

## USE OF HOME MEDICATIONS AGAINST COVID 19 IN ARKILLA AREA, SOKOTO, NIGERIA

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### Abstract

The Coronavirus Disease of 2019 (COVID-19) affects the entire world. Over 200 million people were infected globally: more than 200,000 were from Nigeria, and about 1000 were from Sokoto State as of 30th November 2021. Despite these figures, people believed that home remedies could prevent and cure COVID-19, which drew the attention of researchers. Therefore, the focus of this study is on the effectiveness of home medications in combating COVID-19. The Health Belief Model (HBM) is adopted as a theoretical paradigm. Also, a quantitative methodology was employed. Systematic random sampling was adopted to select the study population, while 356 questionnaires were dispensed and analyzed using Statistical Package for Social Sciences (SPSS) software (version 22). The findings revealed that one-fifth of respondents (21.1%) patronized medicine stores without knowing their sickness. Respondents were aware of COVID-19 (95.2%), believed in its existence (84.0%) but perceived it as man-made (64.3%). COVID-19 also is regarded as deadly (60.7%). Less than half of the respondents observed all preventive measures (35.4%). The mode of transmission of COVID-19 was known (52.5%). Respondents preferred hospital patronage (67.4%). However, a significant number of respondents (60.1%) considered home medication appropriate. Home remedies used were ginger (29.5%), Senna occidentalis (25.8%), black seed (24.2%), holy water (21.3%), and staying home (31.2%). The study recommended building mutual trust between the government and the people. There is also a need to improve healthcare relations with people, integrate traditional and Western medicine, test home remedies with laboratory tests, and recommend further research.

**Keywords:** COVID-19, Home Medications, Health Beliefs, Nigeria,

### Introduction

Coronavirus disease of 2019 (COVID-19) is a new infectious disease (Nugraha et al., 2020). The World Health Organization (WHO) declared the disease a global pandemic on March 11<sup>th</sup>, 2020 (Wegbom et al., 2021). The pandemic presents a vast public challenge (Orisakwe et al., 2020; Olarinde & Amzat, 2021) and negative consequences for the humanities. Home treatment is commonly deployed against COVID-19 in Africa and is accepted in some African countries as an alternative method to prevent and cure COVID-19 (Marevesa et al., 2021). However, there is no available clinical trial to evaluate the efficiency of the herbals (Nugraha et al., 2020; National Centre for Complementary and Integrative Health, 2021; Wegbom et al., 2021).

COVID-19 started in Wuhan (China) in 2019 and spread between humans and animals (Orisakwe et al., 2020). According to WHO (2021), there have been 198,778,175 confirmed cases of COVID-19 globally as of August 3, 2021. On the same note, 4,235,559 recorded deaths as of August 3,

2021. Equally, in Nigeria, there were 175,264 confirmed cases of COVID-19, with 7,969 active COVID-19 cases and 2,163 recorded deaths as of August 3, 2021 (NCDC, 2021). Similarly, in Sokoto State, the study area, there have been 787 confirmed cases of COVID-19 and 28 recorded death cases as of August 3, 2021 (NCDC, 2021). While there have been treatment centers across the country, people also rely on home medication. Home medication in this context refers to consuming herbals, using traditional methods, spiritual methods, self-medicating, self-prescribing, self-consuming drugs without physicians' advice, using over-the-counter medication, and mostly with advice from friends/relatives/medicine vendors.

Following the first recorded case of COVID-19 in Nigeria, many Nigerians, like others around the world, turned to home remedies (Adegboyega, 2021). Despite numerous international efforts to combat the dangers of self-medication, many Africans did not view it as a problem. They believed that consuming herbal remedies could prevent and cure COVID-19 (Nugraha et al., 2020). Additionally, there was widespread confidence in the ability to self-medicate, leading to the adoption of home remedies for various reasons (Nugraha et al., 2020; Orisakwe et al., 2020). However, some herbal treatments may not be safe (National Centre for Complementary and Integrative Health, 2021). Despite this, people continued to purchase drugs from chemists, medicine stores, or pharmacies without consulting physicians (Wegbom et al., 2021). In the search for the best methods to prevent and treat COVID-19, traditional medicine was considered one option. Herbs, ingredients, and leaves were used medicinally for the prevention and treatment of COVID-19, showing positive results (Orisakwe et al., 2020; Nugraha et al., 2020; Villena-Tajada et al., 2021). According to the National Centre for Complementary and Integrative Health (2021), many people have sought alternative remedies to prevent and cure COVID-19 due to COVID-19 treatment expenses (Kabidul-Azam et al., 2020), fear of isolation and the lack of exact medicine approved for the prevention and treatments for COVID-19 (Wegbom et al., 2021). These remedies include essential oils, teas, vitamins, tinctures, herbs, and therapies. Furthermore, according to Orisakwe et al. (2020), other natural species are turmeric, ginger, and garlic. Among the leaves were guava, neem, and paw; they are well-known as anti-oxidant and anti-inflammatory.

Many policies were put in place at global, national, and state levels to prevent the spread of COVID-19. These include provisions for the availability of the vaccine across the country (Wegbom et al., 2021). Restrictions and banning inter-state traveling, gathering of people, use of sanitizers and face masks, among others. However, some people did not abide by these policies and practices or measures. People who wore facemasks in most villages or communities looked different, just like outsiders. Therefore, wearing a facemask was more commonly applied in the metropolis. More precisely, in government places, like hospitals, banks and other corporate organizations. Based on these backgrounds, this study was carried out at Arkilla, Wamakko Local Government Area of Sokoto State to explore the pattern of use of home medications against COVID-19. Therefore, specific objectives of the study are to assess the level of knowledge about COVID-19, to identify the perceived signs and symptoms of the disease, and to determine the home remedies used in its prevention and treatment. In line with the mentioned objectives, the study identifies three (3) sets of hypotheses. Thus:

- i. **Ho:** There is no relationship between home medication and the individual level of education.
- ii. **Ho:** There is no relationship between home medication and individual perception toward home medications.
- iii. **Ho:** There is no relationship between the perception of COVID-19 and the people's reaction to the disease

