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The COVID-19 pandemic: Stay Home policy and exposure to risks of infection among Nigerians

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Abstract

The global threat which continues to accompany SARS-CoV-2 has led to a global response which adopts lockdown and stays home policy as means of curtailing its spread. This study investigates compliance with the Stay Home policy and exposure to COVID-19 in Nigeria. A survey was conducted from April 4 to May 8, 2020 using a cross-sectional mixed-methods approach to elicit responses from 879 participants across six geopolitical zones of Nigeria. Descriptive, χ^2, and multiple regression tests were used to analyze survey data using SPSS, whereas NVivo v12 was used for thematic analysis of qualitative data. States with complete lockdown had 72.4% of respondents complying fully with the policy compared with 44.2% of respondents in zones with the partial lockdown. Market places, classified as high-risk zones, were the most visited ($n = 505$; 71.0%). Though compliance was influenced by the nature of lockdown enforced ($\chi^2 = 70.385$, $df = 2$; $p < 0.05$), being a female, a widow, and unemployed were associated with increased compliance. Exposure to COVID-19 was associated with being married, unemployed, and having no income. Fear, anxiety, and misperception play major roles in compliance. The authors conclude that compliance is not uniform and a more nuanced and targeted approach is required as the government continues to respond to the COVID-19 global pandemic.

Key Points

- Exposure to risk of COVID-19 infection was conditioned by social and economic realities.

- The nature of lockdown (partial or complete) influenced compliance with stay Home Policy.
- Visits among family members was higher in areas with complete lockdown compared to area with partial lockdown.
- Places classified as high-risk zones (market and religious centres) were the most patronised.
- Fear, anxiety and misperception play significant roles in compliance with Stay Home Policy.

INTRODUCTION

The year 2020 began with a complex public health emergency – the outbreak and spread of a novel SARS-CoV-2 – the COVID-19 pandemic. The pandemic created a global health crisis (Coronavirus disease [COVID-19]—World Health Organization, https://www.who.int/emergencies/diseases/novel-coronavirus-2019), with no cure or potential remedies and therapies available at present (Rismanbaf, 2020). Since its outbreak, COVID-19 has spread to over 200 countries (Coronavirus disease [COVID-19]—World Health Organization, https://www.who.int/emergencies/diseases/novel-coronavirus-2019). In Africa, the first case of COVID-19 was confirmed on February 14, 2020, in Egypt (Shigemura et al., 2020). Two weeks after the case in Egypt, sub-Saharan Africa confirmed its first case in Nigeria on February 27, 2020 (Adegboye et al., 2020; Adepoju, 2020). Given its impact on the health and economies of developed countries, there was anxiety about the potential consequences the pandemic could have on Africa, owing to the level of poverty and poor health infrastructure in the continent (Nkengasong & Mankoula, 2020). Nigeria, with a population of about 200 million people ranked 158 out of 189 in the global development index (National Bureau of Statistics, 2017; UNDP "Human Development Reports," https://hdr.undp.org/en/countries/profiles/NGA). The health system has been in a prolonged crisis resulting from a massive export of its health professionals to Europe, Canada, and America, poor welfare, lack of appropriate infrastructure, inadequate doctor-patient ratio, and a meager budgetary allocation (Adeloye et al., 2017; Imafidon, 2018; https://yourbudgit.com/wp-content/uploads/2018/04/Nigeria-Health-Budget-Analysis.pdf; Omoleke & Taleat, 2017). As such, there was great concern regarding Nigeria's capacity to contain the epidemic owing to its weak health system (Adepoju, 2020; Ebenso & Otu, 2020).

On March 30, 2020, 4 weeks after the first case was confirmed in Nigerian, the government signed a nationwide COVID-19 Regulations which declared COVID-19 a dangerous infectious disease. Consequently, a 2-week complete lockdown on Lagos and Ogun States as well as the Federal Capital Territory (FCT) was effected (Kalu, 2020). Following a risk assessment at the expiration of the 2 weeks, the lockdown was extended by another 2 weeks with Kano State added to the list of states for complete lockdown. The lockdown was patterned after the ones implemented across multiple countries in Europe and America to curtail the spread of COVID-19, despite reservations of likely effectiveness in the context of low-income countries (Barnett-Howell & Mushfiq Mobarak, 2020). Strict measures, which included the use of law enforcement agents, were introduced and enforced. Governments at the state level also imposed partial lockdown in the form of a dusk to dawn curfew. Lockdown regulations included travel restrictions; either by air or road (including interstate border closure), closure of all schools as well as markets and recreational centers.

