Perception and practices during the COVID-19 pandemic in an urban community in Nigeria: A Cross-sectional Study

Olayinka Ilesanmi [Corresp., 1, 2] , Aanuoluwapo Afolabi [1]

[1] Department of Community Medicine, University of Ibadan, Ibadan, Oyo State, Nigeria

[2] Department of Community Medicine, University College Hospital, Ibadan, Oyo State, Nigeria

Corresponding Author: Olayinka Ilesanmi
Email address: ileolasteve@yahoo.co.uk

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 using a multi-stage sampling technique was used to recruit 360 respondents (Mean age: 33.2 ± 10.6 years; 62.5% females) from households in Ibadan. Data were collected using an interviewer-administered questionnaire from 3rd – 6th June 2020. 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 conducted. Bivariate analyses of sociodemographic characteristics and good hand washing practices were conducted using Chi-square test. P-values <0.05 were statistically significant. **RESULTS.** 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 symptoms. 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 handwashing practices. The perception of likelihood to contract COVID-19 and practices to prevent COVID-19 had a weak correlation of 0.239(p<0.001). **CONCLUSION.** Gaps exist in the practices that prevent COVID-19. There is a need to improve handwashing, use of face masks and other practices that prevent COVID-19. Implications across public health communication and policies were stated.

Perception and practices during the COVID-19 pandemic

in an urban community in Nigeria: A Cross-sectional Study

Olayinka S. Ilesanmi[1,2], Aanuoluwapo A. Afolabi[1]

[1] Department of Community Medicine, University of Ibadan, Oyo State, Nigeria

[2] Department of Community Medicine, University College Hospital, Ibadan,

Corresponding Author:

Olayinka Ilesanmi, Department of Community Medicine, University of Ibadan, Oyo State,

Nigeria

Email address: E mail: ileolasteve@yahoo.co.uk

Phone: +2348032121868

Abstract

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 using a multi-stage sampling technique was used to recruit 360 respondents (Mean age: 33.2 ± 10.6 years; 62.5% females) from households in Ibadan. Data were collected using an interviewer-administered questionnaire from 3rd – 6th June 2020. 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 conducted. Bivariate analyses of sociodemographic characteristics and good hand washing practices were conducted using Chi-square test. P-values <0.05 were statistically significant.

31

32 **RESULTS.**

33 Going to the hospital (95%) and calling the COVID-19 help number (58.3%) were the frequently

34 reported practices among respondents following the development of COVID-19 symptoms. Also,

35 89 (26%) knew they could contract COVID-19, while 41 (12%) perceived it as an exaggerated

36 event. The effects most frequently reported by respondents were hunger/low income (48.8%) and

37 academic delay (8.8%). Use of face masks by 64.5% and social distancing (48%) were the most

38 frequently reported practices for prevention. Only 71(20.8%) demonstrated good handwashing

39 practices. The perception of likelihood to contract COVID-19 and practices to prevent COVID-

40 19 had a weak correlation of 0.239(p<0.001).

41

42 **CONCLUSION.**

43 Gaps exist in the practices that prevent COVID-19. There is a need to improve handwashing, use

44 of face masks and other practices that prevent COVID-19. Implications across public health

45 communication and policies were stated.

46

47 Keywords: Coronavirus, COVID-19, risk perception, handwashing practices, Nigeria.

48

49 **Introduction**

50

51 The Coronavirus infection (COVID-19) is an emerging infectious illness which broke out during

52 the winter of 2019 (Al-Hanawi et al, 2020; WHO, 2020). Due to its presentations, it has been

53 declared a public health emergency of international concern by the World Health Organization

54 (WHO) (WHO, 2020). An alarming response has been introduced across the globe due to its

55 high infectiousness and case fatality rate (Zhong et al., 2020). The identification of the risks and

56 the prevention of infectivity regarding COVID-19 have been stated to depend on human

57 perception (Zhong et al., 2020). Especially in the submergence of an infectious disease such as

58 COVID-19, different thoughts have shaped individuals' views on the illness.

59

60 Currently, the Coronavirus disease has spread to 213 countries with nearly 24 million confirmed

61 cases with close to 820,000 recorded deaths (WHO, 2020). Publicly available reports from the