## Literature Review

Severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) is commonly known as COVID-19 as declared by WHO (Orisakwe et al., 2020). Orisakwe et al. (2020) further revealed that the primary infectious source is pneumonia in patients infected with the virus. COVID-19 is a novel and rapidly evolving disease (Abayomi & Abdurrazzaq, 2021) that overwhelmed the world's health system (Amzat et al., 2020; Amzat & Razum, 2022), and it disrupts normal life rhythms (Han & Curtis, 2020). Many people believe the virus is unreal (Nwankwo, 2021) due to political distrust (Nwankwo, 2021; Ezebe et al., 2020). As such, these could be the reasons for the rejection of government policies (Han & Curtis, 2020; Wegbom et al., 2021). The diagnoses of COVID-19 based on anamnesis remain problematic (Silveira et al., 2020). Misinformation contributed to the spread of the diseases (Nwankwo, 2021; Ezebe et al., 2021). Due to political distrust, many people believe the virus is unreal (Nwankwo, 2021; Ezebe et al., 2020). As a result, many people who disobeyed the guidelines were arrested (Ezebe et al., 2020) during the lockdown period. Lockdown is helpful (Amzat et al., 2020), but people's perception is the problem. Nigeria is among the countries with public distrust of government (Han & Curtis, 2020; Ezebe et al., 2020).

Several authors have used the concept of home medication differently, referring to it as self-medication, self-prescription, and non-prescription (Amzat and Razum, 2014; Limaye et al., 2017). Other names are counter-medication for self-care (Wegbom et al., 2021) and self-consuming medication without getting physician advice (Ansar, 2018). However, in this context, all of these names were regarded as home medication. WHO (2016) defined self-medication as taking drugs to treat self-diagnosed disorders or symptoms or the intermittent or continued use of prescribed drugs for chronic or recurrent diseases or symptoms. Limaye et al. (2017) most commonly define self-medication as the use of drugs without prescriptions. Other definitions for self-medication are the drugs used with self-initiative, without consultations of healthcare professionals, with lay advice, as recommended by friends/relations, or after demands from the pharmacist or medicine vendors (Ansar, 2018; Wegbom et al., 2021).

However, self-medication is recognized as a global health issue (Afri et al., 2015; WHO, 2016; Grigoryan et al., 2015), with individuals engaging in the practice across all continents (Gnanasan, 2016; Sharif, 2015; Ansar, 2018). This behavior has been particularly prevalent during the COVID-19 pandemic, driven by factors such as fear of stigmatization, discrimination, quarantine, infection, media influence, peer pressure, proximity to hospitals, and the fear of isolation (Wegbom et al., 2021). Wegbom et al. (2021) also noted that Nigeria had a high rate of self-medication even before the pandemic, with prevalence rates ranging from 52.1% to 92.3%.

Self-medication is cost-effective, time-efficient, and easy to patronize around the world. It enables patients to easily access medications. In addition, some people believe that minor cases do not require spending much money or precisely undergoing an unnecessary due process attached to healthcare facilities. Many factors are responsible for triggering home medication. These include anxiety resulting from COVID-19 (Wegbom et al., 2021), patient attitudes, and the high cost of the healthcare setting (KabidulAzam et al., 2020). Furthermore, Limaye et al. (2017) identified time constraints, mild diseases, knowledge about the sickness, experience, lack of access to healthcare, problems associated with physicians, and conveniences. In addition, having previous prescriptions is the reason for home medication. Wegbom et al. (2021) reported that emergency illness, delay in receiving hospital services, and distance to health facilities are the reasons for home medications.

Social media has fueled unscientific beliefs, such as when the monarch Attah of Igala, Idakwo Michael Ameh Obarni, suggested using salt as a remedy against COVID-19 (Adegboyega, 2021).

Similarly, individuals with higher education and income levels are more likely to engage in self-medication. Additionally, the fear of being labeled or identified as having a serious illness like COVID-19 has led some people to turn to home remedies (Adegboyega, 2021). Home medication is associated with a variety of problems and implications, according to several studies. However, people with a high level of technical expertise or education used fewer plants for treatments compared to those with a lower level of education (Villena-Tajada et al., 2021). The challenges associated with self-medication include the simultaneous use of multiple drugs, incorrect self-diagnosis, misdiagnosis, adverse drug reactions, incorrect dosages, improper methods of administration, risk of dependence and abuse, selecting the wrong therapy, and the potential for skin problems and allergies that can worsen the situation, among other issues.

According to Limaye et al. (2017), the public often overlooks the potential risks associated with home medication; some individuals experience adverse drug reactions, while others waste their money and prolong their suffering. Some engage in inadequate dosage, the short-term duration for medical treatment, stopping treatment upon improvement from the sickness, sharing of medicine, and therapeutic failure. Undoubtedly, home medication often leads to inaccurate diagnoses, drug reactions, and increased morbidity rates. The fact that the rate is higher in developing countries raises serious concerns. Many people report symptoms such as cough, cold, body pains, fever, and headache, which are among the symptoms of COVID-19 and affected much of the world in 2020 (Habib et al., 2021). It's important to note that sources for home medications often include friends, relatives, pharmacists, or medicine vendors (Limaye et al., 2017). Additional factors influencing the use of home remedies include time and financial constraints, access to healthcare, issues with healthcare providers, and fear of illnesses like HIV and COVID-19 (KabidulAzam et al., 2020). Common COVID-19 symptoms include fever, fatigue, and dry cough, with additional symptoms such as aches, pains, runny nose, nasal congestion, diarrhea, and sore throat (Orisakwe et al., 2020).

### **Theoretical Framework**

This study employed the Health Belief Model (HBM) as a theoretical framework. Rosenstock et al. (1994) said that the model is an updated version of the original schema. Meanwhile, the HBM is a health-specific social cognition model (Ajzen, 2007). According to Abraham and Sheraan (2005), there are seven (7) components of HBM. These include perceived susceptibility, severity, benefits, barriers, self-efficacy, cues to action and socio-economic variables (income, education, marital status, sex, etc.).

