

Perception and practices during COVID-19 pandemic in an urban community in Nigeria

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BACKGROUND

Various perceptions and practices have been associated with the COVID-19 pandemic. In this study, we assessed the perception and practices regarding COVID-19 among residents in selected urban communities of Ibadan, Oyo State, Nigeria.

METHODS

A descriptive cross-sectional study design was used. Data was collected using an interviewer-administered questionnaire. Household members aged 18 years and above were studied using a multi-stage sampling technique. Those who demonstrated washing of the palm, back of the hand, spaces between the fingers, fingernails, wrist, and thumbs had 6 points and were categorized to have had a good practice of handwashing. Descriptive statistics were done. Bivariate analysis was done using Chi-square test. P-value <0.05 was statistically significant.

RESULTS

The mean age of respondents was 33.2 ± 10.6 years. Going to the hospital (95%) and calling the COVID-19 help number (58.3%) were the frequently reported practices among respondents following the development of COVID-19 signs. Also, 89 (26%) knew they could contract COVID-19, while 41 (12%) perceived it as an exaggerated event. The effects most frequently reported by respondents were hunger/low income (48.8%) and academic delay (8.8%). Use of face masks by 64.5% and social distancing 48% were the most frequently reported practices for prevention. Only 71 (20.8%) demonstrated good hand washing practices. More Christians 25.5% compared to 13.4% Muslims demonstrated good hand washing practices ($p= 0.007$).

CONCLUSION

Behaviour modification for the control of COVID-19 is central to risk perception. Enhanced sensitization and health education regarding COVID-19 is needed to correct the wrong perceptions.

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4

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14

15 **Abstract**

16

17 **BACKGROUND**

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20 selected urban communities of Ibadan, Oyo State, Nigeria.

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27 have had a good practice of hand washing. Descriptive statistics were done. Bivariate analysis
28 was done using Chi square test. P value <0.05 was statistically significant.

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30

31 RESULTS

32 The mean age of respondents was 33.2 ± 10.6 years. Going to the hospital (95%) and calling the
33 COVID-19 help number (58.3%) were the frequently reported practices among respondents
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36 reported by respondents were hunger/low income (48.8%) and academic delay (8.8%). Use of
37 face masks by 64.5% and social distancing 48% were the most frequently reported practices for
38 prevention. Only 71(20.8%) demonstrated good hand washing practices. More Christians 25.5%
39 compared to 13.4% Islam demonstrated good hand washing practices ($p= 0.007$).

40

41 CONCLUSION

42 Behavior modification for the control of COVID-19 is central to risk perception. Enhanced
43 sensitization and health education regarding COVID-19 is needed to correct wrong perception.

44

45 Keywords: Coronavirus, COVID-19, risk perception, hand washing practices, Nigeria.

46

47 Introduction

48

49 The Coronavirus infection (COVID-19) is an emerging infectious illness which broke out during
50 the winter of 2019 (WHO, 2020; Al-Hanawi et al, 2020). Due to its presentations, it has been
51 declared a public health emergency of international concern by the World Health Organization
52 (WHO) (WHO, 2020). An alarming response has been introduced across the globe due to its
53 high infectiousness and case fatality rate (Zhong et al., 2020). The identification of the risks and
54 the prevention of infectivity regarding COVID-19 have been stated to depend on human
55 perception (Zhong et al., 2020). Especially in the submergence of an infectious disease such as
56 COVID-19, different thoughts have shaped individual's views on the illness. The perception and
57 practices of community members is critical in the epidemic chain for the control of COVID-19
58 (Brug et al., 2009)

59

60 Currently, the Coronavirus disease has spread to 213 countries with nearly 9 million confirmed
61 cases and 500,000 recorded deaths (WHO, 2020). In Nigeria, there are almost 20,000 confirmed

62 cases of COVID-19 with a total of 525 deaths as of 23rd June, 2020 (WHO, 2020; NCDC, 2020).
63 Oyo State presently holds the fourth spot on the NCDC daily COVID-19 updates, and urban
64 areas in Ibadan its capital city frequently present with confirmed cases (NCDC, 2020; The
65 Whistler, 2020). As a part of the emergency response activities across all States in Nigeria,
66 health education campaigns have been directed at members of the public (NCDC, 2020). These
67 campaigns have been aimed at knowledge improvement and the correction of certain
68 misconceptions that have been widely circulated among community members (NCDC, 2020)
69 Education on precautionary measures such as wearing of face masks, regular handwashing with
70 soap and water or with alcohol-based hand sanitizers, and social distancing have been done
71 (NCDC, 2020; The Pace Setter State, 2020). However, it is not known if the perception and
72 practices of community members have improved in the present period of the COVID-19
73 outbreak in Nigeria.

