COVID-19: Misconceptions, self-perceived risk and compliance with preventive measures in rural Southwest Nigeria

ABSTRACT

We assessed misconceptions, self-perceived risk and compliance with preventive measures of COVID-19 in rural Southwest Nigeria. Data were collected in a community-based cross-sectional survey between June and August 2020. The dependent variables were (1) self-perceived risk of COVID-19 infection; and (2) preventive compliance.

Misconceptions about COVID-19 include: COVID-19 is not real it's just a propaganda (13.8%); it only affects rich people and those who travel abroad (35.6%); it cannot affect people in rural areas (50.0%); there are local herbal treatments for COVID-19 (55.8%). About two-third (65.0%) rated themselves as having a medium risk of infection. Further, 76.7% had average compliance with preventive measures.

Factors significantly associated with medium self-perceived risk of COVID-19 includes misconceptions about availability of local herbal treatment (OR=1.58, CI: 1.41-1.77); male sex (OR=0.69, CI: 0.54-0.89); primary education (OR=0.65, CI: 0.50-0.77); being a visitor in study community (OR=1.15, CI: 1.07-1.24). Factors associated with preventive compliance include belief that COVID-19 was not real (OR=0.61, CI: 0.47-0.79); traditional religion (OR=0.22, CI: 0.06-0.72); mobility in the preceding 12 months (OR=1.52, CI: 1.34-1.73); and high self-perceived risk (OR=7.04, CI: 1.53-32.53). Targeted information, awareness, and educational campaigns are necessary to correct misconceptions about COVID-19.

BACKGROUND

The deadly Corona Virus Disease 2019 [COVID-19] is a pathogen with no known pre-existing immunity in humans, and transmitted via droplets from close unprotected contact with infectious person(World Health Organization, 2020b). Currently, COVID-19 has ravaged many nations of the world, from its first wave to the third wave (Kebede, Prevention, & Headquarters, 2021). Several strains of the virus have been found across the globe (Le Page, 2021). Reported symptoms include fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, loss of taste or smell, and sore throat (CDC & Prevention, 2020)
Standard recommendations to prevent the spread of COVID-19 include frequent washing of hands using alcohol-based hand rub or soap and water; covering the nose and mouth with a flexed elbow or disposable tissue when coughing and sneezing; and avoiding close contact with anyone that has a fever and cough (World Health Organization, 2020a).
The global response to the pandemic has necessitated several drastic measures including global lockdown of human activities in pursuit of social distancing with ultimate goal of flattening the pandemic curve. In Nigeria, the first COVID-19 case was reported on February 27 2020. The number of cases has grown exponentially, such that the Nigeria Centre for Disease Control (NCDC) reported 165,612 confirmed cases out of 1,977,479 tests. Till date (14 May, 2021), there are 2066 deaths (NCDC, 2020). Several unprecedented measures have been adopted by the government to control COVID-19 transmission in Nigeria, including cessation of all movements in Lagos, Abuja and Ogun state for an initial period of 14days, leading to the suspension of religious gathering, businesses, offices and interstate travels. In addition to the effort towards the prevention of COVID-19, vaccination commenced on March 24, 2021, and about 1,748,242 doses have been administered in Nigeria (Ritchie et al., 2020). Of the 36 States and the Federal Capital Territory (FCT), Lagos and Oyo States both in South West region are in the top five in terms of number of positive cases. Although the region has one of the best socio-economic and health indices in Nigeria, it is the most affected by the COVID-19 outbreak. This is possibly due to its proximity to Lagos-the commercial capital of the country.
For any novel disease outbreaks such as that of COVID-19, there are several misconceptions which will ultimately affect risk perception and compliance with preventive measures (Nnama-Okechukwu, Chukwu, & Nkechukwu, 2020; Olapegba et al., 2020). These need to be documented to serve as evidence base for informed program design and implementation. Therefore, in this paper, we adopt the health belief model (Champion & Skinner, 2008)as a theoretical foundation to explore risk perceptions and compliance with COVID-19 preventive measures among rural dwellers in Southwest Nigeria. We focus on rural areas because they are usually not the first point of attraction for health interventions and they have disproportionately poorer socio-economic indices with little access to information. We sought to address the following questions:

i. what are the common misconceptions about COVID-19 in rural Southwest Nigeria?
ii. what is the self-perceived risk and how is it influenced by misconceptions and socio-demographic characteristics?
iii. what is the extent of compliance with COVID-19 preventive measures and what are the independent influence of self-perceived risk, misconceptions and background socio-demographic characteristics?

METHODOLOGY

The data presented in this paper were collected as part of a community-based cross-sectional survey on "social capital, health and wellbeing in rural, Southwest Nigeria". The rural areas of Southwest Nigeria are largely agrarian communities with very minimal infrastructural development. Common occupations are artisan, petty trading and farming. Likewise, cooking fuel, drinking water and other basic amenities are often sub-standard.