However, businesses considered as essential services such as those providing health-related and essential services, manufacturing and distribution companies, as well as commercial establishments involved in food processing, distribution/retail companies, power generation, transmission, and distribution companies and private security companies were exempted from the lockdown (Adeloye et al., 2017). Though the regulations affected the consumption of nonessential commodities such as hospitality business, fabrics, sports, and electronics, they also negatively affected the income-generating capacity of individuals, families, and groups (Lewnard & Lo, 2020). Though the "Stay Home" policy sought to reduce human physical contact thereby decreasing and ending disease transmission, it created a financial challenge in a society where the majority of its citizens are entrepreneurs (Qiu et al., 2017).

At the commencement of the lockdown and Stay Home policy on March 30, 2020, a cumulative total of 131 confirmed cases were initially reported in two states of Nigeria (Lagos and Ogun) and the Federal Capital Territory, and on April 11, Kano States recorded its index case (Iboi et al., 2020). However, 4 weeks into the lockdown, 33 states and the FCT had reported 1,532 confirmed cases. The infection had spread to nearly all states of the country. The demographics of patients with COVID-19 indicated that 14% of COVID-19 cases had travel history, 28% had contact with an infected person and 49% of patients had no epidemiological link. Also, more males (66%) tested positive for COVID-19 (Nigeria Centre for Disease Control, https://ncdc.gov.ng/diseases/sitreps/?cat=14%26name%3DAn%20update%20of%20COVID-19%20outbreak%20in%20Nigeria). Though many studies have been devoted to understanding the epidemiology of COVID-19 and the social response in terms of social and physical distancing, hand washing, and the psychological impact of COVID-19 on people (Bedford et al., 2020; Desai & Aronoff, 2020; Shigemura et al., 2020), no empirical evidence has been presented on compliance with the Stay Home policy and the risks of COVID-19 infection in Nigeria. This study addresses this gap in the evidence by providing evidence for understanding the patterns of compliance with the Stay Home policy and the likely ways in which people are exposed to the risk of contracting COVID-19.

MATERIALS AND METHODS

We conducted a cross-sectional online mixed-methods study which combined a self-completed online survey using WhatsApp, Twitter, and Facebook with an in-depth interview of purposively selected participants, conducted by mobile phone, to investigate emergent issues around patterns of compliance and exposure to the risk of contracting COVID-19. The survey was administered to respondents aged 18 and above across the six geopolitical zones of Nigeria using a link created on Google Forms. The survey instrument contained closed and opened-ended questions on sociodemographic characteristics of respondents, compliance to government policy, and movement around risk zones. Study instrument validation was conducted by a pretest with purposively selected individuals based on sex (four males, two females) who resided in the northern and southern parts of Nigeria.

SAMPLING AND SAMPLE SIZE

The survey was administered over a 5-week period from April 4 to May 8, 2020. Because the lockdown did not permit face-to-face interviews, the online survey and telephone interview strategies were adopted for the research.

Six research assistants (RAs) were recruited to broadcast the survey link on social media across the six geopolitical zones. The survey link was also shared among authors (David O. Akeju [DOA], Samuel O. Adejoh [SOA], Bassey Ebenso [BE], and Ayoola J. Fakunmoju [AJF]) and RAs

who thereafter shared on WhatsApp, Facebook, and Twitter tagging colleagues and friends. To encourage wider public interest and participation in the research, colleagues and friends to the research team were instructed to share the link to the survey with their friends on social media. The qualitative data collection process involved the use of in-depth interviews (IDIs) to elicit information through in-depth engagement with respondents across six geopolitical zones. A sample size of 20 IDIs was considered to be sufficient for exploring perceptions and the Stay Home policy and respondents' experiences of lockdown measures. Using a quota sampling technique, three to four IDIs were conducted from each geopolitical zone. Interviews were discontinued after 22 IDIs were conducted as no new themes emerged from interviews.

MEASUREMENT

Compliance was measured by whether people stayed home fully, partially, or did not stay home at all. It was also measured by whether they received guests or visited anyone during the lockdown. Our measurement of risk was informed by the guideline which restricted human interaction to between 10 and 20 people within a group (https://gloepid.org; The New York Times, 2020). As such, we categorized risk zones as places where more than 10 people are concentrated and interacted with each other. We classified places such as markets or shopping malls; churches or mosques; hospital or clinic; work/office, and parties as *high-risk zones*. The low-risk zone included visits to friends or family, and walking or exercise. Complete lockdown was defined as total restrictions of movements, whereas partial lockdown was defined as either a dusk to dawn curfew or a total restriction of movement to specific days of the week.