62 Africa Centre for Disease Control (ACDC) states that confirmed cases of COVID-19 had risen to

63 1,203,769 and 28,289 deaths as of 25th of August 2020 (ACDC, 2020). As of 25th of August

64 2020, the West African subregion accounted for a significant proportion of cumulative COVID-

65 19 records in Africa. In Nigeria, there are 52,800 confirmed cases of COVID-19 with a total of

66 1007 deaths as of 25th of August 2020 (NCDC, 2020; WHO, 2020). Oyo State presently holds

67 the third spot on the Nigeria Centre for Disease Control (NCDC) daily COVID-19 updates, with

68 3058 laboratory-confirmed cases of COVID-19 and 37 deaths (NCDC, 2020). Urban areas in

69 Ibadan, the capital city of Oyo State frequently present with confirmed cases (Enwongo, 2020).

70

71 As a part of the emergency response activities across all States in Nigeria, health education

72 campaigns have been directed at members of the public (NCDC, 2020). These campaigns have

73 been aimed at knowledge improvement and the correction of certain misconceptions that have

74 been widely circulated among community members (NCDC, 2020) Education on precautionary

75 measures such as wearing of face masks, regular handwashing with soap and water or with

76 alcohol-based hand sanitizers, and social distancing have been done (NCDC, 2020; The Pace

77 Setter State, 2020).

78

79 It is evident that perception shapes one's knowledge and the adoption of safety measures

80 concerning the transmission of an infection. Data obtained from the perception of community

81 members regarding COVID-19 could help target interventions needed to improve the knowledge

82 of community members regarding Coronavirus. Superstitious beliefs have largely shaped the

83 perception of most Nigerians regarding the source and cause of COVID-19 (Chukwuorji & Iorfa,

84 2020). At the onset of the COVID-19 outbreak in Nigeria, infected persons belonged to either the

85 political class or high socioeconomic cadre (Chukwuorji & Iorfa, 2020). The characteristic

86 prevalence of COVID-19 infection among this group of persons accorded COVID-19 the name,

87 'a disease of the rich and mighty' (Nwaubani, 2020). Few months into the COVID-19 outbreak

88 in Nigeria, perceptions revolved around "immunity" to COVID-19 among the religious folks

89 with a disregard of bans on religious gatherings (Lichtensein, Ajayi, & Egbunike, 2020). Such

90 perceptions could have been influenced by several factors. Social media platforms such as

91 WhatsApp, Facebook, and Twitter have been used to spread false news on COVID-19, resulting

92 to panic disorder and anxiety among some persons and shunning of safety measures among

93   others (Aluh & Onu, 2020; Olapegba et al., 2020). Among many persons, physical distancing,

94   social isolations, restriction of religious and social gatherings etc. have been opined as alien

95   solutions in overcoming the COVID-19 pandemic in Nigeria and Africa at large (Olapegba et al.,

96   2020).

97

98   Literatures have reported the existence of knowledge relating to COVID-19 among Nigerians,

99   and it is expected that this would influence precautionary behavior among them. However,

100   inherent wrong perceptions may contribute to COVID-19 risk aversion measures (Iorfa et al.,

101   2020). Perceptions of COVID-19 has been influenced by age and gender. Due to their increased

102   vulnerability to illnesses, older persons have been predicted to increasingly adopt COVID-19

103   precautionary behavior compared to other population groups (Iorfa et al., 2020). Females have

104   been identified as models in the adoption of precautionary health behavior. In the COVID-19

105   context, the practice of handwashing, hygiene, and use of face masks occur more frequently

106   among females than males (Iorfa et al., 2020). Such an occurrence could be due to the perceived

107   susceptibility to illnesses among females as well as their health-conscious nature.

108

109

110   Given the importance of risk perception in behavior modification for disease control, it becomes

111   pertinent to assess the perception and practices regarding COVID-19. To the best of our

112   knowledge, the perception, and practices of community members in urban areas in Ibadan

113   regarding COVID-19 is currently unknown. An assessment of the perception and practices of

114   community members is important to reduce the risk for COVID-19 infection in Ibadan, a densely

115   populated city in Nigeria. We hypothesized that there is no difference in the sociodemographic

116   characteristics of the community members with the practices of COVID-19 mitigating factors.