74

75 The management of epidemics or infectious illnesses especially in the absence of any known
76 vaccine has been stated as dependent on the precautionary behavior of any given population
77 (Brug et al., 2009). Such behavior is determined by individual's risk perception of the existing
78 disease. Lessons from the Severe Acute Respiratory Syndrome (SARS) revealed that perceived
79 vulnerability (although often biased) determines a population's reaction (Zwart et al., 2009).
80 Risk of vulnerability to SARS has been perceived differently across the World, with a relatively
81 lower risk obtained in Asian countries and the Netherlands compared to the United States. (Lau
82 et al., 2003; Leung et al., 2003; Blendon et al., 2004).

83

84 Risk perception of avian influenza in a Dutch study which recorded high levels of risk perception
85 reported that about half of its respondents adopted precautionary measures (De Zwart et al.,
86 2007). A comparative study of SARS-related optimism conducted in China and Canada reported
87 that individuals who demonstrated pessimism about the likelihood of being infected were less
88 likely to adhere to protective measures (Ji et al., 2004). Hence, it is evident that perception
89 shapes one's knowledge and the adoption of safety measures concerning the transmission of an
90 infection. Data obtained from the perception of community members regarding COVID could
91 help target interventions needed to improve the knowledge of community members regarding
92 Coronavirus.

93 To the best of our knowledge, the perception, and practices of community members in urban
94 areas in Ibadan is currently unknown. Risk perception is central to behavior modification for
95 disease control, it becomes pertinent to assess the perception and practices regarding COVID-19.
96 This study is thus aimed at assessing the perception and practices of community members in
97 urban areas in Ibadan regarding COVID-19.

98

99 **Materials & Methods**

100 **Study design and study setting**

101

102 A descriptive cross-sectional study design was used. Data was collected using an interviewer-
103 administered questionnaire. Data collection took place from the 3rd June to the 6th June 2020.
104 The study was carried out in Ibadan, Oyo State Nigeria. Ibadan is the capital city of Oyo State.
105 Oyo State is one of the states in the south western part of Nigeria. By mid-June, a total of 764
106 confirmed cases of COVID-19 has been reported in Oyo State and the state ranks fourth in the
107 total number of cases of COVID-19 in Nigeria (NCDC, 2020; The Whistler, 2020). The official
108 language in Nigeria is English, while the major informal language for communication in Ibadan
109 is Yoruba, which has different dialects.

110

111 **Study population**

112

113 The study population for the survey was one eligible member of the households in the selected
114 urban communities in Ibadan, Oyo State. All consenting household members were included in
115 the study. Household members that were less than 18 years were excluded.

116

117 **Sample size determination and sampling technique**

118

119 The sample size was calculated using sample size formula for descriptive cross-sectional study.
120 A sample of 360 were studied in the urban communities of Ibadan. A multi-stage sampling
121 technique was used to select the respondents for the study

122

123

124 Stage 1:

125 Simple random sampling was used to select 3 out of the 6 urban local government area in Ibadan.

126

127 Stage 2:

128 In each of the selected LGA, a political ward was chosen for the study.

129

130 Stage 3:

131 A center location was chosen in the selected ward. A bottle was rotated to determine the
132 direction of movement of the interviewers. From the direction of the bottle tip all consenting
133 eligible adults from the households were included in the study until 120 persons were
134 interviewed in each LGA.

135 Sampling of 120 each in the three urban LGA gives a total sample size of 360.

136

137

138 **Study Instrument**

139

140 The questionnaire has two sections;

141 Section A: Sociodemographic characteristics

142 Section B: Perception and practices regarding COVID-19.

143

144 **Data Collection Methods and instruments**

145

146 Data was collected using a semi-structured interviewer-administered questionnaire. Data
147 collection was done by trained research assistants with minimum of first degree. The
148 questionnaire was pretested among adult resident of an LGA that was not selected for the study
149 (Ibadan South-West).