DATA ANALYSIS

Quantitative data were exported from Google Forms and processed (DOA) using the Statistical Package for Social Sciences (SPSS) version 22. Open-ended responses in the Google Forms were recoded into numeric data, whereas some close-ended responses, for example, places where people visited during the lockdown, were recategorized into high- or low-risk zones. Descriptive analysis was conducted using simple frequency distribution tables and the χ^2 and multiple regression tests were used to understand socioeconomic factors associated with compliance and exposure to risks of COVID-19 infections. Qualitative data were transcribed verbatim (AJF) and nodes were mutually created inductively and deductively by two members (DOA and SOA) of the research team. Qualitative data were analyzed (SOA) adopting thematic analysis (Braun & Clarke, 2006) and a computer-assisted analysis procedure using NVivo version 12 to code and classify responses in line with relevant themes.

CONSENT AND ETHICAL APPROVAL

The survey exposed no participants to physical risks, although it was not known whether they themselves or family and friends had contracted COVID-19. No other ethical issues or harms were anticipated. An overview of the survey content was provided alongside details for individuals to consent to participation. Stored questionnaire responses were anonymized, and data were stored securely in Google Forms until the survey duration was completed. Ethical approval was granted from the University of Lagos Teaching Hospital ethical review board (UTHHREC/EREV/0420/08).

RESULTS

Descriptive data

Eight hundred and eighty-three ($n = 883$) respondents participated in the survey. Of this, four respondents outside Nigeria (three from the United Kingdom and one from the United States) participated in the survey. These were excluded from the analysis to give a total of 879 respondents. In terms of geographical spread, average participation was 12.8% across five geopolitical zones (Northeast: $n = 106$, 12.1%), Northcentral: $n = 122$, 13.9%), Northwest $n = 117$, 13.3%), Southeast: $n = 102$; 11.6%), Southsouth $n = 114$, 13.0%) except in the Southwest zone where participation was higher ($n = 318$, 36.2%). There were more male respondents (53.4%) than females. The mean age was 33.11 ($SD = 8.3$). Age range of respondents was 18–65 years, the majority were single ($n = 431$; 49.0%) or married ($n = 425$; 48.4%), and employed ($n = 578$; 65.8%). Most respondents had tertiary education ($n = 850$; 96.7%) and were living in urban areas ($n = 782$; 89.0%). About half ($n = 463$; 52.7%) of respondents earned regular monthly income.

Patterns of compliance with Stay Home policy

Results in Table 1 show that more respondents ($n = 281$; 72.4%) within complete lockdown zones complied fully with the Stay Home policy relative to zones with partial lockdown ($n = 217$; 44.2%). Compliance in complete and partial lockdown zones was statistically significant ($\chi^2 = 70.385$, $df = 2$; $p < 0.05$), with most respondents ($n = 776$; 88.3%) agreeing it was an effective means to curtailing the spread of COVID-19. Movement across the two zones was statistically significant ($\chi^2 = 52.254$; $df = 1$; $p < 0.05$) and there were more movement in partial lockdown zones ($n = 272$; 70.1%) compared to the proportion who did so in complete lockdown zone ($n = 439$; 89.4%). Similarly, reception for guests was statistically significant ($\chi^2 = 4.612$; $df = 1$; $p < 0.05$) as it was more common in partial lockdown zones ($n = 178$; 36.3%) compared to those in complete lockdown zones ($n = 114$; 29.4%). The itinerary of those who did not comply with the lockdown ($n = 711$; 80.9%) indicates that market places were the most visited ($n = 505$; 71.0%), with a high proportion of people in partial lockdown zones visiting markets ($n = 320$; 72.9%) and a little less proportion doing so in complete lockdown zones ($n = 185$; 68.0%). Places visited by respondents differed significantly by type of lockdown ($\chi^2 = 26.969$; $df = 6$; $p < 0.05$) as people in complete lockdown zones visited friends and families more ($n = 44$; 16.25%) compared to those who did so in partial lockdown zones ($n = 37$; 8.45%).

