AJHSE Vol: 3 (1): 96-107, 2022
DOI: 10.52417/ajhse.v3i1.215
Accepted Date: April 13, 2022

www.ajhse.org

African Journal of Health, Safety and Environment
An official publication of the
Applied Environmental Bioscience and Public Health Research Group
University of Benin, Benin City, Nigeria
Open Access | Bi-annual | Peer-reviewed | International
ISSN (Online): 2695-1819 | ISSN (Print): 2695-2386

RESEARCH ARTICLE **AJHSE030110**

KNOWLEDGE AND PERCEPTION ABOUT COVID-19 AMONGST RESIDENTS IN EDO STATE, NIGERIA

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ABSTRACT

The novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) has challenged public health globally which causes the disease named, by the World Health Organization, coronavirus disease 2019 (COVID-19). Edo State accounts for 3.07% of the total 245,856 cases in Nigeria. The objective of this paper was to assess the knowledge and perception of residents in Edo state, Nigeria toward COVID-19. A sample size of 281 was calculated using the adjusted Cochran formula for infinite sample size using an assumed prevalence of 0.24. A structured questionnaire was designed using Google Forms and distributed through online platforms. Knowledge of respondents was assigned scores and ranked as either good or poor. A total of 307 responses were completed and returned. The mean age of respondents was 37.3 years with a median value of 36. The overall knowledge of respondents was adjudged to be poor in 34.9% (N = 107) and good in 65.1% (N = 200) of respondents respectively. Good knowledge of respondents was significantly associated with an accurate indication of COVID-19 etiology, its spread, natural reservoir, therapeutics, and age groups at risk of infection. The perception that COVID-19 could be a fatal disease with no cure was indicated by 39.7% (N=122) of respondents. The media may serve as a readily accessible source of information but may misinform, disinform and sway public opinions. With the unprecedented ease of information dissemination due to current advancements in technology in recent centuries, there is the need to scrutinize the various mainstream sources of information.

Keywords: *COVID-19, Coronavirus, Edo State, Knowledge, Perception, Reservoir*

INTRODUCTION

Emerging pathogens such as the novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) have challenged public health globally. On 11th February 2020, the World Health Organization (WHO) named the disease caused by SARS-CoV-2 as coronavirus disease 2019 (COVID-19). On this same day, the International virus classification commission announced that COVID-19 was listed as a Public Health Emergency of International Concern (PHEIC) indicating it poses risks to multiple countries and requires a coordinated international response (Li *et al*., 2020a; Zowalaty and Jashult, 2020). In December 2019, a cluster of patients with associated pneumonia of unknown cause was linked to a wholesale market in Wuhan, China (Zhu *et al.,* 2020).

As a result of the high number of infected persons that were epidemiologically linked to the wet animal market in Wuhan City, China, it was suggested that this was likely the zoonotic origin of COVID-19 (Rothan and Byrareddy, 2020). The SARS-CoV-2 is the seventh member of the coronavirus family Coronaviridae of the genus Betacornavirus that infect humans. Other coronaviruses in this genus include MERS-CoV, SARS-CoV, HCoV-OC43, and HCoV-HKU1, all of which are known to cause respiratory and gastrointestinal diseases in humans (Poon 2005). The genome sequences of SARS-CoV-2 isolated from hospitalized patients in Wuhan, China showed a 88% sequence identity to two bat-derived SARS-like coronaviruses, bat-SL-CoVZXC21, and about 50% identity to the sequence of MERS-CoV (Gralinski and Menachery, 2020).

SARS-CoV is a member of the subfamily Coronavirinae in the family of Coronaviridae and the order Noidovirales (Cui and Shi 2019; Weiss, 2011). The virus is enveloped with positive-sense single-stranded RNA viruses and helically symmetrical nucleocapsid of genome size ranging from 26 to 32 kilobases (Khan *et al*., 2020; Li *et al*., 2020a; Li *et al*., 2020b). The viral particles exhibit a solar corona-like appearance with a diameter ranging from 60-140nm, from where its name is derived. SARS-CoV-2 belongs to another clade (in lineage B, same as two bat-derived SARS-like strains, ZC45 and ZXC21) within the genus Betacornavirus, subgenus sarbecovirus and Orthocoronavirinae subfamily, distinct from MERS-CoV and SARS-CoV (Zhu *et al*., 2020). The genome of SARS-CoV-2, similar to the coronaviruses, contains at least ten open reading frames (ORFs). The first ORFs (ORF1a/b), about two-thirds of the viral RNA, are translated into two large polyproteins. The remaining one-third of the ORFs of SARS-CoV-2 encode four main proteins: spike (S), envelope (E), nucleocapsid (N) and membrane (M) proteins. The SARS-CoV-2 spike (S) protein is functionally divided into two subunits, denoted as S1 and S2. The S1 subunit is further divided into the amino-terminal domain (S1-NTD) and the carboxyl-terminal domain (S1-CTD). The fusion and intracellular entry of SARS-CoV-2 is potentiated by the interaction of the S1-CTD (known as the receptor-binding domain receptor) and angiotensin-converting enzyme 2 (ACE2). The 9nm to 12nm distinct SARS-CoV-2 spikes has a predilection for ciliated bronchial epithelial cells and type II pneumocytes of the lungs (Cui and Shi, 2019).