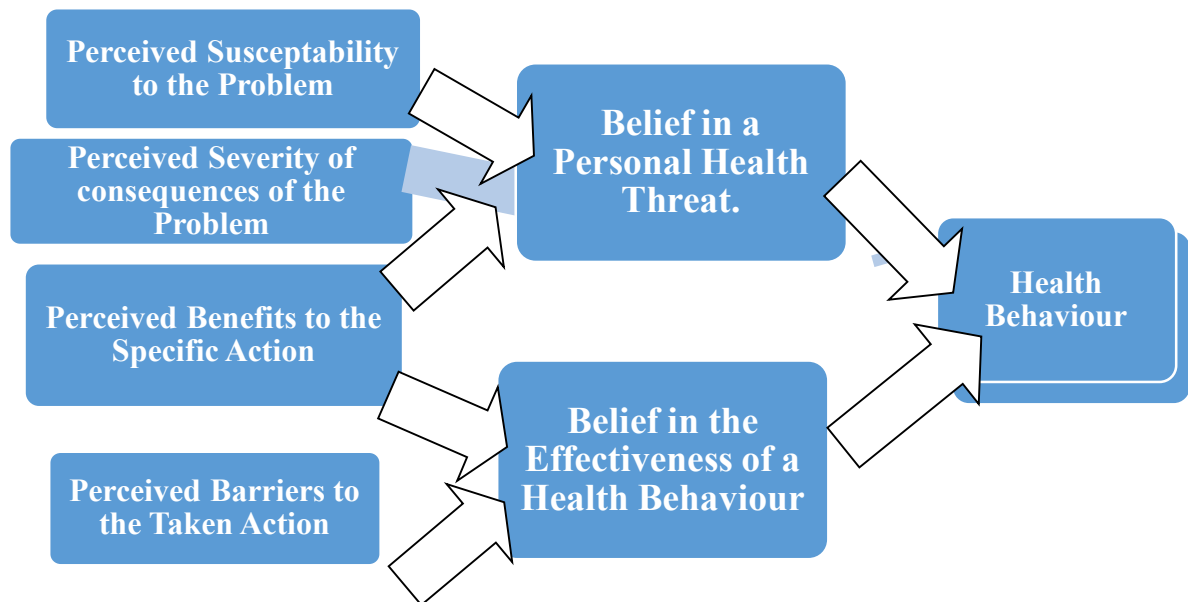
Perceived susceptibility is linked to risk perception. Subjective thinking led people to perceive COVID-19 as another coughing sickness that they could manage at home with remedies. People used self-medication, herbals, and supplements as treatments for COVID-19 because of their risk perceptions. However, perceived severity indicates the seriousness of the illness and the need for immediate action. COVID-19 manifests with symptoms like pain, sore throat, runny nose, and nasal congestion (Orisakwe et al., 2020). However, individuals have prior experiences with fever, cough, cold, and headache; the fear of quarantine or isolation, stigma, and discrimination (Wegbon et al., 2021), along with the urgency to take immediate action, lead to the adoption of home medication practices. The perceived threat is influenced by the perception of severity and susceptibility, which is a combination of these two perceptions. Therefore, people see COVID-19 as any other sickness, and there is a need to take immediate action. The problem related to proximity to the hospital and the influence of friends and family results from many people adopting home remedies in COVID-19 cases that are unknown.

The term "perceived benefit" refers to the subjective benefit that comes with taking health action. Therefore, it is associated with the belief that the disease can be cured. People perceive COVID-19 as just another illness, and they ultimately want to avoid falling ill due to their responsibilities. They know when they are diagnosed with COVID-19; definitely, they will be isolated and could be stigmatized and discriminated against. Hence, the better option is to use home remedies to prevent and cure COVID-19. On the other hand, the perceived barrier signifies the perceived negative aspect of taking action. People are aware that this is not the right step to handle COVID-19, but they still believe it can work because of their self-efficacy. Self-efficacy is the issue of self-confidence regarding the action to take. People often resort to self-medication, which involves consuming herbs believed to be effective against COVID-19. Expectation has to do with quick actions to prevent and treat COVID-19 within the stipulated time.

This theory is useful in explaining the concept of home medications. Hence, the strength of this model lies in its applicability in the present context. Nowadays, people consider malaria, cough, cold, and headache as mild cases. People often view these conditions as minor, leading them to perceive them as low-risk. This group of individuals, who consider cough, cold, and headache to be mild conditions, view hospital visits for such mild cases as a waste of time and resources. At the same time, they perceived themselves as capable of home treatment without considering the implications or failures of their actions. These people are confident in their actions and believe that they could serve as quick remedies (Wegbom et al., 2021). These reasons explain why many people practice home medication. Additionally, individuals fear contracting COVID-19. This fear prevents them from visiting the hospital due to the potential risks involved (KabidulAzam et al., 2020). They believe the COVID-19 test is difficult, they have no trust in healthcare providers, and some do not believe the researcher's findings. As a result, many people declined the COVID-19 test.

**Figure 1: Health Belief Model Framework**

This research adopted the following diagrammatic description as a conceptual framework/model:



The above model includes various diagrams that illustrate the causal connections between the propositions of HBM. The initial thrusts of the model illustrate how health conditions begin with

a simple perception of the problem, the consequences and benefits of taking action, and the barriers to such action. These perceptions lead to the belief in health threats and the effectiveness of the health behavior. Finally, health behavior kicks in to manage the health condition.

Using the above model to explain home medication practices against COVID-19 in the Arkilla area of Sokoto State, people initially perceived the virus as a routine health challenge, similar to past experiences with catarrh. This perception of the disease's severity prompted people to seek solutions, often leading them to adopt traditional remedies. Based on personal experience or recommendations from friends and relatives, many believed that seeds, herbs, ingredients, and other supplements could prevent and treat COVID-19 at home. The perception that these traditional methods were more effective and offered quicker relief than Western medicine further reinforced this behavior. Furthermore, the stigma and livelihood disruptions associated with COVID-19, as well as the barriers to social interaction imposed by isolation and quarantine, made home remedies an appealing option. These remedies were seen as more accessible, affordable, and effective, leading many to prefer them over conventional treatments.