In terms of visitation to high- and low-risk zones by those who did not comply with lockdown measures, data suggests the majority ($n = 613$; 86.2%) visited high-risk zones. When disaggregated by clusters, results show visitation to risk zones was statistically significant ($\chi^2 = 15.361$; $df = 1$; $p < 0.05$) by lockdown—more people in partial lockdown areas interacted within high-risk zones ($n = 396$; 90.2%) compared to those who did so ($n = 217$; 79.8%) in complete lockdown zones.

Socioeconomic factors influencing compliance and movement around risk zone

Results in Table 2 show that being a female ($\beta = 0.210$; $t = 6.372$; $p < 0.005$; $R^2 = 0.044$), a widow ($\beta = 0.080$; $t = 2.379$; $p < 0.005$; $R^2 = 0.009$), unemployed ($\beta = 0.140$; $t = 4.108$; $p < 0.005$; $R^2 = 0.024$) or housewife ($\beta = 0.079$; $t = 2.359$; $p < 0.05$; $R^2 = 0.024$) and having random income ($\beta = 0.128$; $t = 3.649$; $p < 0.005$; $R^2 = 0.018$), daily income ($\beta = 0.076$; $t = 2.199$; $p < 0.005$;

TABLE 1 A contingency table showing compliance with Stay Home policy and exposure to risks by nature of lockdown

Compliance and exposure to risk	Nature of lockdown		Total, n (%)
	Partial lockdown, n (%)	Complete lockdown, n (%)	
Compliance with stay at home policy			
Proportion that complied fully	217 (44.2)	281 (72.4)	498 (56.7)
Proportion that complied partially	188 (38.3)	75 (19.3)	263 (29.9)
Proportion that did not comply	86 (17.5)	32 (8.2)	118 (13.4)
Total	491 (100.0)	388 (100.0)	879 (100.0)

$\chi^2 = 70.385$; $df = 2$; $p < 0.05$; likelihood $= 71.974$

Perception of the effectiveness of staying home			
Effective in curtailing COVID-19	440 (89.6)	336 (86.6)	776 (88.3)
Not effective in curtailing COVID-19	51 (10.4)	52 (13.4)	103 (11.7)
Total	491 (100.0)	388 (100.0)	879 (100.0)

$\chi^2 = 1.905$; $df = 1$; $p > 0.05$; likelihood $= 1.893$

Movement during lockdown/curfew			
Proportion who went out	439 (89.4)	272 (70.1)	711 (80.9)
Proportion who did not go out	52 (10.6)	116 (29.9)	168 (19.1)
Total	491 (100.0)	388 (100.0)	879 (100.0)

$\chi^2 = 52.254$; $df = 1$; $p < 0.05$; likelihood $= 52.505$

Receiving guest during the lockdown/curfew			
Proportion who received guests	178 (36.3)	114 (29.4)	292 (33.2)
Proportion who did not receive guests	313 (63.7)	274 (70.6)	587 (66.8)
Total	491 (100.0)	388 (100.0)	879 (100.0)

$\chi^2 = 4.612$; $df = 1$; $p < 0.05$; likelihood $= 4.638$

Places visited			
Market/shopping	320 (72.9)	185 (68.0)	505 (71.0)
Friends and families	37 (8.4)	44 (16.2)	81 (11.4)
Religious houses	38 (8.7)	10 (3.7)	48 (6.8)
Work	28 (6.4)	15 (5.5)	43 (6.0)
Hospital/clinic	5 (1.1)	7 (2.6)	12 (1.7)
Exercise	6 (1.4)	11 (4.0)	17 (2.4)
Party	5 (1.1)	0 (0.0)	5 (0.7)
Total	439 (100.0)	272 (100.0)	711 (100.0)

$\chi^2 = 26.969$; $df = 6$; $p < 0.05$; likelihood $= 27.710$

TABLE 1 (Continued)

| Compliance and exposure to risk | Nature of lockdown | | Total, *n* (%) |
	Partial lockdown, *n* (%)	Complete lockdown, *n* (%)	
Risk zones			
Visited high-risk zone	396 (90.2)	217 (79.8)	613 (86.2)
Visited low-risk zone	43 (9.8)	55 (20.2)	98 (13.8)
Total	439 (100.0)	272 (100.0)	711 (100.0)

$\chi^2 = 15.361$; *df* = 1; $p < 0.05$; likelihood = 14.918

$R^2 = 0.018$), or no income ($\beta = 0.053$; $t = 1.539$; $p < 0.005$; $R^2 = 0.018$), were statistically significant with compliance with Stay Home policy.