The transmission of SARS-CoV-2 to humans and mechanisms associated with its pathogenicity is not clear yet, however, it may exhibit similarities with SARS-CoV due to their genomic relatedness (Zowalaty and Jashut, 2020). The period from infection to onset of COVID-19 symptoms ranged from 3 to 61 days with a median of 14 days (De Wit *et al*., 2020) Clinical signs associated with patients infected with SARS-CoV-2 range from mild respiratory illness to severe acute respiratory disease. The most frequent manifestation of infection in all age groups in SARS-CoV-2 patients is pneumonia, accompanied by fever, cough, dyspnea, and bilateral infiltrates on chest imaging (Zowalaty and Jashult, 2020). Intestinal symptoms like diarrhea develop in patients infected with COVID-19 more frequently than in other human coronavirus infections (De Wit *et al*., 2020).

Based on the current sequence database, all human coronaviruses have animal origins (Cui and Shi 2019). For example, the coronaviruses HCoV-OC43 and HKU1 likely originated from rodents. However, bats are considered the likely origin of SARS-CoV-2 based on the origin of other coronaviruses and introduced to Wuhan, China through an unknown intermediate (Khan *et al*., 2020). For example, the SARS-CoV, MERS-CoV, HCoV-NL63, and HCoV-229E are considered to have originated in bats. About 4 of the 9 Betacoronavirus species were identified only in bats and they may be persistently infected with many viruses but rarely display clinical signs (Li *et al*., 2005). Hence, bats are the most consistently implicated natural reservoirs of previously known and potentially novel viruses. It is suggested that the great genetic diversity of bat SARSr-CoVs and their frequent recombination within bats and subsequent transmission to other mammals where the virus acquired further mutation is responsible for the current outbreak of COVID-19.

The number of recorded cases in Nigeria is 245,856 with 3,058 deaths as of January 06, 2022 (Worldometer, 2022). At this same time, Edo State accounts for 3.9% (N = 7,533) of the cases recorded in Nigeria. Assessment of knowledge about this COVID-19 is key to compliance and containment efforts against further disease spread. Moreover, knowledge of and compliance with preventive measures has a bearing on the mental health of the workforce. A recent study conducted in China shows that prevention measures such as frequent measures of hand hygiene and wearing face masks as well as organizational measures including improvement of workforce hygiene were associated with less psychiatric symptoms in employees (Tan *et al*., 2020). Hence, the objective of this paper was to assess the knowledge and perception toward COVID-19 amongst residents in Edo State and fill some knowledge gap about the current SARS-CoV-2 infection and COVID-19.

METHODOLOGY

STUDY AREA

Ethical approval and Informed consent

This study is a cross-sectional survey which did not include any invasive procedure in animal of human participants. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (University of Benin Ethics and Research Compliance Committee with reference number Ref: ERCC/FVM/040/012, Faculty of Veterinary Medicine, University of Benin, Benin City, Nigeria). Informed consent was obtained from all respondents in the study. The participants were duly informed of their freedom to exit their participation at any point in the survey and that their identity will be protected at all times.

Study Design

The design is a purposive cross-sectional study of residents of Edo State.

Study Area

Edo State is located on a tropical rain forest belt in the South-South of Nigeria, lying between latitudes 05’44 N and 07’34 N, and longitudes 05’ 4 E and 06’45 E. It has 3 senatorial zones: Edo North, Edo Central, and Edo South, 18 local government areas and 192 wards. The capital, Benin City, is estimated at 1,125,058. According to the National Population Commission, the population of Edo State based on regional projections for 2019 using a steady growth rate of 2.74% is 4,718,659 (NBS 2020).