### **Methodology**

This is quantitative research with data sourced primarily from the sick people and their relatives who patronized the Rahama medicine store during the study period (May & June, 2021) at Arkilla in Wamakko Local Government Area, Sokoto State. Arkilla has 26 (as of the 2023 general elections) polling units and is one ward out of the eleven (11) wards in Wamakko LGA, covering an area of 697 km<sup>2</sup> and characterized by hills, sandy savannah, numerous rivers, streams, and stream dams. The 2006 census estimates the total Wamakko population at 179,619, and the Population Growth Calculator, 2022, uses the 3.0 growth rate of Sokoto State to estimate the population at 288,236 in 2022. The sample size was derived using the Raosoft calculator with a confidence level of 95, a margin error of 5%, and a distribution response of 50%, which arrived at 384 as the study sample. Hence, 384 structured questionnaires were distributed to the respondents based on systematic random sampling using an interval of two between the respondents. The questionnaire was administered in the form of an interview with two graduate aides (male and female) within two months. Data collection is done through questionnaire administration with the help of two research assistants. The questionnaire has two (2) sections. Section A covered the socio-demographic characteristics of the respondents, while Section B covered the objectives of the study. Therefore, the study analyzed 356 questionnaires (92.7%) via Statistical Package for Social Sciences (SPSS) software version 22. The remaining 28 questionnaires were discarded based on the ground that more than 70% of the questions were left unanswered. The researcher sought and obtained ethical clearance from the Sokoto State Ministry of Health. Additionally, the researcher adhered to all other ethical standards, including privacy, confidentiality, voluntary consent forms, the right to withdraw, and the COVID-19 protocols. The study used cross-tabulation in testing the hypothesis.

### **Results**

The study presents the data obtained from this study in the sub-headings below.

#### **Socio-Demographic Characteristics of Respondents (N=356)**

The respondents' socio-demographic characteristics revealed that men were the dominant respondents (57.9%). Equally, one-third of the respondents were adolescents (34.3%) as their ages fall within 18-25 years. Those aged 26-33 years and 34-41 years also accounted for 24.4%, respectively. This finding indicates that the majority of respondents were young individuals. In terms of marital status, married respondents were 48.9%. Single respondents accounted for

42.1%. Most of the respondents were Muslims (91.0%), Hausa by tribe (69.7%), and obtained post-secondary qualifications (62.9%). The dominant respondents were civil servants (55.1%), while more than one-fifth (21.1%) were traders. On the same note, their level of education is high because 2/3 of the respondents had tertiary qualifications and more than half of them were civil servants. The income level of the respondents shows that one-third (33.4%) of the respondents were earning N45, 001, and above. Also, those who generated unspecified amounts account for 27.8%; while those within the categories of N1-N15, 000 and N15, 001-N30, 000 each accounted for significant proportions (14.3% each) of the respondents.

**Table 1: Home Medication: Knowledge of COVID-19.**

| Questions                                                                             | Responses                       | Frequency  | Percentage  |
|---------------------------------------------------------------------------------------|---------------------------------|------------|-------------|
| Are you aware of COVID-19?                                                            | Yes                             | 339        | 95.2        |
|                                                                                       | No                              | 17         | 4.8         |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |
| Do you believe in the existence of COVID-19?                                          | Agreed                          | 299        | 84.0        |
|                                                                                       | Disagreed                       | 33         | 9.3         |
|                                                                                       | Undecided                       | 24         | 6.7         |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |
| How do you perceive COVID-19?                                                         | Manmade Disease                 | 229        | 64.3        |
|                                                                                       | Natural Disease                 | 127        | 35.7        |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |
| How do you consider the disease?                                                      | Deadly disease                  | 216        | 60.7        |
|                                                                                       | Political Disease               | 129        | 36.2        |
|                                                                                       | Others                          | 11         | 3.1         |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |
| Which of the following did you commonly use against COVID-19?                         | Regular hand washing            | 76         | 21.3        |
|                                                                                       | Use of face mask                | 32         | 9.0         |
|                                                                                       | Use of sanitizers               | 11         | 3.1         |
|                                                                                       | Movement restriction            | 8          | 2.2         |
|                                                                                       | Observing physical distance     | 6          | 1.7         |
|                                                                                       | All of the above                | 126        | 35.4        |
|                                                                                       | None of the above               | 97         | 27.3        |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |
| Which of the following did you restrict yourself from during COVID-19?                | Attending wedding ceremonies    | 43         | 12.1        |
|                                                                                       | Viewing centers                 | 31         | 8.7         |
|                                                                                       | Attending meetings              | 23         | 6.5         |
|                                                                                       | Attending market                | 18         | 5.1         |
|                                                                                       | Attending worshipping places    | 5          | 1.4         |
|                                                                                       | <b>Total</b>                    | <b>236</b> | <b>66.3</b> |
| The usual mode of transmission of COVID-19 is through which of the following options? | None of the above               | 236        | 66.3        |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |
|                                                                                       | Coughing                        | 72         | 20.2        |
|                                                                                       | Sneezing                        | 36         | 10.1        |
|                                                                                       | Hands shakings                  | 18         | 5.1         |
|                                                                                       | Sharing of contaminated objects | 16         | 4.5         |
|                                                                                       | Saliva                          | 4          | 1.1         |
|                                                                                       | <b>Total</b>                    | <b>187</b> | <b>52.5</b> |
|                                                                                       | All of the above                | 187        | 52.5        |
|                                                                                       | <b>Total</b>                    | <b>356</b> | <b>100</b>  |

Table 1 presents the respondents' knowledge assessment of COVID-19. The table shows that most of the respondents (95.2%) were aware of the existence of COVID-19; a majority of them (64.3%)

perceived it as man-made and agreed with its existence (84.0%); 60.7% of the respondents looked at it as deadly, while a significant number (36.2%) of them looked at COVID-19 as political. These findings demonstrate that while people possess knowledge about COVID-19, they lack trust in its public presentation. Therefore, the respondents may not adhere to the various government policies on COVID-19, as they lack confidence in politicians. One-third of the respondents (35.45) observed regular hand washing, physical distance, movement restrictions, face mask-wearing, and sanitizers. One-fifth of the respondents (21.3%) applied only regular handwashing. These were the guidelines provided to prevent and stop the spread of COVID-19 in the country.

Similarly, a significant proportion only used some preventive measures (17.1%). In addition, two-thirds of the respondents (66.3%) did not restrict themselves to meetings, wedding ceremonies, viewing centers, markets, and worship places. The refusal to adhere to COVID-19 preventive policies could potentially complicate the control of the virus. It could result in many people dying without a record. Therefore, the perceived mode of transmission of COVID-19 is through coughing (20.2%), sneezing (10.1%), handshaking (5.1%), and contaminated objects (4.5%).