117   This study thus aimed at assessing the perception and practices of community members in urban

118   areas in Ibadan regarding COVID-19.

119

120

121

122

123

Materials & Methods

Study design and study setting

A descriptive cross-sectional study design was used. Data was collected using an interviewer-administered questionnaire. Data collection took place from the 3rd of June to the 6th of June 2020. The study was carried out in Ibadan, Oyo State Nigeria. Ibadan is the capital city of Oyo State. Oyo State is one of the states in the south western part of Nigeria. Between 15th of June and 10th of August, 2020, confirmed COVID-19 cases had risen from 764 to 2,887 in Oyo State, and the State ranks next to Lagos State and the Federal Capital Territory on the NCDC reports for COVID-19 (NCDC, 2020; Enwongo, 2020). The official language in Nigeria is English, while the major informal language for communication in Ibadan is Yoruba, which has different dialects.

Study population

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

Sample size determination and sampling technique

The sample size was calculated using sample size formula for descriptive cross-sectional study. The population of the selected LGA is >100,000. The sample size was calculated using the Leslie Kish formula for sample size determination for a single proportion as follows:

$n=Z\alpha^2 p (1-p)/d^2$ where:

n= Minimum desired sample size

Z= the standard normal deviate, usually set as 1.96 which corresponds to 5% level of significance.

P= 50% was be used

d= Degree of accuracy (precision) set at 5 % (0.05)

155   $n= 1.96^2 x 0.5 x (1-0.5)/0.05^2 = 384$

156   A sample of 360 (93.8%) were studied in the urban communities of Ibadan. A multi-stage

157   sampling technique was used to select the respondents for the study

158

159   Stage 1:

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

161

162   Stage 2:

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

164

165   Stage 3:

166   A center location was chosen in the selected ward. A bottle was rotated to determine the

167   direction of movement of the interviewers. From the direction of the bottle tip all consenting

168   eligible adults from the households were included in the study until 120 persons were

169   interviewed in each LGA.

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

171

172   **Data Collection Methods**

173

174   The questionnaire has two sections.

175   Section A: Sociodemographic characteristics

176   The sociodemographic characteristics include age of respondents, sex, highest level of education,

177   ethnicity, and occupation.

178

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

180   Close-ended questions were asked on perception of the respondents on COVID-19, their current

181   practices, and what they would do if they were infected. Open-ended questions were asked on

182   the effects of COVID-19 on and suggestions to the government to curb the pandemic.

183

184   A six-point question was asked on the practice of handwashing. The respondents were asked to

185   demonstrate how they usually practice handwashing. The interviewer correctly marked all the

186   points demonstrated by respondents.

187

188   The questionnaire was adapted from a tool used for a similar perception study on Ebola Virus

189   Disease in 2014 (Gidado et al., 2014). The tool was validated by an infectious disease

190   epidemiologist. Pre-testing of the tool was done by administering 10 questionnaires in another

191   Local Government Area not selected for the study. A few ambiguous questions were modified.

192   Back-to-back translation of the questionnaire was done by experts who had sound understanding

193   of the Yoruba language. The questionnaire was administered to most of the respondents in

194   Yoruba Language.

195

196   Data were collected using a semi-structured interviewer-administered questionnaire. The

197   questionnaire was used for a similar study done in Lagos Nigeria during the Ebola Virus Disease

198   outbreak (Gidado, 2014). A few adaptations were made to suit the COVID-19 context. Face

199   validity were done by a panel of expert epidemiologist. The questionnaire was pre-tested among

200   adult resident of an LGA that was not selected for the study (Ibadan South-West). Some

201   questions were modified based on the feedback received during pre-testing. Data collection was

202   done by trained research assistants with minimum of first degree.

203

204   Independent variables included: Sociodemographic characteristics like age, sex, level of

205   education, and occupation.

206   Outcome/dependent variables were the practice of handwashing and the use of other mitigating

207   measures.