Sample size determination

A sample size of 281 was calculated using the Cochran formula (Cochran, 1975) for sample infinite size using an assumed prevalence of 0.24. Details of this method had been outlined in other studies (Cochran, 1975). The prevalence was calculated based on global projected estimates using current basic reproduction number of SARS-CoV-2. This approach was chosen since both sensitivity and specificity of diagnostic tests, and precise prevalence (seroprevalence) for COVID-19 are yet to be determined. Moreover, there is constant variability in global occurrences of the disease.

Study Instrument and dissemination

A sample structured questionnaire was designed on April 18, 2020, using Google Forms, a survey administration application included in the Google Drive office suite developed by Google LLC and pretested (Online Resource 1). Subsequently, the sampled questionnaire was broadcast on the University of Benin (UNIBEN) Web Master page on April 21, 2020, distributed through social media platforms such as WhatsApp®, twitter®, Instagram®, and Facebook®, as well as various chat groups for subsequent rebroadcast. These media tools were selected based on wide coverage and imposition of partial lockdown in the state.

Data collection and analyses

All responses were screened for completeness through a predefined selection query during questionnaire design in the google form platform. All data from consenting respondents were collated in Microsoft Excel (Microsoft Corporation, Redmond, WA, USA), sorted, checked for accuracy, and thereafter exported into SPSS (version 22; IBM Corp., Armonk, NY, USA) and analyzed.

Inclusion criteria were all residents in any of the three senatorial districts of Edo State during the period of study. Respondents whose state of origin was neither Edo State nor residents in the states were excluded from the survey.

Ranking of variables

For the study, specific questions were asked to assess outcome variables of knowledge and perception, attitudinal modifications and public compliance to preventive practices against COVID-19 amongst respondents in the study location. Each response obtained was scored and based on these total assigned scores, knowledge was ranked as either good or poor.

RESULTS

A total of 307 responses from consenting residents were completed and returned. The mean age of respondents was 37.3 ± .11 SEM years with a median value of 36. Table 1 shows the socio-demographic of respondents in the study. There were more male respondents (N=221) in comparison with 86 female respondents. The income was significantly higher in male respondents than females (p=0.029, not shown in table). Also, more male respondents (N = 137, 74.9%) were in public sector of employment than female (N = 46, 25.1%).

The overall knowledge of respondents was adjudged to be poor in 34.9% (N = 107) and good in 64.5% (N = 198) of respondents respectively. Knowledge was not significantly associated with gender, age, marital status, source of information, or income (P > 0.05).

The most common sources of information about COVID-19 amongst respondents were news (N = 139, 45.3%) and social media (N = 141, 45.9%) (Table 2). High proportion of respondents accurately identified the causative organism of COVID-19 as the coronavirus (N=248, 80.8%), that bats are the putative reservoir of SARS-CoV-2 (N=202, 65.8%) and that transmission of the disease can result from contact with an infected individual (N=232, 75.6%). However, 27% (N=83) of respondents opined that SARS-CoV-2 was either a biological modified agent in a laboratory or related to the 5G network. The perception that COVID-19 could be a fatal disease with no cure was indicated by 39.7% (N=122) of respondents. In addition, 51.1% (N=157) of respondents indicated that traditional remedy, already available vaccines, garlic- and ginger-based tea, other antiviral therapy or prayers is effective treatment against COVID-19. The average proportion of 86.2% of respondents agreed that preventive measures against COVID-19 include social distancing, lockdown and self-isolation, quarantine, use of face mask, handwashing, and use of hand sanitizers. This was much higher in comparison with the average of 0.42% who either disagreed with these preventive measures or identified alternative measures.

Good knowledge of respondents was significantly associated with accurately response of COVID-19 etiology, its spread, natural reservoir, therapeutics, and age groups at risk of infection in comparison with respondents adjudged with poor knowledge ($P \leq 0.05$) (Table 3).