150

151 **Data Management**

152

153 Data was analyzed with SPSS version 23. Age was summarized using mean and standard
154 deviation, while frequencies, and percentages were used for categorical variables. A total score

155 of 6 was assigned to good practice of hand washing after the respondents were asked to
156 demonstrate hand washing. One point each was assigned for the following: palm, back of the
157 hand, spaces between the fingers, fingernails, wrist and thumbs. Only those who demonstrated
158 the 6 points were categorized to have had a good practice of hand washing. Chi square test was
159 used for the assessment of associations between sociodemographic characteristics and practice of
160 hand washing. P value of < 0.05 were accepted as significant.

161

162 **Ethical Approval and Consent to Participate**

163

164 Ethical approval to carry out the study was obtained from the Oyo State Ministry of Health
165 Ethical Review Committee, with reference number AD/13/479/1779^A. Permission for the study
166 was sought from the respondents and their confidentiality was ensured. The respondents were
167 informed of their right to decline or withdraw from the study at any time without any adverse
168 consequences. No harm came to participants because of participation in this study.

169

170 **Results**

171

172 A total of 360 respondents were interviewed among urban residents in Ibadan. The mean age was
173 33.2 ± 10.6 years, among them 136 (37.8%) were aged between 25 and 34 years, and 225
174 (62.5%) were females. Those with secondary education and above were 332 (92.2%), 314
175 (87.2%) were of the Yoruba ethnic group, and 171 (47.5%) engaged in business or trading.
176 (Table 1). Among the 360 respondents 342 (95%) have heard of COVID-19.

177

178 Most frequently reported practices among respondents following the development of COVID-19
179 signs were: Going to the hospital 171(95%) and calling the COVID-19 help number 105
180 (58.3%). The other reported practices included: Praying and staying at home each with 29
181 (16.1%) respondents as shown in Figure 1.

182

183 Regarding COVID-19, 89 (26%) knew they could contract COVID-19, while 41 (12%)
184 perceived it as an exaggerated event. It was also perceived as an intention for corruption by 23
185 (6.7%), COVID-19 was an attack by the Western World was reported by 68 (19,9%), and

186 122(35.7%) called COVID-19 a source of panic. The effects most frequently reported by
187 respondents were hunger/low income 167 (48.8%) and academic delay 30 (8.8%). Regarding
188 suggestions to the government, 108 (31.6%) suggested the provision of medical
189 supplies/palliatives/ seeking of cure, while 68 (19.9%) suggested free testing/free treatment.
190 Other effects of COVID-19 and suggestions to the government are as shown in Table 2.

191

192 The most frequently reported practice for prevention of COVID-19 among respondents were the
193 use of face masks by 224 (64.5%) and social distancing by 164 (48%). Others included: Staying
194 at home/following COVID-19 updates 8 (2.2%), taking Vitamin C/fruits/warm water 4 (1.1%),
195 and doing nothing 5 (1.4%) as shown in Figure 2.

196

197 Figure 3 shows that only 71(20.8%) demonstrated good hand washing practices. Among
198 respondents aged less than 25 years, 16 (23.5%) had good handwashing practice compared to
199 14(29.8%) aged above 45 years. Among females, 49 (22.8%) had good handwashing practices
200 compared to 22(17.3%) males although these differences are not statistically significant. Good
201 handwashing practices was demonstrated by 53(25.5%) Christians religion compared to
202 18(13.4%) Islam ($p= 0.007$). (Table 3)

203

204

205 **Discussion**

206

207 This study found that many individuals lived in denial of the existence of COVID-19. The
208 perception of the illness as a motive for corruption altogether indicate that there still exists poor
209 knowledge of the Coronavirus among community members in Ibadan. Concerning perceived
210 risk, COVID-19 was rated as a source of threat and panic among 37% of respondents, while
211 27.5% perceived it as a cause of numerous deaths. The perceived risk for COVID-19 obtained in
212 this study is similar to a range of 9-30% obtained on the personal risk for SARS illness in the
213 Netherlands (Lau et al., 2003; Leung et al., 2003; De Zwart et al., 2007) This is however
214 contrary to the perceived risk regarding Ebola virus and Lassa fever in Nigeria (Ilesanmi and
215 Alele, 2015; Asuke et al., 2020). From the present study, a high rating of the perceived
216 likelihood of contracting COVID-19 was observed among 26% of respondents, while it was

217 minimally perceived as an attack by the Western World among nearly 20%. The existence of
218 wrong perception in this study highlights the possession of wrong information among
219 community members.

