awareness and adoption of COVID-19 preventive measures correlation coefficient, respectively. At a preset level of significance of 0.01, results show a statistically significant association between respondents' gender and exposure to NCDC's radio campaign messages on COVID-19 [$\chi^2(4) = 17.892$, $p = 0.001$] as more females were exposed to the radio campaign messages than males. Regardless, results show a statistically significant association between respondents' gender and awareness ($r = -.157$, $n = 400$, $p = .001$) as well as the adoption ($r = -.243$, $n = 400$, $p = .001$) of COVID-19 preventive measures as more males than females perceived the radio campaign messages influenced their awareness and adoption of COVID-19 preventive measures.

Discussion

This study sought to examine the exposure of residents in South-Western Nigeria to NCDC's COVID-19 radio campaign messages and its perceived influence on awareness and adoption of COVID-19 preventive measures. The study shows that majority of the respondents reported exposure to radio campaign messages on COVID-19. However, they reported television as the first medium that informed them about COVID-19 preventive measures. This is in tandem with previous studies,^{2,17} which reveal that Nigerians reported exposure to media messages on COVID-19 preventive measures, mostly derived from traditional media, including radio and television.

The results also show that majority of the respondents reported that they perceived NCDC's radio campaign messages made them aware of COVID-19 preventive measures like sanitizing hands with soap and water and alcohol-based sanitizers, avoiding contact and maintaining social distancing with others, and using facemasks regularly to prevent the spread of COVID-19. The uses and gratification theory can best explain this finding that exposure to radio messages can influence the awareness of COVID-19 preventive measures. This finding agrees with (see reference)¹⁸ the proposition that radio functions as a medium for disseminating general information, entertainment and public health information, as witnessed during the Ebola outbreak in 2014 and the COVID-19 pandemic in 2020. The finding also lends credence to (see reference)¹⁹ the proposition that during a public health

international emergency like the COVID-19 outbreak, the media in no small measure works along with health professionals in creating awareness.

The study also shows that residents in South-Western Nigeria reported that they perceived that NCDC's COVID-19 radio campaign messages made them adopt COVID-19 preventive measures. This is in tandem with the submission (see reference)²⁰ that those who listen to radio are more likely to adopt the health information disseminated via radio. In comparison to previous research, which revealed that exposure to television campaigns on COVID-19 preventive measures resulted in low compliance to the campaign messages,²¹ the findings of this study reveal that the respondents reported that they perceived radio campaign messages on COVID-19 as influencing their adoption of preventive measures than television campaign messages. Also, findings revealed that more women reported exposure to NCDC's radio campaign messages, aligning with previous findings that women are more likely to seek health information compared to men.²² However, the study revealed that more males than females reported becoming aware and adopting COVID-19 preventive measures despite more females reporting exposure to COVID-19 radio campaigns than males. The finding that female respondents reported the awareness and adoption of COVID-19 preventive measures as low is interesting and raises public health concerns. Evidence shows that women are primary caregivers, particularly within the Nigerian socio-cultural context. This demographic's low uptake of COVID-19 preventive measures has health implications for the individuals they care for. This finding, therefore, suggests that greater emphasis be placed on media campaigns and health education interventions targeted at women to improve their awareness and adoption of COVID-19 preventive measures.

Based on the outcome of the study, the following are recommended—behavioral communication experts should continue to utilize radio and other media platforms accessible to the people to carry messages targeted at the masses. Health workers and citizens should continue to utilize radio as a source of public information on the COVID-19 pandemic and any other public health issues in the future. Academic researchers and students in various higher institutions should expand the scope of this study by looking at the influence of television and other media of mass communication on the awareness and adoption of COVID-19 messages. The study is limited to radio campaign messages on COVID-19 in three selected states in Nigeria. Therefore, the study should be replicated in other parts of the country to see its outcome.

The sudden advent of the highly infectious COVID-19 disease calls for urgent information sharing with the people to forestall the spread of the deadly disease and provide information on how to manage the disease. This study sought to examine the perceived influence of COVID-19 radio campaign messages on the awareness and adoption of COVID-19 preventive measures among residents in South-Western Nigeria. This study revealed that residents in South-Western Nigeria reported exposure to radio campaign messages on COVID-19 preventive measures. Also,

the respondents reported that they perceived NCDC's radio campaign messages influenced their awareness and adoption of COVID-19 preventive measures. However, compared to men, more women reported exposure to NCDC's radio campaign messages on COVID-19. Despite the low exposure reported, more men reported awareness and adoption of COVID-19 preventive measures than women.

Future research should be carried out on the perceived influence of other media, e.g. television, campaigns on the awareness and knowledge of COVID-19 preventive measures. This study was limited to the influence of radio campaign messages in managing the COVID-19 pandemic in three selected states in Southwestern Nigeria. Hence, further research should be conducted in other states in Southwestern Nigeria and perhaps other geopolitical parts of Nigeria.

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Consent form

The authors verbally sought the consent of the participants and explained the essence of the study to them before copies of the questionnaire were administered to them.

Ethical approval

No ethical approval was obtained for the study.

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Appendix A

QUESTIONNAIRE

Dear Respondents,

We are conducting a research entitled: Influence of NCDC's Radio Campaign Messages on managing Covid-19 Pandemic on three selected states in South-Western Nigeria. Please feel free to express your opinion as issues raised will be treated with confidentiality and used responsibly for research purpose only.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

- (1) What is your age range? 18–25 years 26–40 years 41–60 years 61 years and above
- (2) Sex: Male () Female ()
- (3) Marital status (a) Single (); (b) Married (); (c) Divorced () (d) Widow ()
- (4) Religion (a) Christian (); (b) Muslim (); (c) Traditional (); (d) No religion ()
- (5) Educational status (a) No education (); (b) Primary education (); (c) Secondary education (); (d) Tertiary education ()
- (6) Occupational status (a) Trading (); (b) Civil servant (); (c) Driver (); (d) Others specify _____

SECTION B: EXPOSURE TO RADIO CAMPAIGN ON COVID-19

- (7) From which media did you first hear about COVID-19 preventive measures?
(a) Newspaper () (b) Television () (c) Radio () (d) Others
- (8) How often do you listen to radio broadcast on Covid-19?
(a) Always () (b) Very often () (c) Often () (d) Never () (e) Seldom ()

Section C: Perceived Influence of Radio Campaign Messages on Awareness of Covid-19 Preventive Measures

Indicate your level of agreement with the statements provided below on how NCDC's radio campaigns made you aware of COVID-19 preventive measures.

SA = Strongly Agree, a = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree.

Statements	SA	A	U	D	SD
9. I became aware that sanitizing my hands with alcohol-based sanitizers or washing my hands with soap and water prevents COVID-19 transmission					
10. I learned that avoiding hand shake, hugging, kissing can prevent corona virus as disseminated on Radio					
11. I learned that the use of facemasks is a preventive measure that helps reduce the spread of COVID-19					

SECTION D: Perceived Influence of Radio Campaign Messages on the Adoption of Covid-19 Preventive Measures

Indicate your level of agreement with the statements provided below on how NCDC's radio campaigns made you adopt COVID-19 preventive measures

SA = Strongly Agree, a = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree.

Statements	SA	A	U	D	SD
12. I avoid handshakes, hugging and kissing in order to prevent COVID-19 transmission.					
13. I use face mask all the time, especially in public places to prevent COVID-19 transmission.					
14. I frequently sanitize my hands with alcohol based sanitizer or wash my hands with soap and water in order to prevent COVID-19 transmission.					
15. I regularly observe social and physical distancing measure so as to prevent, contracting and spreading of COVID-19 pandemic.					