When exposure to risks was predicted, results from a logistic regression show that being married ($\beta = 0.92$; $t = 2.702$; $p < 0.05$; $R^2 = 0.011$), having secondary education ($\beta = -0.081$; $t = -2.397$; $p < 0.05$; $R^2 = 0.10$), being unemployed ($\beta = -0.185$; $t = -5.464$; $p < 0.05$; $R^2 = 0.041$), and being a student ($\beta = -0.122$; $t = -3.602$; $p < 0.05$; $R^2 = 0.041$), having random income ($\beta = -0.086$; $t = -2.452$; $p < 0.05$; $R^2 = 0.015$), or no income ($\beta = -0.143$; $t = -4.138$; $p < 0.05$; $R^2 = 0.015$) were statistically significant with movement around risk zones.

Qualitative findings

A total of 22 participants (male: $n = 9$; 40.9%, female: $n = 13$; 59.1%) across the six geo-political zones shared their experience about the Stay Home policy with an average of 3.7 participants per zone, a minimum of three and a maximum of five participants. The average age of participants was 39.7 with a Standard Deviation of 12.01. Majority of the participants ($n = 13$; 59.1%) had Diploma and graduate certificates, whereas $n = 9$ (40.9%) had secondary/primary education. A large proportion was married ($n = 14$; 63.6%), whereas about a third were single ($n = 7$; 31.8%).

Factors influencing compliance with Stay Home policy

Compliance was mediated by anxiety and fear among some segments of the study participants. The fear of being infected with COVID-19 increased compliance among educated people who had steady and regular income. There were some categories of people who did not comply because of their engagement in small-scale businesses which helps in meeting personal and family needs. Among this category, the Stay Home policy was compared to caging animals without feeding them. As one of the respondents puts it:

> So you have people flouting the lockdown rule and there is the other aspect of "We can't see COVID", we can't see it, some people can't even feel it when they are sick, but they can clearly feel hunger. So if they comply for a week, after a few days they are going to go out and look for what to eat because that's the clear danger they can see, every other thing we're talking about is abstract. So the lockdown is not necessarily wrong but maybe the way we are applying it or all the other things we were supposed to put in place prior now have not been put in place. (IDI_Female_Married_Professional_34years_Northcentral)

TABLE 2 A regression analysis of socioeconomic factors influencing compliance to Stay Home policy and movement within risk zone

Model	Unstandardized coefficients		Standardized coefficients		
	B	Standard error	β	t	Significance
(Constant)	0.469	0.022		20.945	0.000
Female*	0.209	0.033	0.210	6.372	0.000
(Constant)	0.580	0.024		24.344	0.000
Married	−0.037	0.034	−0.037	−1.080	0.280
Separated	−0.080	0.177	−0.015	−0.454	0.650
Divorced	0.134	0.188	0.024	0.712	0.477
Widowed*	0.420	0.177	0.080	2.379	0.018
(Constant)	0.566	0.017		33.239	0.000
Secondary	0.045	0.118	0.013	0.383	0.702
No education	−0.020	0.151	−0.005	−0.136	0.892
(Constant)	0.519	0.020		25.426	0.000
Unemployed*	0.178	0.043	0.140	4.108	0.000
Student	0.064	0.049	0.045	1.306	0.192
Housewife*	0.293	0.124	0.079	2.359	0.019
(Constant)	0.505	0.023		22.092	0.000
Random Income*	0.138	0.038	0.128	3.649	0.000
Daily Income*	0.145	0.066	0.076	2.199	0.028
No Income	0.090	0.058	0.053	1.539	0.124
Exposure to risk					
(Constant)	0.712	0.021		33.554	0.000
Female	−0.032	0.031	−0.034	−1.019	0.309
(Constant)	0.659	0.022		29.865	0.000
Married*	0.085	0.031	0.092	2.702	0.007
Separated	−0.034	0.163	−0.007	−0.208	0.836
Divorced	−0.230	0.175	−0.045	−1.320	0.187
Widowed	−0.034	0.163	−0.007	−0.208	0.836
(Constant)	0.706	0.016		44.948	0.000
Secondary*	−0.261	0.109	−0.081	−2.397	0.017
No education	−0.251	0.139	−0.061	−1.809	0.071
(Constant)	0.763	0.019		40.671	0.000
Unemployed*	−0.218	0.040	−0.185	−5.464	0.000
Student*	−0.163	0.045	−0.122	−3.602	0.000

TABLE 2 (Continued)

| Model | Unstandardized coefficients | | Standardized coefficients | | |
	B	Standard error	β	t	Significance
Housewife	−0.138	0.114	−0.040	−1.207	0.228
(Constant)	0.747	0.021		35.310	0.000
Random Income*	−0.086	0.035	−0.086	−2.452	0.014
Daily Income	−0.033	0.061	−0.019	−0.540	0.589
No Income*	−0.223	0.054	−0.143	−4.138	0.000

*$p < 0.05$.