**Table 2: Perceived Signs and Symptoms of COVID-19**

| Questions                                                                | Responses                           | Frequencies | Percentages |
|--------------------------------------------------------------------------|-------------------------------------|-------------|-------------|
| Which of the following are the signs and symptoms of COVID-19?           | Coughing                            | 58          | 16.3        |
|                                                                          | Fever                               | 22          | 6.2         |
|                                                                          | Headache                            | 11          | 3.1         |
|                                                                          | Fatigue                             | 6           | 1.7         |
|                                                                          | Loss of taste & smell               | 6           | 1.7         |
|                                                                          | Sore throat                         | 2           | 0.6         |
|                                                                          | Runny nose                          | 2           | 0.6         |
|                                                                          | Diarrhea                            | 2           | 0.6         |
|                                                                          | Some of the above                   | 129         | 36.2        |
|                                                                          | All of the above                    | 112         | 31.5        |
|                                                                          | None of the above                   | 6           | 1.7         |
|                                                                          | <b>Total</b>                        | <b>356</b>  | <b>100</b>  |
| Where do you prefer to go for treating any of the symptoms above         | Hospital                            | 240         | 67.4        |
|                                                                          | Home medication                     | 77          | 21.6        |
|                                                                          | Chemist/ Medicine store             | 29          | 8.1         |
|                                                                          | Pharmacy                            | 10          | 2.8         |
|                                                                          | <b>Total</b>                        | <b>356</b>  | <b>100</b>  |
| Which of the drugs do you use following the perceived COVID-19 symptoms? | Anti-Malaria                        | 140         | 39.3        |
|                                                                          | Antibiotic                          | 83          | 23.3        |
|                                                                          | Cough Medications                   | 63          | 17.7        |
|                                                                          | Anti- Diarrhoea                     | 29          | 8.1         |
|                                                                          | Others (Pain relief and analgesics) | 41          | 11.6        |
|                                                                          | <b>Total</b>                        | <b>356</b>  | <b>100</b>  |

Table 2 presents the perceived signs and symptoms of COVID-19. The findings revealed that one-third (1/3) of the respondents (36.2%) stated that fever, fatigue, coughing, headache, loss of taste and smell, sore throat, runny nose, and diarrhea are some signs and symptoms of COVID-19. By implication, they are disputing some of those variables as not the signs and symptoms, despite one-third of the respondents (31.5%) stating all those mentioned (fever, fatigue, coughing, headache, loss of taste and smell, sore throat, runny nose, and diarrhea) as the signs and symptoms for COVID-19. Consequently, the majority (67.4%) of the respondents preferred the

treatment of these signs and symptoms in the hospital as one-third (1/3) of the respondents (21.6%) treated these signs with home medications, which indicated that the respondents knew the best way to treat COVID-19 was in the hospital and significant proportions (21.6%) practiced home remedies against COVID-19.

Table 2 further reveals that the highest drug purchased was anti-malaria (39.3%), antibiotics (23.3%), and cough syrup (17.7%). These indicated that the respondents knew the right place to treat people with signs and symptoms of COVID-19 but along the line, they regarded home medication as appropriate. By implication, consuming home remedies could cure COVID-19 but some herbals are unsafe to consume and many of them lack clinical trials to evaluate the efficiency of those herbals. As such, another form of sickness could be manifest.

**Table 3: Home Remedies Used in Prevention/Treatment of Perceived COVID-19 Symptoms**

| Question                                                                               | Options                            | Frequency  | Percentage |
|----------------------------------------------------------------------------------------|------------------------------------|------------|------------|
| Which of the following do you commonly use for the prevention of COVID-19?             | Use of Ginger                      | 105        | 29.5       |
|                                                                                        | Use of Garlic                      | 60         | 16.9       |
|                                                                                        | Use of Lemon                       | 48         | 13.5       |
|                                                                                        | Use of Hot water                   | 32         | 9.0        |
|                                                                                        | Use of Clove                       | 27         | 7.6        |
|                                                                                        | Use of Salt                        | 10         | 2.8        |
|                                                                                        | Others                             | 74         | 20.8       |
|                                                                                        | <b>Total</b>                       | <b>356</b> | <b>100</b> |
| Which of the following leaves do you commonly use or suggest against COVID-19?         | Senna occidentalis ("Sanga-Sanga") | 92         | 25.8       |
|                                                                                        | Orange Leaf                        | 61         | 17.1       |
|                                                                                        | Moringa Leaf                       | 44         | 12.4       |
|                                                                                        | Papaw Leaf                         | 23         | 6.5        |
|                                                                                        | Bitter Leaf                        | 21         | 5.9        |
|                                                                                        | Mango Leaf                         | 20         | 5.6        |
|                                                                                        | Limp Leaf                          | 18         | 5.1        |
|                                                                                        | Others                             | 77         | 21.6       |
|                                                                                        | <b>Total</b>                       | <b>356</b> | <b>100</b> |
| Which of the following methods could you employ or suggest for a person with COVID-19? | Staying at home                    | 111        | 31.2       |
|                                                                                        | Locally isolated in a hot room     | 46         | 12.9       |
|                                                                                        | Use steam inhaling                 | 33         | 9.3        |
|                                                                                        | Staying under the sunlight         | 10         | 2.8        |
|                                                                                        | All of the above                   | 21         | 5.9        |
|                                                                                        | None of the above                  | 67         | 18.8       |
|                                                                                        | Some of the above                  | 68         | 19.1       |
|                                                                                        | <b>Total</b>                       | <b>356</b> | <b>100</b> |
| Which of these traditional methods do you employ against COVID-19                      | Inhaling/Steaming                  | 67         | 18.8       |
|                                                                                        | Use of Camel urine                 | 47         | 13.2       |
|                                                                                        | Use of Camel milk                  | 45         | 12.6       |
|                                                                                        | Use of Goat milk                   | 22         | 6.2        |
|                                                                                        | Others                             | 15         | 4.2        |
|                                                                                        | None of the above                  | 160        | 44.9       |
|                                                                                        | <b>Total</b>                       | <b>356</b> | <b>100</b> |
| Which of the other supplementary remedies are you using for the                        | Use of Black seed (Habbatussaudah) | 86         | 24.2       |
|                                                                                        | Use of holy water (Zam-zam)        | 76         | 21.3       |
|                                                                                        | Use of Goya (Zaitun oil)           | 47         | 13.2       |