We adapted the cluster design used for demographic and health surveys in Nigeria for this study. Out of the six states in Southwest Nigeria, three states namely Ogun, Oyo and Ekiti states were purposively selected because they have the lowest maternal and child health indices in the southwest region. For administrative purposes, states in Nigeria are divided into Local Government Areas (LGAs). These LGAs were stratified into rural and urban based on the population size and availability of social infrastructural amenities. In each state, one rural LGA was selected by random sampling. The primary sampling units in the LGAs were enumeration areas (EAs) defined and demarcated by the National Population Commission (NPC). Two hundred households were selected from four EAs in each State.

Data collection

Prior to field work, we embarked on advocacy and awareness visits to community stakeholders in the study sites. These include the Primary Healthcare Coordinator in charge of the LGA; Community Health Officer in charge of study communities; and community leaders. In selected households, basic information about the household characteristics and demographics of members was collected from the household heads. Subsequently, one male and female aged at least 18 years was randomly selected for interview. The questionnaire comprised sections such as household characteristics, individual background characteristics, COVID-19 knowledge, attitude, perceptions and preventive measures, Health state descriptions, subjective wellbeing and quality of life, adult healthcare utilization, social capital, lifestyle and physical measurement, and under-five children healthcare. The study instrument was administered by fieldworkers who were trained prior to data collection on ethical issues, field procedures and interview techniques.

Data was collected using REDCap mobile application between June and August 2020. Interviewers complied with necessary protocol for COVID-19 prevention in the respective Study States.

Variables and Data analysis

The variables of interest in this paper were those on background characteristics, COVID-19 knowledge, misconceptions, self-perceived risk and compliance with preventive measures. There are two dependent variables: (1) self-perceived risk of COVID-19 infection categorized as low, medium, high; and (2) compliance with COVID-19 preventive measureswhich was categorized as poor, average and good. Background characteristics included demographic and socio-economic variables. Data were summarised using frequencies and percentages. We explored association between background variables and the two outcomes using ordinal logistic regression models. Measures of effect were estimated as Odds Ratio with respective 95% Confidence Interval (CI).

Ethical approval for the study was obtained from the University of Ibadan/University College Hospital Instituional Review Committee (UI/UCH IRC) at Ibadan, Nigeria.

SUMMARY OF RESULTS

The study sample comprised of 922 adults - 382 men (41.4%) and 540 women (58.6%) with age ranging from 18 to101 years. Two hundred and eighty onerespondents were aged 20-29 years (30.5%) and 101 (11.0%) 60 years and above. While 99 (10.7%) had no formal education, 46.5% and 17.0% attained secondary and post-secondary levels respectively. Majority (72.9%) were married while 17.7% were singles. Half of the sample has always being resident in the study communities.

Virtually all respondents have heard about COVID-19. Results on misconceptions about COVID-19 include the following: COVID-19 is not real it's just a propaganda (13.8%); it only affects rich people and those who travel abroad (35.6%); it cannot affect people in rural areas (50.0%); there are local herbal treatments for COVID-19 (55.8%). Assessment of self-perceived risk showed that 20.7%, 65.0% and 14.4% reported low, medium and high chances of contracting COVID-19 infection. Further, 9.0%, 76.7% and 14.2% were found to have poor, average and good compliance with COVID-19 preventive measures.

Factors significantly associated with medium or high chances of being infected by COVID-19 comprises misconceptions about availability of local herbal treatment (OR=1.58, CI: 1.41-1.77) and four background characteristics. These include male sex (OR=0.69, CI: 0.54-0.89), primary education (OR=0.65, CI: 0.50-0.77), being a visitor in study community (OR=1.15, CI: 1.07-1.24) and being a child to the household head (OR=0.75, CI: 0.65-0.85).

The independent predictors of compliance with COVID-19 preventive measures are: misconception that it's just propaganda, relationship to household head, religion, mobility and self-perceived risk. Participants who believed that COVID-19 was not real but just propaganda (OR=0.61, CI: 0.47-0.79) were less likely to have good compliance with preventive measures. Compared to Christians, traditional and other religions (OR=0.22, CI: 0.06-0.72) were less likely to comply with COVID-19 preventive measures. Participants who have been away from their home community at least once in the preceding 12 months were more likely to comply with preventive measures (OR=1.52, CI: 1.34-1.73). Lastly, respondents with medium (OR=2.21, CI: 1.18-4.13) and high self-perceived risk (OR=7.04, CI: 1.53-32.53) were more likely to comply with COVID-19 preventive measures.

FINDINGS AND POLICY IMPLICATIONS

The findings revealed appreciable levels of misconceptions about COVID-19. Similarly, four out of every five rural dwellers in Southwest Nigeria perceived themselves as having medium/high risk of COVID-19 infection while majority attained average compliance with preventive measures. Targeted information, awareness, and educational campaigns are necessary to correct misconceptions about COVID-19. Secondly, risk communications coupled with enlightenment campaigns on adherence to preventive measures are necessary. Since none of the basic demographic variables were statistically significant, awareness messages need to be designed to reach a broad population group irrespective of age, education, gender, and religious affinity.

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