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Assessment of media reportage of monkeypox in southern Nigeria

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Abstract

Monkeypox is a zoonotic viral disease. Media campaigns are planned to create awareness about the disease. This is because mass media is often the leading source of information and mobilization during important health issues or crisis. The main objective of this study was to assess the media coverage of monkeypox outbreak in Nigeria.

The study adopted a cross-sectional survey of residents in Southern Nigeria. A total of 600 respondents were sampled for this study through a multi-stage cluster random sampling technique. Research assistants helped in collecting data from respondents through structured questionnaire. The data collected was analyzed using percentages, mean score, and univariate analysis of variance (ANOVA).

Respondents had little or no knowledge of monkeypox virus, its nature, mode of transmission, and prevention mechanism (2.30 ±.918, P=.000). Respondents stated that they learnt about the virus through friends and social institutions instead of media (4.44 ±.945, P=.006). Media failed to create effective and comprehensive awareness campaigns to mobilize the public (1.86±1.196, P=.001), while inappropriate and insufficient media programs and lack of funds were blamed for media ineffectiveness (4.18±1.352, P=.004).

The outbreak of monkeypox virus is a public health concern in Nigeria. Media campaigns are planned to raise awareness about the disease; however, these campaigns have not demonstrated effectiveness in changing people's health behavior toward monkeypox. Media, health professionals, and government should synergize to promote a consistent health policy for the control and prevention of monkeypox virus.

Abbreviations: % = percentage, ND = National Diploma, PGD = Postgraduate Diploma, WAEC = West African Examination Certificate.

Keywords: disease outbreak, media reportage, monkeypox, Nigeria

1. Introduction

Monkeypox is a zoonotic viral disease caused by the monkeypox virus belonging to the *Orthopoxvirus* genus of the Poxviridae family.[1,2] It was first isolated in 1958 at the State Serum Institute (SSI) in Copenhagen, Denmark, among colonies of monkeys kept for research, but its human infestation was identified first in 1970 in the Democratic Republic of the Congo (the DRC) in a 9-year-old boy.[3] Ten cases of monkeypox outbreak occurred in Western African countries, that is, Sierra Leone, Nigeria, Liberia, and Corte d'Ivoire; 404 cases in the Congo Basin countries, Cameroon, Central African Republic, and the Democratic Republic of the Congo (the DRC), with 10% fatality.[4–6] There were human cases as of August 2003 and subsequent multiple others cases across 6 states in the United States.[7–9] It spreads in African countries, particularly Central African Republic and the Democratic Republic of the Congo, at the rate of more than 1000 suspected cases per year since 2005 is highly endemic and sporadic.[1] Similar experience prevailed among West Africa countries, such as Nigeria, Liberia, and Sierra Leone, between 2015 and 2018. The Nigerian Centre for Disease Control (NCDC) reported 269 cases of monkeypox in 26 states with 7 deaths in a year, that is, from September 2017 to September 2018.[10] The signs and symptoms associated with the viral infection include fever accompanied by fatigue, headache, diarrhea, itching, and maculopapular rashes, which develop into macules, papules, vesicles, pustules, crusts, and scab before falling off.[7] According to WHO,[11] its fatality ratio ranges from 1% to 10%.

Previous studies identified its vectors as pet mammals, predominantly rodents, such as tree species of squirrels, Gambian pouched rats, striped mice, and prairie dogs.[3,12] Monkeypox is also transmitted by humans through direct and prolonged face-to-face contact, vomit, and direct contact with body fluids and

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blood of an infected person.[13] This has serious consequences for Nigerians due to their certain socio-cultural practices and behaviors, like hugging, handshakes, and elaborate celebrations and gatherings, such as meetings, clustered tenements, and clustered religious practices, among others.

Although antiviral drugs, such as vaccinia-immune globulin, cidofovir, and brincidofovir, are used against poxviruses in animal and in vitro studies, medical professionals and multiple tests reveal that monkeypox has no specific curative treatment but is managed through symptomatic and supportive care which include prevention and treatment of secondary bacterial infections.[3,10] Tecovirimat, which is being used for the treatment of smallpox, is also being applied to treat patients infected by monkeypox virus.[14] Therefore, the efforts to combat the outbreak of the virus focus on the prevention of transmission through appropriate respiratory isolation and standard infection control precautions.[3] Nigeria has recorded significant number of cases across 18 out of 36 states of the federation with attendant fatalities.[10] The need to examine the role of media coverage of monkeypox outbreak in Nigeria and its impact on health behaviors in lieu of the scourge and fear of uncertainty necessitated this investigation. The study objectives are as follows:

1) to assess people's knowledge of the virus;
2) to evaluate people's consumption of media campaign on monkeypox outbreak;
3) to assess the impact of media campaigns about monkeypox on people's health behavior; and
4) to determine the challenges faced by media in reporting health information, particularly wide-spread outbreaks.