220

221 Findings obtained from this study revealed that the practices most often adopted following the
222 development of COVID-19 symptoms were either to go to the hospital or call the COVID-19
223 help number. This indicates that the source of help for COVID-19 treatment is well known
224 among community members in urban areas of Ibadan. Similarly, an Indian study reported that
225 hospital visitation was frequently opted for as a step to be taken following the development of
226 COVID-19 in individuals in a close relationship (Dkar et al., 2020).

227

228 Despite the myriads of notions associated with the perception of COVID-19, we found out that
229 about 90% of respondents practiced the use of facemasks, while 65% practiced social distancing
230 to prevent the Coronavirus infection though, the extent of full adherence is low. Similarly, the
231 likelihood of positive practices concerning COVID-19 was associated with a positive perception
232 of the risk of infection (Zhong et al., 2020). The finding from the present study contradicts the
233 assumption of the Health Belief Model (HBM) that protective actions are more likely to succeed
234 a high level of perceived susceptibility (Tarkang et al., 2015) The results obtained herein is
235 higher than the knowledge concerning the practice of face masks in Saudi Arabia (Al-Hanawi et
236 al., 2020). Due to its deadly nature, COVID-19 has introduced fear which has compelled
237 protective actions from individuals regarding the illness (Zhong et al., 2020)

238

239 Previous studies have shown that fear could motivate healthy behavior among individuals
240 especially during epidemics, but such behavior may not be sustainable (Witte, 1998; Nabi, 1999;
241 Ufuwa et al., 2020). The adoption of these healthy behaviors in the present study is in tandem
242 with the recommendations of the World Health Organization (WHO) on safety measures for
243 COVID-19 (WHO, 2020). These findings imply that individual perception of infectious illnesses
244 such as COVID-19 may not influence the adoption of protective practices. This explains the need
245 for a regular sensitization of community members on COVID-19 safety measures regardless of
246 their perception concerning the illness.

247

248 In this study, we found out that religion is a determinant to the practice of handwashing. From
249 our study, Christians demonstrated good practice of handwashing compared to those who
250 practice Islam. This finding is unexpected since Moslems practice handwashing more frequently
251 while observing their prayers. This indicates that the practice of handwashing does not
252 necessarily infer detailed understanding of the handwashing process. A study conducted in
253 Ibadan on hand hygiene practices post Ebola virus disease outbreak revealed a high proportion of
254 poor self-reported hand hygiene practice (Martins and Osiyemi, 2017). Lassa fever studies
255 conducted in Edo State reported poor handwashing practices, while a similar study in Kaduna
256 State, Nigeria reported good handwashing practices among respondents (Tobin et al., 2019;
257 Asuke et al., 2020). The similarities of this findings with ours imply the wide acceptance of the
258 practice of handwashing in the management of infectious diseases.

259

260 Our findings also revealed that age, gender, educational qualification, ethnicity, or occupation
261 have no association with the practice of handwashing. Contrary to this finding, a south-Ethiopian
262 study revealed that persons in the youngest age groups displayed good handwashing practices
263 more frequently than older persons (Kebede et al., 2020). The same study also reported
264 occupation and higher educational qualification as predictors of good handwashing practice
265 (Kebede et al., 2020). Findings from this present study imply that interventions need to be
266 targeted on handwashing education since poor handwashing practice could increasingly place
267 individuals at risk of COVID-19.

268

269 We found that COVID-19 poses significant threat to local economy, resulting in low income and
270 resultant hunger. This is likely due to the increased cost of purchasing goods or a result of the
271 lockdown which has denied many individuals the opportunity to earn their income. Thus, a
272 shortage in the cash flow in circulation has resulted and accompanied by hunger as a major
273 effect. This explains the need for the provision of palliatives as a means to fight hunger and
274 reduce susceptibility to other infections during the COVID-19 outbreak. Similarly, decreased
275 productivity and job losses and an unprecedented economic disaster have been reported (Atalan,
276 2020). Contrary to the finding in this study, other studies have reported stress and anxiety as
277 psychological reactions due to the Coronavirus pandemic (Atalan, 2020) Interestingly, a

278 recognition of the significance of essential staff has also resulted from the COVID-19 outbreak
279 (The National, 2020).