|                                                                                              |                                               |            |            |
|----------------------------------------------------------------------------------------------|-----------------------------------------------|------------|------------|
| prevention or/and treatment of COVID-19?                                                     | Use of washed ink for Qur'an verses (Tauwada) | 44         | 12.4       |
|                                                                                              | Use of pure honey                             | 37         | 10.4       |
|                                                                                              | Others                                        | 66         | 18.5       |
|                                                                                              | <b>Total</b>                                  | <b>356</b> | <b>100</b> |
| How do you consider the use of home medication for the prevention and treatment of COVID-19? | Appropriate                                   | 214        | 60.1       |
|                                                                                              | Not appropriate                               | 137        | 38.5       |
|                                                                                              | Undecided                                     | 5          | 1.4        |
|                                                                                              | <b>Total</b>                                  | <b>356</b> | <b>100</b> |

Table 3 presents home remedies for the prevention and treatment of perceived COVID-19 symptoms. The study revealed that ginger is the most commonly used by respondents (29.5%) and Senna Occidental's "Sanga-Sanga" (25.8%) in COVID-19 prevention and treatment. One-third (1/3) of the respondents suggested that staying at home (31.2%) is the answer when a person is at risk of COVID-19. The use of camel urine, camel milk, goat milk, or inhaling steam is not among the remedies used by the respondents for COVID-19. However, the study findings indicate that the highest percentage of respondents used black seed (Habbatussaudah) (24.2%) and holy water (zam-zam) (21.3%) as COVID-19 remedies. This shows that these herbals, dietaries, supplements, or natural species are things people use to prevent COVID-19 because individuals believe that home remedies could cure the symptomatic manifestation of the pandemic. Again, people continue patronizing home medication because they are socialized to have much trust in it; if compared to the conventional way. However, the treatment modalities of home remedies remain non-replicable, off-record, unmeasurable and unknown. Regarding whether home medication is appropriate or not, more than three out of five (3/5) of the respondents (60.1%) considered it appropriate. Nonetheless, significant proportions (38.5%) considered it inappropriate. This shows that people have a strong belief in the utilization of home remedies against COVID-19.

### Hypotheses Testing

This section presented the cross-tabulation of three (3) sets of hypotheses. The purpose is to either accept or reject the study hypotheses.

#### Hypothesis 1

**Ho:** There is no relationship between Home Medication and the individual level of education.

The perception was cross-tabulated and presented in Table 4.

**Table 4: Relationships between Home Medication and the Individual Level of Education.**

|                                  |                       | Perception of Home Medication  |                 | Total           |     |
|----------------------------------|-----------------------|--------------------------------|-----------------|-----------------|-----|
|                                  |                       | Appropriate                    | Not Appropriate | Other (Specify) |     |
| <b>Educational Qualification</b> | No Formal Education   | 10                             | 2               | 1               | 13  |
|                                  | Qur'an Education only | 25                             | 13              | 0               | 38  |
|                                  | Adult Education       | 3                              | 2               | 0               | 5   |
|                                  | Primary Education     | 4                              | 4               | 0               | 8   |
|                                  | Secondary Education   | 50                             | 18              | 0               | 68  |
|                                  | Tertiary Education    | 122                            | 98              | 4               | 224 |
| Total                            |                       | 214                            | 137             | 5               | 356 |
| <b>α: 0.05, df:10</b>            |                       | <b>Calculated Value:16.165</b> |                 |                 |     |

Table 4 revealed that the calculated chi-square value (**16.165**) is less than the Table value (**18.307**). It indicated that there is no relationship between home medication and the individual level of education. Hence, the null hypothesis is accepted.

## Hypothesis 2

**Ho:** There is no relationship between home medication and individual perception toward home remedies.

Furthermore, another hypothesis was cross-tabulated for Individual levels of income and home medication practices in Table 5.

**Table 5: Perception of the Use of Home Ingredients for COVID-19**

|                               |                                                    | Perception of Home Ingredients<br>For COVID-19 |                 |           | Total |
|-------------------------------|----------------------------------------------------|------------------------------------------------|-----------------|-----------|-------|
|                               |                                                    | Appropriate                                    | Not Appropriate | Undecided |       |
| <b>Supplementary Remedies</b> | Use of Goya ( <i>Zaitun Oil</i> )                  | 33                                             | 13              | 1         | 47    |
|                               | Use of Black Seed ( <i>Habbatussaudah</i> )        | 58                                             | 28              | 0         | 86    |
|                               | Use of Holy Water ( <i>Zam-Zam</i> )               | 34                                             | 42              | 0         | 76    |
|                               | Use of Qur'an verses Washed ink ( <i>Tauwada</i> ) | 29                                             | 15              | 0         | 44    |
|                               | Use of Pure Honey                                  | 28                                             | 9               | 0         | 37    |
|                               | Other (Specify)                                    | 32                                             | 30              | 4         | 66    |
| Total                         |                                                    | 214                                            | 137             | 5         | 356   |

**$\alpha: 0.05$ , df:10 Calculated Value 32.309**

The calculated chi-square value accounted for 32.309. The value is greater than the table values, which accounted for 18.307. In this context, the study accepted the alternate hypothesis, which stated a relationship between home medication and individual income level, and rejected the null statement, which established no nexus between the two.

## Hypothesis 3

**Ho:** There is no relationship between the perception of COVID-19 and the people's reaction to COVID-19. This was cross-tabulated in response to accept or reject our hypothesis in Table 6.