208

209   **Data Management**

210

211   Data were analyzed with SPSS version 23. Age was summarized using mean and standard

212   deviation, while frequencies, and percentages were used for categorical variables. A total score

213   of 6 was assigned to good practice of hand washing after the respondents were asked to

214   demonstrate hand washing. One point each was assigned for the following: palm, back of the

215 hand, spaces between the fingers, fingernails, wrist and thumbs. Only those who demonstrated

216 the 6 points were categorized to have had a good practice of handwashing. Chi square test was

217 used for the assessment of associations between sociodemographic characteristics and practice of

218 handwashing. Pearson correlation was between the perception of likelihood to contract COVID-

219 19 and practices to prevent COVID-19. P value of < 0.05 were accepted as significant.

220

221 **Ethical Approval and Consent to Participate**

222

223 Ethical approval to carry out the study was obtained from the Oyo State Ministry of Health

224 Ethical Review Committee, with reference number AD/13/479/1779[A]. Permission for the study

225 was sought from the respondents and their confidentiality was ensured. The respondents were

226 informed of their right to decline or withdraw from the study at any time without any adverse

227 consequences. No harm came to participants because of participation in this study.

228

229 **Results**

230

231 A total of 360 respondents were interviewed among urban residents in Ibadan. The mean age was

232 33.2 ± 10.6 years, among them 136 (37.8%) were aged between 25 and 34 years, and 225

233 (62.5%) were females. Those with secondary education and above were 332 (92.2%), 314

234 (87.2%) were of the Yoruba ethnic group, and 171 (47.5%) engaged in business or trading.

235 (Table 1). Among the 360 respondents 342 (95%) have heard of COVID-19.

236

237 Most frequently reported practices among respondents following the development of COVID-19

238 symptoms were: Going to the hospital 171(50%) and calling the COVID-19 help number 105

239 (30.7%). The other reported practices included: Praying and staying at home each with 29 (8.5%)

240 respondents as shown in Figure 1.

241

242 Regarding COVID-19, 89 (26%) knew they could contract COVID-19, while 41 (12%)

243 perceived it as an exaggerated event. It was also perceived as an intention for corruption by 23

244 (6.7%), COVID-19 was an attack by the Western World was reported by 68 (19,9%), and

245 122(35.7%) called COVID-19 a source of panic. The effects most frequently reported by

246   respondents were hunger/low income 167 (48.8%) and academic delay 30 (8.8%). Regarding

247   suggestions to the government, 108 (31.6%) suggested the provision of medical

248   supplies/palliatives/ seeking of cure, while 68 (19.9%) suggested free testing/free treatment.

249   Other effects of COVID-19 and suggestions to the government are as shown in Table 2.

250

251   The most frequently reported practice for prevention of COVID-19 among respondents were the

252   use of face masks by 224 (65.5%) and social distancing by 164 (48%). Others included: Staying

253   at home/following COVID-19 updates 8 (2.2%), taking Vitamin C/fruits/warm water 4 (1.1%),

254   and doing nothing 5 (1.4%) as shown in Figure 2.

255

256   Figure 3 shows that only 80 (22%) of respondents demonstrated good handwashing practices.

257   Among respondents aged less than 25 years, 16 (23.5%) had good handwashing practice

258   compared to 14(29.8%) aged above 45 years. Among females, 49 (22.8%) had good

259   handwashing practices compared to 22(17.3%) males although these differences are not

260   statistically significant (Table 3).

261

262   Males have 27.5% less odds of having good hand washing practice compared to females, though

263   not statistically significant [AOR 0.725,95%CI=0.418-1.259, p=0.253], (Table 4).

264

265   The perception of the likelihood to contract COVID-19 and practices to prevent COVID-19 had

266   a weak positive correlation of 0.239(p<0.001).

267

268   **Discussion**

269

270   This study found that many individuals lived in denial of the existence of COVID-19. The

271   perception of the illness as an avenue for politicians to enrich themselves indicates that there still

272   exists inadequate knowledge of the Coronavirus among community members in Ibadan. Denial,

273   ignorance regarding COVID-19, and the existing lack of trust in the Nigerian government have

274   been reported since the outbreak of COVID-19 in Nigeria (Chukwuorji & Iorfa, 2020). From the

275   present study, a high rating of the perceived likelihood of contracting COVID-19 was observed

276 among 26% of respondents, while it was minimally perceived as an attack by the Western World
277 among nearly 20%.