280

281 Pertaining to suggestions to the government concerning COVID-19 containment, the provision
282 of medical supplies and palliatives received highest recommendation among respondents. Also,
283 health education, the enforcement of preventive measures, and free testing and treatment
284 received much recognition. These imply two things. Firstly, health education concerning
285 COVID-19 should be done by public health officials in simple, unambiguous languages which
286 will facilitate the understanding of community members. Secondly, the availability of medical
287 supplies and palliatives would enhance the adherence to safety measures for COVID-19, such as
288 the use of face masks among community members. Similar suggestions have been made in
289 previous studies (Kebede et al., 2020)

290

291 **Strengths of the Study**

292

293 Up-to-date, the majority of studies on perception and practices regarding COVID-19 have used
294 electronic sources for data collection, and such results may have been biased. Our study is a
295 community-based physical study that used a semi-structured interviewer-administered
296 questionnaire. To the best of our knowledge, it is the first to study the perception and practices of
297 adult population in urban communities in Nigeria. The study also made use of a large sample
298 size (360 adults).

299

300 **Limitation of the Study**

301

302 As this study was limited to the perception and practices regarding COVID-19, the knowledge of
303 community members on the illness was not addressed. The assessment of factors influencing
304 COVID-19 practices among community members was obscure in this study.

305

306

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308

309 **Conclusions**

310

311 Behavior modification for the control of COVID-19 is central to risk perception. Risk
312 identification and adoption of preventive measures depend on an individual's perception of the
313 illness. We hereby recommend enhanced sensitization and health education sessions for all
314 community members regarding COVID-19 in Ibadan metropolis regardless of their educational
315 qualification. Also, health campaigns should be more focused on practices which protect against
316 transmission of COVID-19.

317

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320 cooperation to participate in this study.