Among those who did not comply with Stay Home policy were people who doubted the reality of COVID-19 and those who believed it was a disease for only the rich. This was a prominent belief among those from lower socioeconomic groups.

> Really there is many people didn't believe with corona because this corona especially we here in the North it use to affect the big men. … But just in the urban area maybe mostly corona is affecting them, this is why in the village they didn't even believe with it up till tomorrow [There are many people in the north that do not believe there is corona virus since it is big men that are affected. It doesn't affect the villagers and farmers because the virus is only in the urban areas]. (IDI_Male_Artisan_41years_Northwest)

On the basis of these factors and perception, compliance with the Stay Home policy was generally low among a segment of the population across the geopolitical zones of the country, particular in states where there were partial lockdown or curfew. Policy guidelines also affected compliance in some ways. The rules guiding partial lockdown in some states allowed for people to move within specific days of the week which were opened for business or move between certain times of the day. These open days and time, although meant for engaging in essential services, were the loopholes exploited by people in partial lockdown zones to defy the Stay Home policy.

Exposure to risk

Qualitative data from both northern and southern zones show that one main point of convergence was the marketplace. Household needs constitute one of the most essential needs of man. For most people, the marketplace was the most important place to visit because of the need to replenish household stocks that have been exhausted. As revealed in the quote below, the market was usually congested:

> Even on Tuesday wey state government declare make everybody enter market, even by myself I experience it. Because the congestion of the people even to breathe, you cannot fit breathe because too much people. If you ask some people they will say no it is a lie, nothing like COVID-19 [People sometimes are nonchalant, for instance, the state government said every Tuesday we can go to the market, the place is always too congested such that one is unable to breathe, because people believe there is nothing like COVID-19]. (IDI_Male_Married_Artisan_50years_Northwest)

A similar scenario played out in the southern part of the country where the need to trade compelled people to visit market places. Respondents reported that sustaining the family was crucial as support was not coming from the government.

> Some people no fit obey the order to stay at home because they need money. Like me now, I come sell my palm oil and garri that is why I came out, if government want make we dey house, make them give us money as Buhari dey give their people for North [I came out to sell my palm oil and garri, if the government wants us to stay at home they should give us money]. (IDI_Female_Widowed_Artisan_59years_Southeast)

Data revealed that the frequency of visit to the market, particularly for those in higher socio-economic groups, was influenced by poor electricity supply. Power supply was generally poor. Buying and storing food items beyond 1 week was impossible. This would result in patronizing the market places very frequently and regularly among people with regular income.

> I cannot go to the market and say I'm shopping for 2 months because it will get spoilt. So I have to go to the market every week or every 2 weeks to buy the little quantity of food that I think will not get spoilt in the house due to lack of electricity. So with things like that, we can't apply the lockdown full scale the way civilized countries are applying the lockdown. (IDI_Female_Married_Professional_34years_Northcentral)

DISCUSSION

This study investigated the extent of compliance with the Stay Home policy and exposure to risks of COVID-19 infection among Nigerians. Findings from the study demonstrate lockdown and Stay Home policy as a potentially effective strategy for curtailing the spread of the COVID-19 pandemic. It highlights the importance of adapting global ideas to suit local realities (Block et al., 2020; Kuiper et al., 2020). Though compliance with the Stay Home policy was generally high across partial and complete lockdown areas, few recorded cases of non-compliance were significant enough to increase exposure to COVID-19 infection (Kuiper et al., 2020). This suggests that compliance with the Stay Home policy was not uniform. Market places were major points of interaction and economic exchange for purchasing to meet essential household or personal needs. Though such action is deemed to be compliant with lockdown and Stay Home policy—since some essential services, such as those involved in food farming and processing were not exempted from operating—movement around market places impedes the practice of physical distancing and increases the risk of exposure to COVID-19 (GloEpid, https://gloepid.org; https://covid19.ncdc.gov.ng/faq/). Market stalls in many places are structurally compromised and usually overcrowded in addition to the fact that monetary exchange represents a viable means of transmitting COVID-19 into homes and subsequently the community (Angelakis et al., 2014; Kampf et al., 2020).