2. Methods

This study used cross-sectional survey to collect data. The study took place in the Southern part of Nigeria. Southern Nigeria comprises 17 states with a population of over 123 million people grouped administratively into 3 geopolitical zones: South-west, South-east, and South-south. The ethics committee at the authors' respective institutions approved the study. The study was conducted in adherence with the research principles of WMA Declaration of Helsinki. Respondents completed informed consent forms for participation in the study. A total of 600 respondents were chosen as sample; 200 each from the 3 study areas. A multi-stage cluster random sampling technique was used for this purpose. The decision to select equal sample size from each study site was purposively made by the researchers.

A 10-item structured questionnaire titled "Monkeypox Awareness through Media Campaign Questionnaire" was created by the researchers through review of previous literature.[1,3–7,9–14] The structured questionnaire was divided into 2 sections to collect data concerning socio-demographic variables, such as age, gender, and education, and questions related to media coverage of monkeypox outbreak in Southern Nigeria. The questionnaire was structured on a 5-point rating scale: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. The values of these response patterns were as follows: Strongly Agree = 5 points; Agree = 4 points; Undecided = 3 points; Disagree = 2 points; Strongly Disagree = 1 point. Three evaluators, comprising 2 Mass Communication lecturers and 1 medical officer from the University of Nigeria and University of Nigeria Medical Centre, respectively, carried out a face validation of the questionnaire. Test re-test reliability was adopted at the interval of 2 weeks to administer 20 copies of the questionnaires to respondents in a setting similar to the main study areas at Awka, the capital of Anambra state. The 2 set of responses obtained were correlated using the Pearson product-moment correlation (r). Pearson product-moment correlation coefficient of 0.95 was obtained, and the internal consistency reliability of the questionnaire was 0.86 alpha.

The questionnaire was administered in 3 weeks with the aid of research assistants. Through a 2-day group tutoring, the research assistants were trained by researchers on how to collect the needed data. The researchers instructed them to ensure that they distributed the questionnaire to people who were willing to take the survey. Percentage and mean score from SPSS version 20 (SPSS Inc., Chicago, IL) were used to analyze the data collected. The mean difference was significant at $P \leq .05$ and guided the decision taken from the analysis.

3. Results and discussion

3.1. Participants' demographic characteristics

Results from the data analysis showed the following demographic information: there were 265 male respondents (44.2%) and 335 female respondents (55.8%) who voluntarily participated in the study. Furthermore, 26.0% of the respondents were between the age group of 18 and 27 years, 30.5% were between 28 and 37 years of age, 28.3% were between 38 and 47 years of age, and 15.2% were 48 years and above. The educational levels of the respondents were: West African Examination Certificate (WAEC)/National Diploma (ND) (34.7%), Bachelor's degree (39.2%), and Masters/PhD (26.2%) (see Table 1).

3.2. People's knowledge of monkeypox virus and access to and consumption of its media programs

As shown in Table 2, the analysis of responses to question 1 showed that the respondents had little or no knowledge of monkeypox virus, its nature, transmission, and prevention mechanism (mean = 2.30, $P = .000$). However, the grand mean

Table 1

Socio-demographic data of respondents.

		Gender		Age in years				Education		
City	No.	Male	Female	18–27	28–37	38–47	48 and above	WAEC & ND	First degree	Master/PhD
Enugu	200	89	111	37	63	70	30	83	67	50
Port-Harcourt	200	95	105	58	60	50	32	55	85	60
Ibadan	200	81	119	61	60	50	29	70	83	47
Total	600	265	335	156	183	170	91	208	235	157

Source: Field Work, 2018.

ND = National Diploma, PGD = Postgraduate Diploma, WAEC = West African Examination Certificate.

Table 2

Results of analyses of responses to questions.