DISCUSSION

COVID-19 continues to challenge public health globally and nationally. The current coronavirus cases are 298,523,977 with 5,484,562 deaths globally as of January 06, 2022 (Worldometer, 2022). The basic reproduction number (R0) of SARS-CoV-2, the expected number of secondary infectious cases generated by an infectious case in a susceptible population, has been estimated to be between 1.4 and 4.1 (Liu *et al.*, 2020; Tang *et al*., 2020). This portends an exponential increase in the following months if the current trend of the disease persists especially with the second wave that is being observed recently in some countries including Nigeria. This will quickly overwhelm the health facility in any country, especially in Nigeria where health facilities are poorly equipped and stretched. The goal of any nation is to keep the R0 as low as possible to contain the disease through public health actions and policies incorporating measures such as physical distancing, handwashing practices, restriction of public gatherings, and the imposition of lockdown. An important step in achieving compliance with these measures is a good public understanding of the disease etiologic agent, mode of transmission, and sustenance in nature (Usifoh *et al*., 2019).

A large proportion (65.1%) of respondents demonstrated good knowledge of COVID-19 etiology, SARS-CoV-2 reservoir of and transmission, and the clinical signs associated with the disease. Respondents knew that coronavirus was the etiology of COVID-19 (80.8%); the spread of the causative agent was contact with an infected person (75.6%) and contaminated surfaces, equipment, and aerosols (91.9%); bat species were the natural reservoir of SARS-CoV-2 (65.8%); and that the elderly (70.7%) and those with underlying health conditions (72.0%) are at high risk of severe disease. Also, clinical signs such as pneumonia and difficulty in breathing, coughing, fever, sneezing, and sore throat were identified in 91.5%, 86.3%, 82.4%, 76.9%, 70.0% of responses respectively. This agrees with a preliminary study on knowledge and perception of COVID-19 in Nigeria (Iorfa *et al*., 2020) which equally found such high proportions of responses in the sampled population to etiology and clinical signs. In the study, however, coughing was indicated as the most frequent clinical sign. This study, as far as our literature search, is the first to access knowledge category and perception to COVID-19 in Edo State, Nigeria.

A high proportion of respondents revealed that effective preventive measures include social distancing, lockdown and self-isolation, quarantine, use of face mask, handwashing, and use of hand sanitizers. Similar surveys conducted in the revealed that a majority of participants knew about handwashing, avoiding contact with those with respiratory symptoms, avoiding touching one's face, and social distancing. (Adesegun *et al*., 2020) The findings of our study agree with both cross-sectional and longitudinal studies conducted in early phase of the COVID-19 outbreak in China (Wang *et al*., 2020a; Wang *et al*., 2020b). In one such study by Tan *et al*. (2020), respondents' compliance to most frequently always washing of hands with soap and water, and wearing of face mask were 94.4% and 95.7% respectively. In another study, Wang *et al*. (2020a) also found an average proportion of approximately 61.0% amongst respondents who agreed to preventive practices of washing hands or handwashing after touching contaminated objects, and always wearing of face mask regardless of the presence or absence of symptoms.

The good knowledge demonstrated by respondents may not be unconnected with the source of information about the disease as the most frequently indicated source was news (45.3%) and social media (45.9%).
The internet and social media platforms and news on TV and Radio were the major source of information for the respondents in this study. This is similar to the report by Abdelhafiz *et al*. (2020) where Facebook was the main source of information for young adults in their survey in Egypt and Elnadi *et al.* also reported similar sources of information and knowledge gained by respondents on the COVID – 19. The internet (social media platforms) and TV had proved helpful for respondents to adapt to the physical social restraints during the COVID-19 compulsory lockdown in Nigeria and Egypt. Also, almost half of our respondents (49%) were very satisfied with the social media coverage of the pandemic. This is lower than the 67% satisfaction rating of the social media coverage reported in Egypt (Abdelhafiz *et al*., 2020). On the contrary, Roy *et al*., (2020) reported 67% of Indians felt worried after receiving social media updates on the global burden of COVID-19.

At the time of this survey, Edo state has recorded a total number of 2,696 cases of COVID-19 which is 3.9% of all cases in Nigeria as of December 12, 2020. This number is quite low compared to some other states in the same south-south senatorial districts. This low incidence of the disease in the state may be attributable to the good level of knowledge about the disease demonstrated by the residents and perception about COVID-19 as a fast spreading and often fatal disease with no current treatment or cure. This perception may have been heightened by imposition of either partial or complete lockdown by neighboring states such as Delta State. In addition, significant role in the awareness of COVID-19 may be linked with the ease of information spread about current updates and scientific advancement in the fight against the disease both nationally and globally. For example, 1.0% of respondents knew about the recently reported symptoms of loss of smell associated with COVID-19 infection.