The implementation of the lockdown and Stay Home policy occurred without efforts to accommodate likely social, economic, structural, and cultural factors as compared to more nuanced lockdown approaches implemented in, for example, the Netherlands where re-markably high compliance was recorded (Kuiper et al., 2020). This is thought to be linked to first determining social behavioral patterns that reinforce compliance to plan and implement effective physical distancing and Stay Home policy (Kuiper et al., 2020). In this study, visits to family members and friends during the lockdown underscores the social nature of man and the value attached to care and support from families and friends. The lockdown and

Stay Home policy were abrupt. It weakened existing social dynamics, cohesion, and family ties which people were not prepared to compromise. An understanding of these realities may help to inform the design and implementation of more effective lockdown and physical distancing policies following the identification of key behavioral patterns that reinforce compliance and limit interaction (Block et al., 2020; Kuiper et al., 2020). This would have formed part of a local strategy that adopts the enforcement of guidelines around identified behavioral patterns and risk zones such as market places. Though previous research highlights the influence of conspiracy beliefs in shaping compliance with Stay Home policies (Allington & Dhavan, 2020), our study highlights these beliefs exist amidst other factors.

LIMITATIONS

Only people with mobile phones and other digital mobile technology participated in the survey. This may cause a bias in responses skewed towards the middle- and upper-class population or those in urban centers who had access to the internet and social media applications. There were no measures in place to monitor the age of respondents. The study focuses mainly on people's compliance with the Stay Home policy and did not consider other regulations associated with physical distancing such as hand-washing and the use of sanitizers or nose masks.

CONCLUSIONS

Compliance with the Stay Home policy is not uniform across the geopolitical zones in Nigeria. More nuanced and targeted approaches are required as the government continues to respond to the COVID-19 global pandemic. Policymakers are yet to fully understand factors influencing compliance with full and partial lockdown policy and as such planning and design of policy frameworks that can effectively attract compliance is elusive.

CONFLICT OF INTERESTS
The authors declare that there are no conflict of interests.

ETHICS STATEMENT
Ethical approval was granted from the University of Lagos Teaching Hospital Ethical Review Board (UTHHREC/EREV/0420/08).

AUTHOR CONTRIBUTIONS
David O. Akeju conceptualized the study. David O. Akeju, Samuel O. Adejoh, Ayoola J. Fakunmoju, and Titilayo Tade designed the instruments used in the study. David O. Akeju, Samuel O. Adejoh, Bassey Ebenso, and Babasola O. Okusanya oversaw the implementation of the whole study. David O. Akeju and Samuel O. Adejoh collected qualitative data. David O. Akeju and Matthew J. Allsop conducted quantitative data analysis, David O. Akeju, Samuel O. Adejoh, and Ayoola J. Fakunmoju conducted data analysis. David O. Akeju wrote and the manuscript and all authors revised the manuscript.

DATA AVAILABILITY STATEMENT

The data collected and analyzed during the current study are available from the corresponding author, upon request.

REFERENCES

Adegboye, O. A., Adeshina, I. A., & Gayawan, E. (2020). Early transmission dynamics of Novel Coronavirus (COVID-19) in Nigeria. *International Journal of Environmental Research and Public Health*, *17*(9), 3054.

Adeloye, D., David, R. A., Olaogun, A. A., Auta, A., Adesokan, A., Gadanya, M., Opele, J. K., Owagbemi, O., & Iseolorunkanmi, A. (2017). Health workforce and governance: The crisis in Nigeria. *Human Resources for Health*, *15*, 32.

Adepoju, P. (2020). Nigeria responds to COVID-19; First case detected in sub-Saharan Africa. *Nature Medicine*, *26*(4), 444–448.

Allington, D., & Dhavan, N. (2020). *The relationship between conspiracy beliefs and compliance with public health guidance with regard to COVID-19*. Centre for Countering Digital Hate.

Angelakis, E., Azhar, E. I., Bibi, F., Yasir, M., Al-Ghamdi, A. K., Ashshi, A. M., Elshemi, A. G., & Raoult, D. (2014). Paper money and coins as potential vectors of transmissible disease. *Future Microbiology*, *9*(2), 249–261.