**Table 6: Relationship between COVID-19 Perception and the People's Reaction to Disease.**

|                            |                  | Restricted Practices |          |         |                 |                    |                  | Total             |
|----------------------------|------------------|----------------------|----------|---------|-----------------|--------------------|------------------|-------------------|
|                            |                  | Meetings             | Weddings | Markets | Viewing Centers | Worshipping Places | All of the Above | None of the Above |
| <b>COVID-19 Perception</b> | Man-Made Disease | 8                    | 31       | 6       | 13              | 3                  | 78               | 90                |
|                            | Natural Disaster | 15                   | 12       | 12      | 18              | 2                  | 38               | 30                |
| Total                      |                  | 23                   | 43       | 18      | 31              | 5                  | 116              | 120               |

**$\alpha: 0.05$ , df:6 Calculated Value: 30.614**

The calculated chi-square value from the Table is **30.614**; the value is greater than the table value (**12.592**). In the background, the study accepted alternated hypotheses. It stated that there are relationships between the public perception of COVID-19 and the nature of reaction to the disease. On the same note, it rejected the null hypothesis, which stated that there is no relationship between the perception of COVID-19 and the mode of reaction to the disease.

### **Discussion**

The perception of home medication against COVID-19 among people living in the Arkilla area, Sokoto State of Nigeria, is similar to the management of cough using complementary medicine (home remedies) and orthodox medicine. Therefore, the respondents observed no reason to visit the hospital when they experienced COVID-19-related symptoms. However, some constructs of the health belief model—perceived severity and perceived barriers—provide possible reasons why the residents do not see the importance of seeking care at the hospital. Those who do not perceive COVID-19 symptoms as severe may seek alternative care rather than visit the hospital. Even when the symptoms are severe, some perceived barriers such as permission from the head of the family, abandoning daily activities, and stigmatization may further hamper the need to visit the hospital. This corroborates the findings of Limaye et al. (2017) who say that people will continue practicing home remedies and ignore the implications attached to home remedies.

However, almost all the respondents were aware of the existence of COVID-19 based on the assessment of their knowledge of COVID-19. This finding is consistent with the Habib et al. (2020) study in Northern Nigeria, where 65.38% knew COVID-19. These findings may be related to the characteristics of the respondents. The majority of the respondents in this study have tertiary qualifications, which confirms Habib et al.'s (2020) study, in which 57.3% had tertiary qualifications.

On the contrary, the nature of their work (civil service) contradicted Habib et al. (2020), in which only 20% of the respondents reported being civil servants. The socioeconomic characteristics of the respondents could be the factors responsible for the rationality thinking advocated by the health belief model. Still, Wegbom et al. (2021) attributed the factors to the policies that were in place to educate people on COVID-19 across the globe from WHO by providing updated information to the public on the number of infected people, signs, and symptoms, provision of vaccines and national policies information by the National Centre for Disease and Control (NCDC). Also, there are measures and programs initiated by the States and the Federal Government. These include movement restrictions, banning interstate traveling, social gathering restrictions, and work-from-home policy. However, because the South West is the most affected region in Nigeria, many people are unaware of these updates. As a result, most people refused to comply with COVID-19 preventive measures in Arkilla Sokoto. Equally, many people mistrust government policies on COVID-19 (Habib et al., 2020; Ezebe et al., 2020). It is disheartening that the lack of trust prompts individuals to take different precautions, such as using supplements to strengthen their immune system (Adegboyega, 2021). Marevesa et al. (2021) noted that mistrust could increase the reliance on home medication against conventional methods.

Almost two-thirds of the respondents perceived COVID-19 as man-made. The findings contradict Habib et al. (2020) reported that only 36% of respondents perceived COVID-19 as man-made but a punishment ordained by God (60%). Habib et al. (2020) reported over 40% did not agree that the disease originated from animals but most respondents believed in its existence.

The theory of perceived severity and the need for immediate actions guides the practice of self-medication for COVID-19 prevention and treatment. In addition, most of the respondents

accepted COVID-19 as a deadly disease, although more than one-third of respondents believed COVID-19 is political. This finding concurred with Habib et al. (2020), who reported over 50% insisted on attending the Friday congregations despite social distance and restrictions on gatherings imposed by the Federal Government of Nigeria. Still, Han and Curtis (2020) reported that 60% disagreed with most of the safety measures against COVID-19 because of the mistrust.

Due to the perceived benefits of infection, one-third of the respondents observed regular hand washing, physical distance, movement restrictions, and the wearing of face masks and sanitizers. These actions demonstrated their understanding and reaction to COVID-19 (refer to Table 1). Equally, one out of five respondents restricted themselves to regular hand washing alone, which they believed to be the best method to prevent COVID-19. This is in line with the findings of Habib et al. (2020), who reported that 65.38% only used some of those preventive measures like regular hand washing, use of face masks, sanitizers, movement restrictions, and observing physical distance. These categories agreed on the existence of COVID-19 and took necessary preventive measures.

On the other hand, one-third of the respondents do not restrict themselves to meetings, wedding ceremonies, viewing centers, markets, and attending worshipping places. This category of people was not convinced of the existence of COVID-19. Furthermore, those who acknowledged the existence of COVID-19 adhered to movement restrictions, hand-washing practices, and observance of physical distances, as evidenced by the Habib et al. (2020) report, which found that approximately 50% of these individuals attended Friday congregation prayer. According to Ezebe et al. (2020), 86% distrust government initiatives on COVID-19. People are rejecting quarantine, isolation, and social distance due to COVID-19. There are also mixed feelings about the existence and restrictions of the government's protocol. Many people defied government instructions to prevent and control COVID-19 despite sermons by religious leaders (Ezebe et al., 2020). Despite the perceived negative aspect of taking action, it is difficult and could be hard to stop COVID-19 within a short period. This is because the restriction of movements and attending working places has adverse effects on the livelihood of the people which triggered poverty and some form of social problems based on projection (Amzat et al., 2020).

According to the dominant respondents, COVID-19 was transmitted through coughing and fever. This finding is consistent with Abayomi and Abdurrahman (2021), who reported a cough of 19.3% and a fever of 13.7%. However, the study findings revealed that the respondents were knowledgeable about the COVID-19 mode of transmission. Hence, they are rational and could assess the severity and threat of COVID-19.