278

279 Findings obtained from this study revealed that the practices most often adopted following the
280 development of COVID-19 symptoms were either to go to the hospital or call the COVID-19
281 help number. This indicates that the source of help for COVID-19 treatment is well known
282 among community members in urban areas of Ibadan. Although distrust in government capacity
283 regarding COVID-19 is currently obtainable, individuals are willing to take proactive measures
284 following the suspected development of COVID-19 symptoms (Chukuorji & Iorfa, 2020). An
285 Indian study similarly reported that hospital visitation was frequently opted for as a step to be
286 taken following the development of COVID-19 in individuals in a close relationship (Dkar et al.,
287 2020).

288

289 We found that about the use of face masks and practice of social distancing measures were more
290 frequently embraced among respondents compared to other COVID-19 mitigation measures,
291 although full adherence was low. A web-based study conducted in Nigeria mostly stated mouth-
292 covering while sneezing, wearing of face masks, and avoidance of crowded spaces as self-
293 reported practices among respondents (Iorfa et al., 2020). Our findings revealed that myriads of
294 perceptions were associated with COVID-19. These included COVID-19 as an exaggerated
295 illness with intentions for corruption, its highly infectious and deadly nature, and a reason for
296 panic disorders. Similarly, the likelihood of positive practices concerning COVID-19 was
297 associated with a positive perception of the risk of infection (Zhong et al., 2020). Findings from
298 previous studies conducted in Nigeria also corroborate the key role of positive risk perception on
299 imbibing COVID-19 protective practices and attitudes (Iorfa et al., 2020). The finding from the
300 present study contradicts the assumption of the Health Belief Model (HBM) that protective
301 actions are more likely to succeed a high level of perceived susceptibility (Tarkang et al., 2015).
302 The results obtained herein is higher than the knowledge concerning the practice of face masks
303 in Saudi Arabia (Al-Hanawi et al., 2020). Due to its deadly nature, COVID-19 has introduced
304 fear which has compelled protective actions from individuals regarding the illness (Zhong et al.,
305 2020).

306

307   Previous studies have shown that fear could motivate healthy behavior among individuals
308   especially during epidemics, but such behavior may not be sustainable (Witte, 1998; Nabi, 1999;
309   Ufuwa et al., 2020). The adoption of these healthy behaviors in the present study is in tandem
310   with the recommendations of the World Health Organization (WHO) on safety measures for
311   COVID-19 (WHO, 2020). The insufficiency of fear as a propellant for adherence to
312   recommended guidelines for COVID-19 has been reported to be an outplay of knowledge-
313   attitude discrepancy (Iorfa et al., 2020). These findings imply that individual perception of
314   infectious illnesses such as COVID-19 may not be sufficient to influence the adoption of
315   protective practices. This explains the need for a regular sensitization of community members on
316   COVID-19 safety measures regardless of their perception concerning the illness.

317

318   We found that the practice of handwashing was commoner among individuals with a greater risk
319   perception for COVID-19. Because these individuals perceive themselves as vulnerable to
320   COVID-19 infection, they are more likely to engage in handwashing practice. Handwashing
321   practice has been identified as one of the mitigation strategies for breaking the chain of COVID-
322   19 transmission. An online-based Nigerian survey revealed a higher practice of handwashing
323   compared to other COVID-19 preventive measures (Iorfa et al., 2020). A study conducted in
324   Ibadan on hand hygiene practices post Ebola virus disease outbreak revealed a high proportion of
325   inadequate self-reported hand hygiene practice (Martins & Osiyemi, 2017). Lassa fever studies
326   conducted in Edo State reported inadequate handwashing practices, while a similar study in
327   Kaduna State, Nigeria reported good handwashing practices among respondents (Tobin et al.,
328   2019;). The similarities of most of these findings with ours imply the wide acceptance of the
329   practice of handwashing in the management of infectious diseases.