321

322

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Figure 1

Perceived practices of Ibadan residents to COVID-19 symptoms

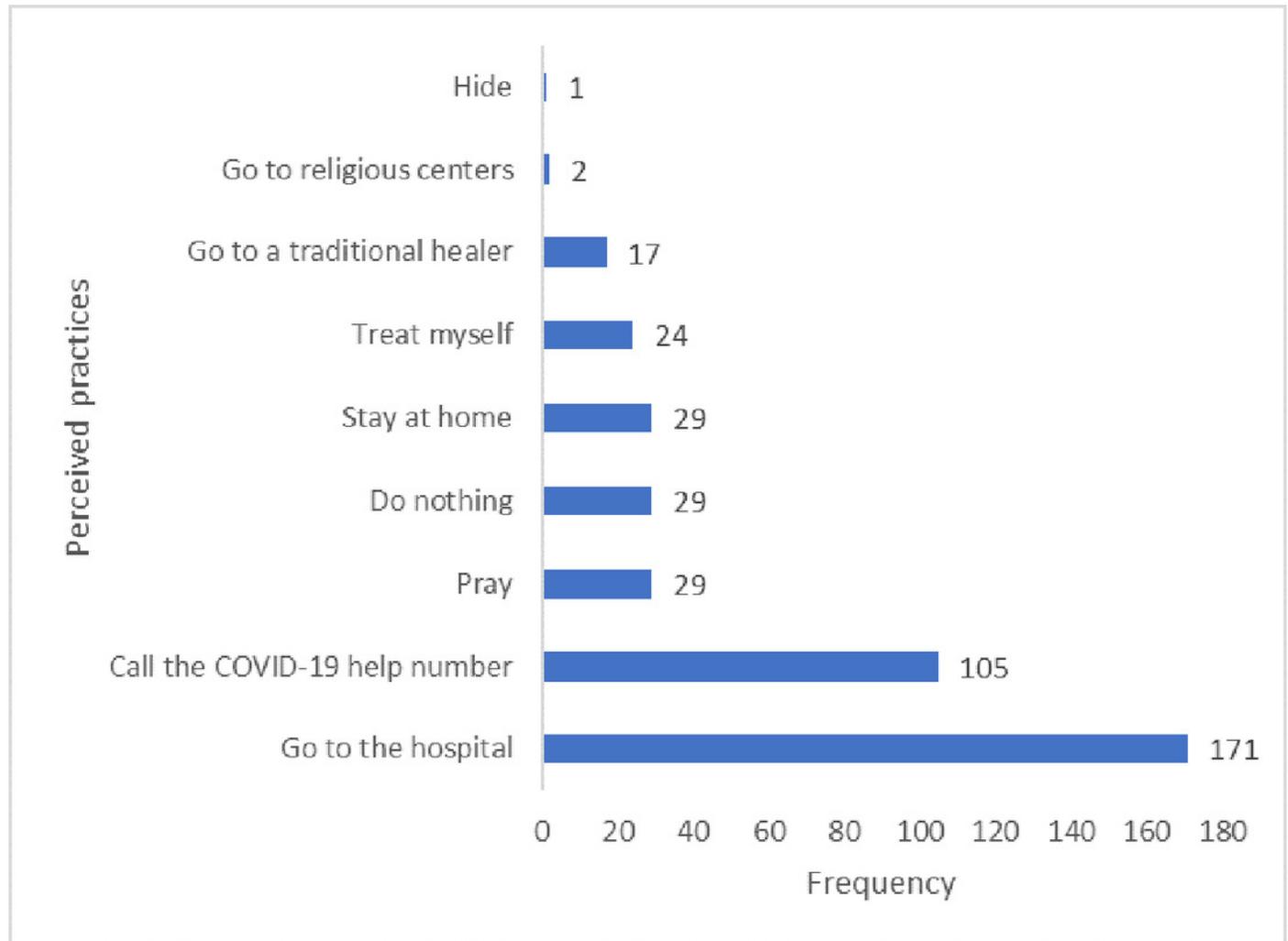


Figure 2