S/No.	Items	Grand mean	Stand. deviation	Standard error	Tests of between-subjects effects	Sig.
1	Know the nature, carriers, symptoms, and treatment of monkeypox	2.30	.918	.056	226.652	.000
2	Learnt about monkeypox through the mass media and/or new media	2.02	1.245	.076	416.907	.002
3	Learnt about monkey pox through friends, church, school, hospital, or town hall meetings	4.44	.945	.058	240.296	.006
4	The media created effective and comprehensive awareness campaigns about the virus that mobilized an army of the masses against monkeypox	1.86	1.196	.073	384.652	.001
5	Inappropriate and insufficient information together with rumors, such as the news that the army was carrying out vaccinations to kill school children by injecting them with monkeypox, characterized the campaign against the virus	4.18	1.352	.082	491.467	.004
6	The entire media devoted ample time, resources, and space to create public awareness about the transmission and methods of preventing monkeypox virus	2.02	1.245	.076	416.907	.002
7	Mass media activities established red alert and created high level public consciousness and fear on the fatality rate of monkeypox in Nigeria	1.86	1.196	.073	384.652	.001
8	Media campaign against the outbreak and spread of monkeypox led to changes in Nigerian culture of hugging, handshake, eating bushmeats, and social gathering and ceremonies	1.86	1.196	.073	384.652	.001
9	People's culture, economic activities, and hardship militated against the impact of media campaign to prevent the spread of monkeypox by avoiding its vendors	2.02	1.245	.076	416.907	.002
10	Inappropriate and insufficient media programs caused by lack of funds hindered the war against the virus in Nigeria	4.44	.945	.058	240.296	.006

of their responses to question 2 (mean = 2.02) indicated that the respondents disagreed that they learnt about monkey virus through media ($P = .002$). The analysis also revealed a grand mean of 4.44 indicating that the respondents agreed to have learnt about the virus through friends, church, school, hospital, or town hall meetings ($P = .006$). Further, the responses on whether the media created effective and comprehensive awareness about monkeypox virus that mobilized an army of the masses against the virus revealed a grand mean of 1.86, which represented "Strongly Disagree" ($P = .001$). The analysis of responses to question 5, which sought to find out if inappropriate and insufficient information together with rumors, such as the news that the army was carrying out vaccinations to kill school children by injecting them with monkeypox, characterized the campaign against the virus revealed a grand mean of 4.18, which represented "Agreed" in our Likert scale. By implication, the respondents had little or no access to the media campaign about monkeypox outbreak and spread in Nigeria ($P = .004$). Further analysis of the results revealed that a grand mean of 2.02 indicated that the respondents disagreed that the entire media devoted ample time, resources, and space to create public awareness about the transmission and methods of preventing the virus ($P = .002$).

3.3. The impact of media campaign on monkeypox outbreak and spread

The analysis of responses to question 7, which aimed to find whether mass media activities established red alert and created high level public consciousness and fear on the fatality rate of monkeypox in Nigeria revealed a grand mean of 1.86 representing "Disagreed" ($P = .001$). Further, the analysis also showed that the respondents felt that the media campaign on the outbreak and spread of monkeypox did not lead to any changes in Nigerian culture of hugging, handshaking, eating bushmeats, and social gathering and ceremonies, which had a grand mean of 1.86 representing "Disagreed" in our Likert scale ($P = .001$). These results implied that the mass media campaigns about monkeypox outbreak and spread in Nigeria have had little or no effect on people's health behavior. Media seems to have failed to produce any form of danger consciousness associated with the virus. It seems to have failed to bring about significant changes in the Nigerian culture of hugging, handshaking, eating bushmeats, and social gathering and ceremonies. These behaviors are modes of transmission of virus. The media efforts were, therefore, ineffective and inefficient in the prevention of monkeypox (see Table 2).

3.4. The challenges faced by the media campaigns about the disease

Results of the analysis, which aimed to find whether people's culture, economic activities, and hardship militated against the impact of media campaign to prevent the spread of monkeypox by avoiding its vendors, revealed a grand mean of 2.02 representing "Disagreed" in our Likert scale ($P = .002$). Therefore, the respondents thought that Nigerians, their culture, and economic hardship were not a hindrance to media campaign about the virus. Further, the analysis indicated that the respondents agreed that inappropriate and insufficient media programs and lack of funds hindered in creating awareness about the virus in Nigeria and revealed a grand mean of 4.44 representing "Agreed" ($P = .006$). Therefore, the inability of media to plan effective and efficient campaigns on monkeypox outbreak and spread in Nigeria was attributed to the inappropriateness and insufficiency of its programs. Various problems, such as lack of funds, were responsible for this media deficiency (see Table 2).