Barnett-Howell, Z., & Mushfiq Mobarak, A. (2020). *Should low-income countries impose the same social distancing guidelines as Europe and North America to halt the spread of COVID-19?* Yale School of Management, Yale University. https://yrise.yale.edu; https://som.yale.edu/should-low-income-countries-impose-the-same-social-distancing-guidelines-as-europe-and-north-america-to-halt-the-spread-of-covid-19

Bedford, J., Enria, D., Giesecke, J., Heymann, D. L., Ihekweazu, C., Kobinger, G., Lane, H. C., Memish, Z., Oh, M., Sall, A. A., Schuchat, A., Ungchusak, K., & Wieler, L. H. (2020). COVID-19: Towards controlling of a pandemic. *Lancet (London, England)*, *395*(10229), 1015–1018.

Block, P., Hoffman, M., Raabe, I. J., Dowd, J. B., Rahal, C., Kashyap, R., & Mills, M. C. (2020). Social network-based distancing strategies to flatten the COVID-19 curve in a post-lockdown world. *Nature Human Behaviour*, *4*(6), 588–596.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Desai, A. N., & Aronoff, D. M. (2020). Masks and Coronavirus Disease 2019 (COVID-19). *JAMA*, *323*(20), 2103.

Ebenso, B., & Otu, A. (2020). Can Nigeria contain the COVID-19 outbreak using lessons from recent epidemics? *The Lancet Global Health*, *8*(6), e770. https://linkinghub.elsevier.com/retrieve/pii/S2214109X20301017

Iboi, E., Sharomi, O. O., Ngonghala, C., & Gumel, A. B. (2020). Mathematical modeling and analysis of COVID-19 pandemic in Nigeria. *Mathematical Biosciences and Engineering*, *17*(6), 7192–7220.

Imafidon, J. (2018). *One-way traffic: Nigeria's medical brain drain. A challenge for maternal health and public health system in Nigeria?* (Masters Thesis). University of California, Los Angeles, CA. https://escholarship.org/uc/item/5q36r5xq

Kalu, B. (2020). COVID-19 in Nigeria: A disease of hunger. *The Lancet Respiratory Medicine*, *8*(6), 556–557.

Kampf, G., Todt, D., Pfaender, S., & Steinmann, E. (2020). Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *Journal of Hospital Infection*, *104*(3), 246–251.

Kuiper, M. E., de Bruijn, A. L., Folmer, C. R., Olthuis, E., Brownlee, M., Kooistra, E. B., Fine, A., & van Rooij, B. (2020). *The intelligent lockdown: Compliance with COVID-19 mitigation measures in the Netherlands* (No. 2020-20). Amsterdam Law School Legal Studies Research Paper.

Lewnard, J. A., & Lo, N. C. (2020). Scientific and ethical basis for social-distancing interventions against COVID-19. *The Lancet Infectious Diseases*, *20*(6), 631–633.

National Bureau of Statistics. (2017). Demographic statistics bulletin.

Nkengasong, J. N., & Mankoula, W. (2020). Looming threat of COVID-19 infection in Africa: Act collectively, and fast. *Lancet (London, England)*, *395*(10227), 841–842.

Omoleke, I. I., & Taleat, B. A. (2017). Contemporary issues and challenges of health sector in Nigeria. *Research Journal of Health Sciences*, *5*(4), 210–216. https://www.ajol.info/index.php/rejhs/article/view/165775

Qiu, W., Rutherford, S., Mao, A., & Chu, C. (2017). The pandemic and its impacts. *Health, Culture and Society*, *9*, 1–11. https://hcs.pitt.edu/ojs/index.php/hcs/article/view/221

Rismanbaf, A. (2020). Potential treatments for COVID-19; a narrative literature review. *Archives of Academic Emergency Medicine*, *8*(1), e29. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7085862/

Shigemura, J., Ursano, R. J., Morganstein, J. C., Kurosawa, M., & Benedek, D. M. (2020). Public responses to the Novel 2019 Coronavirus (2019-NCoV) in Japan: Mental health consequences and target populations. *Psychiatry and Clinical Neurosciences*, *74*(4), 281–282.

The New York Times. (2020, March 16). Gatherings should be limited to 10 people, Trump Says. https://www.nytimes.com/2020/03/16/world/live-coronavirus-news-updates.html

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