Reported practices of COVID-19 prevention among respondents

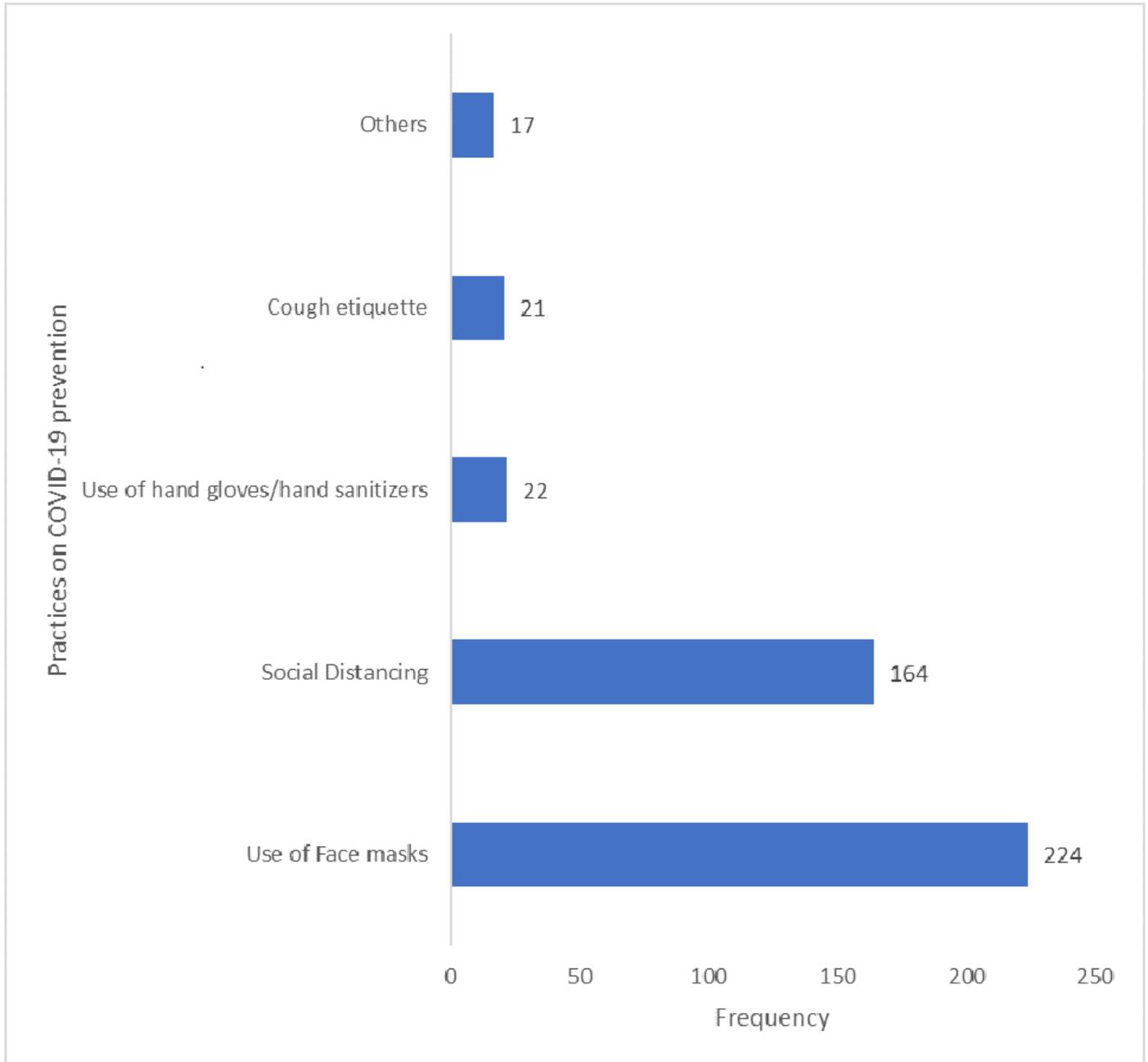


Figure 3

Number of points scored while demonstrating hand washing practices among community members who have heard of COVID-19 in Ibadan 2020