Table 2 pertains to the signs and symptoms of COVID-19. The findings revealed that more than one-third of the respondents (36.2%) were not fully aware of the signs and symptoms of COVID-19 (see Table 2). Notwithstanding, almost one-third of respondents are aware of these signs and symptoms of COVID-19, which is consistent with Habib et al.'s (2021) findings. It equally indicated that respondents know few ways of transmitting the disease. Hence, it could serve as a base for contacting COVID-19. Equally, Orisakwe et al. (2020) noted these common ways (cough and fever) in which COVID-19 transmits but all of them were not considered dangerous by the respondents. The disease continues spreading and, hence, becomes a global challenge (Wegbom et al., 2021). On the same note, people ignored many of the disease's implications. Thus, incorrect self and wrong diagnoses; reactions to drugs; incorrect dosage and the manner of administration; risk of dependence and abuses; and lack of the wrong choice of therapy (Limaye et al., 2017).

Two-thirds of the respondents (67.4%) preferred treatments for these signs and symptoms of COVID-19 in the hospital. It may be due to their orientations, locations, education, or jobs. On the

contrary, one-fifth of the respondents (21.6%) preferred to treat these signs and symptoms with home medications. It helps by increasing anti-oxidant molecules, body enzymes and protecting body cells.

Table 3 shows how home remedies are used to prevent and treat perceived COVID-19. The study revealed that ginger is the highest preventive method used by respondents (29.5%). This finding concurred with Nugraha et al. (2020), in which people used the tumeric plant belonging to the ginger family against COVID-19. In addition, this finding concurred with Orisakwe et al. (2020) and Marevesa et al. (2021). Respondents patronized Senna Occidental's "Sanga-Sanga" (25.8%) in the prevention and treatment of COVID-19. On the other hand, Orisakwe et al. (2020) reported the use of neem leaves, paw leaves, and orange leaves against COVID-19, which contradicts the findings of Marevesa, who revealed the use of guava leaves, tobacco snuff, moringa, and lemon leaves for COVID-19. These traditional items have been in practice for the past decades and are positive (Silveira et al., 2020). Most of the sources for home medications are family relations, friends, pharmacists or medicine vendors (Limaye et al., 2017), traditions, traditional healers, and spiritual guides. Similarly, one-third of respondents (31.2%) reported staying at home when suspected of having COVID-19. This finding concurred with Wegbom et al. (2021), Silveira et al. (2020) and Orisakwe et al. (2020) by using natural species against COVID-19. Some scientists also supported using natural species against COVID-19 (Orisakwe et al., 2020).

Equally, other segments revealed that camel urine, camel milk, goat milk, and steam inhaling were not among the preventive and treatment methods for COVID-19 (44.9%). On the contrary, the findings revealed black seed "Habbatussaudah" (24.2%) and holy water "Zamzam" (21.3%) as the dominant forms of the supplementary methods used by the respondents in the prevention and treatment of COVID-19. This is not surprising when we consider the influence of culture, traditions, and environments. Most of the respondents of this study were Muslim (91.0%) living in the Sokoto metropolis and Hausa by Tribe (69.7%). The study focused on the residents of the former Sokoto (Sheik Usmanu Bn Fodiyo), thus accounting for the influence of religion, tradition, and environment. Contrary to this; Adegboyega (2021) reported alcohol and honey among the items for prevention and treatment of COVID-19.

In certain cases, home medication may prove to be effective, but it carries numerous implications. Thus: Lack of adequate dosage, short-term duration for medical treatment, stopping treatment upon improvement from the sickness, sharing of medicine and therapeutic failure, medicine reactions, sometimes wasting of money and prolonging their suffering, inaccurate diagnosis, drug reactions, and morbidity rate increase (Limaye, D. et al., 2017). This prevalence rate is higher in developing countries (Wegbom et al., 2021; Limaye, D. et al., 2017), such as Nigeria, where it varies between 52.1% and 92.3%. Healthcare workers practice the worst part of it (Wegbom et al., 2021).

On responding to the assessment for home medication as appropriate or otherwise, three out of five respondents (60.1%) regarded it as appropriate with little difference for those that were not (38.5%). These could be due to numerous reasons triggering home medications, including personal and geographical locations (Worku and Mariam, 2003); time constraints, mild diseases, knowledge about the sickness, previous experience, lack of access to healthcare, problems associated with physicians, conveniences and having previous prescriptions (Limaye et al., 2017). These have gone in the same line with HBM where people perceived COVID-19 as the same as any other sickness previously experienced. COVID-19 in Arkilla was prevented and treated with home remedies. The public's evaluations of COVID-19 differ from the government officials' perceptions, which have been exaggerated due to political and economic factors. However,

people on the other angle were confident (self-efficacy) that home remedies (herbals, supplements, ingredients, self-medications, etc.) are quick intervention remedies and can prevent and cure COVID-19. As a result, respondents use home remedies to address any signs or symptoms of COVID-19, both as preventive and curative measures. Whether it's COVID-19 or another illness, they remain unconcerned, believing that home remedies can effectively treat it even if they become afflicted.

### **Conclusion**

There are mixed perceptions of home medication and COVID-19. Some respondents regarded COVID-19 as natural, while others considered it as political. On the same note, home medication was perceived by the respondents as appropriate. People are aware of COVID-19. On average, people are aware of the signs, symptoms, and implications but do not fully abide by the COVID-19 preventive control measures and hence, practice home medication.

### **Recommendations**

Based on the study findings, the following recommendations are proposed:

First, to build mutual trust between the government and the public, it is essential to organize regular social gatherings and community forums. These should be conducted monthly, either virtually or in-person with appropriate safety measures, and be overseen by government health departments in collaboration with local community leaders.

Second, a public awareness campaign should be initiated to educate people about the lesser-known modes of COVID-19 transmission. This campaign should make use of social media, public service announcements, and community workshops and should be implemented promptly, with coordination from public health agencies and local media.

Third, improving healthcare relationships is essential for reducing dependence on home medications. Healthcare professionals can achieve this by introducing training programs that prioritize communication and patient satisfaction. These training programs should start soon and be organized by healthcare institutions and professional training organizations.

Fourth, integrating traditional and Western medicine should be pursued by developing a framework for this integration. Pilot programs within selected healthcare facilities should be started within the next year, involving healthcare providers, traditional medicine practitioners, and policymakers.

Fifth, to address the effectiveness of herbal remedies, laboratory tests and research should be conducted. Academic institutions, universities, and herbal medicine experts should establish research partnerships with research laboratories, and initiate projects soon.

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