The media may serve as a veritable and readily accessible source of information. However, there remains a growing risk of misinformation, disinformation, and swaying of public opinions. In this study, 27% (N=83) of respondents opined that SARS-CoV-2 was either a biological modified agent in a laboratory or related to the 5G network. While 16.9% of respondents indicated that the cause of the pandemic was either a country or an individual. Besides, 98.7% of respondents revealed that the use of either chloroquine or its derivatives, garlic- and ginger-based tea, traditional remedies, or already available vaccines was effective treatment against COVID-19. This was similar to the same study in Nigeria were Iorfa *et al*. (2020) discovered that 47.0% of respondents opined that SARS-CoV-2 was weaponized in the laboratory. This is consistent with the assessment of Alonso-Galban and Alemañy-castilla (2020) who argued that the plethora of information about the COVID-19 pandemic in internet- and social-based

platforms is fraught with rumor-mongering and spread of unverified information about the coronavirus. Hence, there is need to curb disinformation and misinformation about the disease while optimizing public knowledge base about COVID-19 etiology, transmission and associated preventive practices against the disease. There is an urgency to develop more effective dissemination of information related to the COVID-19 epidemic in developing countries (Tan *et al*., 2020).

CONCLUSION

Good knowledge about COVID-19 etiology, transmission, and control of disease spread may be foster public compliance with preventive practices and public health measures to contain the spread of the disease. With the unprecedented ease of information dissemination due to current advancement in technology in recent centuries, there is the need to scrutinize the various mainstream sources of information.

Conflicts of Interest: The authors declare that they have no conflict of interest

Funding: There was no funding received for this study.

Acknowledgements

We wish to acknowledge the support of University of Benin Information and Communication Technology Center in the dissemination of survey questionnaires.

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LIST OF TABLES

Table 1: The socio-demographics of respondents in Edo State, Nigeria.

Variable	Category	Frequency (%)
Age	Young (1-29) years	80 (26.1)
	Young adult (30-54) years	200 (65.1)
	Elderly (≥55 years)	27 (8.8)
Gender	Female	86 (28.0)
	Male	221 (72.0)
Marital status	Single	120 (39.1)
	Married	181 (59.0)
	Others	6 (2.0)
Education attained	Secondary	76 (24.8)
	Tertiary	231 (75.2)
Occupation	Private	124 (40.4)
	Public Service	183 (59.6)
Income	Low (₦1-60,000)	112 (36.5)
	Medium (₦ 61,000-120,000)	70 (22.8)
	High (₦121,000 and above)	125 (40.7)

Table 2: Assessment of the source of information, knowledge and perception of and preventive measures against COVID-19 amongst respondents in Edo State, Nigeria.

Assessment of information source and knowledge	Responses	Frequency* (%)[#]
Where did you first learn of COVID-19?	Friend/relative/family	24 (7.8)
	News media	139 (45.3)
	Social media	141 (45.9)
	Internet	2 (0.7)
	Cannot remember	1 (0.3)
What is the cause of COVID-19?	5G network	15 (4.9)
	A certain virus	7.0 (2.3)
	Coronavirus	248 (80.8)
	China	51 (16.6)
	Biologic agent	68 (22.1)
	Bacteria	13 (4.2)
	Bill Gates	1 (0.3)
	Do not know	2 (0.7)
How is the causative agent spread?	Contact with an infected person	232 (75.6)
	Surface/equipment/aerosol	282 (91.9)
	Contact with mucous membrane	4 (1.3)
	Eating bat	50 (16.3)