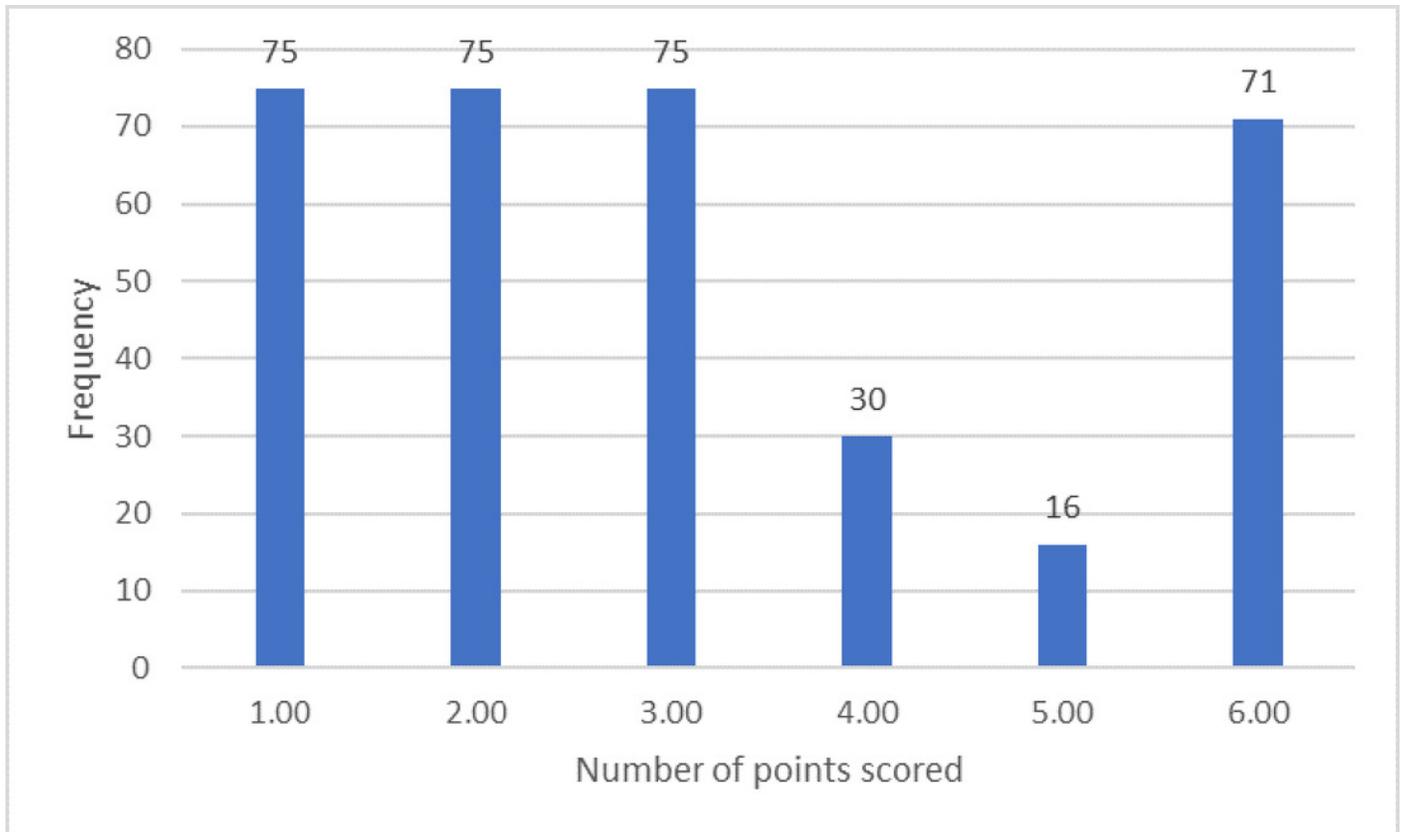


Table 1 (on next page)

Sociodemographic characteristics of respondents among Ibadan residents, 2020

1

Socio-demographic Characteristics	Frequency	%
Age group (Years)		
<25	70	19.4
25-34	136	37.8
35-44	106	29.4
≥45	48	13.3
Sex		
Male	135	37.5
Female	225	62.5
Religion		
Christianity	217	60.3
Islam	143	39.7
Highest level of Education		
Primary and below	28	7.8
Secondary and above	332	92.2
Ethnicity		
Yoruba	314	87.2
Ibo	31	8.6
Hausa	8	2.2
Others	7	1.9
Occupation		
Business/Trader	171	47.5
Artisans	110	30.6
Professional/Civil Servant	30	8.3
Unemployed/housewife/student	49	13.6

2

Table 2 (on next page)

Perceptions and effects of COVID-19 and suggestions to government by community members in Ibadan, 2020

1

Variables	n (%)
Perception on COVID-19	
It creates a lot of panic	122 (35.7)
It is a deadly disease	94 (27.5)
I am at risk of COVID-19 infection	89 (26)
It is highly infectious	72 (21.1)
It is an attack by the Western World	68 (19.9)
It is just being exaggerated	41 (12)
It has no cure	33 (9.6)
Don't believe it exists	28 (8.2)
An intention for corruption	23 (6.7)
Effects of COVID-19	
Hunger/Low income	167 (48.8)
Academic delay	30 (8.8)
Restricted movement/No going to work	25 (7.3)
No gatherings	20 (5.8)
Suggestions to Government	
Provide medical supplies/Palliatives/Seek cure	108 (31.6)
Health Education/Enforce preventive measures	70 (20.5)
Free testing/Free treatment	68 (19.9)
Stop reporting false figures/Lift lockdown and bans	44 (12.9)
Pray/No idea/Do anything	27 (7.9)

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Table 3 (on next page)

Association between sociodemographic variables and practice of handwashing among community members who have heard of COVID-19 in Ibadan 2020

1

Sociodemographic Variable	Practice of hand washing		Chi-square	p-value
	Good n (%)	Poor n (%)		
Age				
<25	16 (23.5)	52 (76.5)	3.890	0.274
25-34	22 (16.9)	108 (83.1)		
35-44	19 (19.6)	78 (80.4)		
>44	14 (29.8)	33 (70.2)		
Sex				
Male	22 (17.3)	105 (82.7)	1.451	0.228
Female	49 (22.8)	166 (77.2)		
Religion				
Christianity	53 (25.5)	155 (74.5)	7.191	0.007
Islam	18 (13.4)	116 (86.6)		
Highest level of Education				
Primary and below	7 (26.9)	19 (73.1)	1.109	0.775
Secondary and above	64 (20.3)	252 (79.7)		
Ethnicity				
Yoruba	62 (20.8)	236 (79.2)	0.592	0.898
Ibo	6 (20.7)	23 (79.3)		
Hausa	1 (12.5)	7 (87.5)		
Others	2 (28.6)	5 (71.4)		
Occupation				
Business/Trader	31 (19.3)	130 (80.7)	0.915	0.822
Artisans	24 (23.1)	80 (76.9)		
Professional/Civil Servant	5 (17.2)	24 (82.8)		
Unemployed/housewife/student	11 (32.9)	37 (77.1)		

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