3.5. Implications and limitations

The findings of this study support the view that mass media reportage may have a positive influence on people's health behavior, but in this case, it did not because of low or non-consumption of its contents. Therefore, agencies and organizations that work to promote public health and counter and prevent the spread of viral diseases through education, sensitization, and mobilization should consider the substantial use of mass media as their primary instrument or channel. The implication of the findings of this study is that stakeholders and policy makers should develop strategies and policies to resolve the challenges faced by media to report outbreak of monkeypox and other viral diseases. The findings, therefore, support various efforts to modernize and sustain media activities in Nigeria. Further, media organizations should review their health communication policy and practice and ensure greater access to media and media consumption. The current study has several limitations regarding the impact of low level of education, time and nature of program, language, and poverty on people's ability to comprehend and consume media programs in Nigeria. Thus, further research in this thematic area should focus on the impact of these factors on people's access to, comprehension, and consumption of media with respect to disease prevention. Additionally, this study could not account for the impact of culture and religion on media access and the campaigns about the disease. This is another area of possible future research. Also, the fact that the researchers approached people who were willing to take the survey is another possible limitation of this study. Future researchers should endeavor to be more inclusive in their data collection approach in order to eliminate any form of collection bias.

4. Conclusions

The outbreak of monkeypox virus is a public health concern in Nigeria. Nigeria has recorded significant number of cases across 18 out of 36 states of the federation with attendant fatalities. Media campaigns are planned to create awareness about the disease; however, these campaigns have not demonstrated effectiveness in changing people's health behavior toward monkeypox. Some behaviors and activities, which are defined by socio-cultural norms and practice, are channels of monkeypox infections. Many factors, including inappropriate and insufficient media programs and lack of funds, were also responsible for this scenario. Media, health professionals, and government should synergize to promote a consistent health policy for the control and prevention of monkeypox virus.

Author contributions

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References

[1] Durski KN, McCollum AM, Nakazawa Y, et al. Emergence of monkeypox – West and Central Africa, 1970–2017. Morb Mortal Wkly Rep 2018;67:306–10.
[2] Khalafalla AI, Abdelazim F. Human and Dromedar: camel infection with camel pox virus in Eastern Sudan. Vector Borne Zoonotic Dis 2017;17:281–4.
[3] World Health Organization. Monkeypox. 6 June 2018. Retrieved from http://www.who.int/mediacentre/factsheets/fs161/en/ [accessed Sept. 14, 2018].
[4] Jezek Z, Fenner F. Human monkeypox. Monogr Virol 1988;14:1–40. Basel: Karger.
[5] Breman JG, Kalisa-Ruti , Steniowski MV, et al. Human monkeypox 1970–1979. Bull World Health Organ 1980;58:165–82.
[6] Learned L, Reynolds MG, Wassa-Wassa D, et al. Republic of Congo outbreak. J Trop Med 2005;32:121–32.
[7] Damon IK. Status of human monkeypox: clinical disease, epidemiology and research. Vaccine 2011;29:D54–9.
[8] Peters CJ. Comments on route of inoculation. Pro MED Mail Archive 2003;20030618.1504. Retrieved from http://www.promedmail.org [accessed Oct. 21, 2018]
[9] Reed KD, Melski JW, Graham MB, et al. The detection of monkeypox in humans in the Western Hemisphere. N Engl J Med 2004;350:342–50.
[10] Nigeria Centre for Disease ControlSituation Report – Nigeria Monkeypox Outbreak Report. Abuja: NCDC; 2018. Retrieved from https://ncdc.gov.ng/themes/common/files/sitreps/6c3cf1e472 c509190602a5d431c 0af1 e.pdf [accessed Oct. 25, 2018]
[11] World Health Organization (WHO)Weekly Bulletin on Outbreaks and Other Emergencies. Week 36: 1–7 September 2018. Geneva: WHO; 2018. Retrieved from http://apps.who.int/iris/bitstream/handle/10665/274335/OEW36-15092018.pdf [accessed December 15, 2018]
[12] Di Giulio DB, Eckburg PB. Human monkeypox: an emerging zoonosis. Lancet Infect Dis 2004;4:15–25.
[13] McCollum AM, Damon IK. Human monkeypox. Clin Infect Dis 2014;58:260–7.
[14] Centers for Disease Control and Prevention. Monkeypox. May 11, 2015. Retrieved from https://www.cdc.gov/poxvirus/monkeypox/index.html [accessed Sept. 14, 2018].