	Eating uncooked meat	1 (0.3)
	Using a 5G network	4 (1.3)
	Not understood	1 (0.3)
What is the reservoir of COVID-19?	Bat	202 (65.8)
	Rodent	33 (10.7)
	Snake	50 (16.3)
	Pangolin	67 (21.8)
	Still unknown	20 (6.5)
	Wild animals	7 (2.3)
	Designed and stored in Lab	5 (1.6)
	The virus itself	1 (0.3)
	Connected with 5G network	1 (0.3)
	Contaminated surface	1 (0.3)
	Have no clue	7 (2.3)
What are the clinical signs of COVID-19?	Fever	253 (82.4)
	Coughing	265 (86.3)
	Sneezing	236 (76.9)
	Runny nose	129 (42.0)
	Sore throat	215 (70.0)
	Pneumonia and difficult breathing	281 (91.5)
	Diarrhea	83 (27.0)
	Loss of smell	3 (1.0)
	Abdominal pain	1 (0.3)
	Body ache	1 (0.3)
How can COVID-19 be treated or cured?	Chloroquine or derivatives	146 (47.6)
	Traditional remedy	57 (18.6)
	Already available vaccines	5 (1.6)
	Tea with garlic and ginger	91 (29.6)
	Antiviral therapy	1 (0.7)
	Management and supportive therapy	18 (5.9)
	Immune booster	2 (0.7)
	Cannot be cured or treated	122 (39.7)
	Unknown for now	31 (10.1)
	Prayer	3 (1.0)
	No idea	1 (0.3)
Which age group is at high risk of COVID-19?	All ages	98 (31.9)
	Young	36 (11.7)
	Elderly	217 (70.7)
	Underlying health conditions	221 (72.0)
	Pregnant women	1 (0.3)
	Babies below 1 year	1 (0.3)
Prevention of COVID-19	Social distancing	284 (92.5)
	Lockdown and self-isolation	246 (80.1)
	Quarantine	249 (81.1)
	Face mask	265 (86.3)
	Hand washing	275 (89.6)
	Use of hand sanitizers	268 (87.3)
	Lockdown	162 (52.8)
	Honesty	1 (0.3)
	Use of 5G	1 (0.3)
	Use of eyeglass	3 (1.0)
	Boost immunity	1 (0.3)
	Do not agree	1 (0.3)
	Prayers	1 (0.3)

*Multiple responses were obtained for each query and hence a total response greater than the total number of respondents sampled.

[#]Each entry for percentage is the frequency per total responses

Table 3: Chi-square test of association between knowledge and specific responses to COVID-19 etiology, spread, treatment, and age group at risk amongst respondents in Edo State, Nigeria

			Knowledge		
Respondents		**Category**	**Poor (%)**	**Good (%)**	***P***
Etiology	Coronavirus	No	45 (42.1)	14 (7.0)	<0.0001
		Yes	62 (57.9)	186 (93.0)	
		Total	**107**	**200**	
	Bacteria	No	99 (92.5)	195 (97.5)	0.042
		Yes	8 (7.5)	5 (2.5)	
		Total	**107**	**200**	
Spread	Contact	No	23 (21.5)	2 (1.0)	<0.0001
		Yes	84 (78.5)	198 (99.0)	
		Total	**107**	**200**	
	Surfaces	No	53 (49.5)	22 (11.0)	<0.0001
		Yes	54 (50.5)	178 (89.0)	
		Total	**107**	**200**	
	Eating bat	No	102 (95.3)	155 (77.5)	<0.0001
		Yes	5 (4.7)	45 (22.5)	
		Total	**107**	**200**	
Reservoir	Bat	No	63 (58.9)	42 (21.0)	<0.0001
		Yes	44 (41.1)	158 (79.0)	
		Total	**107**	**200**	
	Snake	No	100 (93.5)	157 (78.5)	<0.0001
		Yes	7 (6.5)	43 (21.5)	
		Total	**107**	**200**	
	Pangolin	No	95 (88.8)	145 (72.5)	0.001
		Yes	12 (11.2)	55 (27.5)	
		Total	**107**	**200**	
	Human	No	95 (88.8)	190 (95.0)	0.04
		Yes	12 (11.2)	10 (5.0)	
		Total	**107**	**200**	
	No clue	No	101 (94.4)	199 (99.5)	0.008
		Yes	6 (5.6)	1 (0.5)	
		Total	**107**	**200**	

Treatment/cure	Chloroquine	No	70 (65.4)	91 (45.5)	0.001
		Yes	37 (34.6)	109 (54.5)	
		Total	**107**	**200**	
	Garlic/ginger tea	No	84 (78.5)	132 (66.0)	0.015
		Yes	23 (21.5)	68 (34.0)	
		Total	**107**	**200**	
	No cure	No	81 (75.7)	104 (52.0)	<0.0001
		Yes	26 (24.3)	96 (48.0)	
		Total	**107**	**200**	
Age group at risk	Young	No	100 (93.5)	171 (85.5)	0.027
		Yes	7 (6.5)	29 (14.5)	
		Total	107	200	
	Elderly	No	53 (49.5)	37 (18.5)	<0.0001
		Yes	54 (50.5)	163 (81.5)	
		Total	107	200	
	Underlying illness	No	55 (51.4)	31 (15.5)	<0.0001
		Yes	52 (48.6)	169 (84.5)	
		Total	107	200	
	All ages	No	65 (60.7)	144 (72.0)	0.03
		Yes	42 (39.3)	56 (28.0)	
		Total	107	200	