330

331   We found that COVID-19 poses significant threat to local economy, resulting in low income and
332   resultant hunger. This is likely due to the increased cost of purchasing goods or a result of the
333   lockdown which has denied many individuals the opportunity to earn their income. Denial of
334   opportunities to engaging in money-making ventures was experienced and impacts such as
335   hunger was greatly felt among many persons (Chukwuorji & Iorfa, 2020). This explains the need
336   for the provision of palliatives to fight hunger and reduce susceptibility to other infections during
337   the COVID-19 outbreak. Similarly, decreased productivity and job losses and an unprecedented

338 economic disaster have been reported (Atalan, 2020). Contrary to the finding in this study, other
339 studies have reported stress and anxiety as psychological reactions due to the Coronavirus
340 pandemic (Atalan, 2020). Other psychological reactions such as boredom, anger, and loneliness
341 have been notably identified as resultant threats during the COVID-19 pandemic (Aluh & Onu,
342 2020). This calls for the provision of psychosocial support for individuals during the COVID-19
343 lockdown. Interestingly, a recognition of the significance of essential staff has also resulted from
344 the COVID-19 outbreak (The National, 2020).

345

346 Pertaining to suggestions to the government concerning COVID-19 containment, the provision
347 of medical supplies and palliatives received highest recommendation among respondents. Most
348 Nigerian households depend on daily earnings of breadwinners, and difficulty in survival was
349 experienced during the COVID-19 lockdown which lasted for three months in Nigeria
350 (Chukwuorji & Iorfa, 2020). Also, health education, the enforcement of preventive measures,
351 and free testing and treatment received much recognition. These imply two things. Firstly, health
352 education concerning COVID-19 should be done by public health officials in simple,
353 unambiguous languages which will facilitate the understanding of community members.
354 Secondly, the availability of medical supplies and palliatives would enhance the adherence to
355 safety measures for COVID-19, such as the use of face masks among community members.
356 Similar suggestions have been made in previous studies (Kebede et al., 2020)

357

358 **Strengths of the Study**

359

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

365

366 **Limitations of the Study**

367

368 As this study was limited to the perception and practices regarding COVID-19, the knowledge of

369 community members on the illness was not addressed. The assessment of factors influencing

370 COVID-19 practices among community members was obscure in this study.

371

372 Conclusions

373

374 The adoption of preventive measures depends on an individual's perception of the risk of an

375 illness. Adequate and correct risk perception for COVID-19 is needed to forestall onward

376 transmission of COVID-19. We hereby recommend enhanced sensitization and health education

377 sessions for all community members about COVID-19 in Ibadan metropolis regardless of their

378 sociodemographic characteristics. Also, health campaigns should be more focused on practices

379 such as regular handwashing with soap and water, physical and social distancing, which protect

380 against transmission of COVID-19.

381

382 Acknowledgements

383 The authors express their gratitude to all community members for their willingness and

384 cooperation to participate in this study.

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401 **References**

402

403 ACDC. 2020. Coronavirus Disease 2019 (COVID-19). Africa Centre for Disease Control.
404 Available at: https://africacdc.org/%20covid-19/. (accessed 25th August 2020).

405

406 Al-Hanawi MK, Angawi K, Alshareef N, Qattan AMN, Helmy HZ, Abudawood Y, Alqurashi
407 M, Kattan WM, Kadasah NA, Chirwa GC, Alsharqi O. 2020. Knowledge, Attitude, and Practice
408 Toward COVID-19 among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study.
409 *Frontiers in Public Health* 8: 1-9.

410

411 Aluh DO, Onu JU. 2020. The Need for Psychosocial Support Amid COVID-19 Crises in
412 Nigeria. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online
413 publication. Doi: 10.1037/tra0000704. Available at:
414 https://www.researchgate.net/publication/342372240.

415

416 Atalan A. 2020. Is the lockdown important to prevent the COVID-9 pandemic? Effects on
417 psychology, environment, and economy-perspective. *Annals of Medicine and Surgery* 56: 38-42.

418

419 Chukwuorji JC, Iorfa SK. 2020. Commentary on the Coronavirus Pandemic: Nigeria.
420 *Psychological Trauma: Theory, Research, Practice, and Policy*. 1-3. Doi: 10.1037/tra0000786.

421

422 de Zwart O, Veldhuijzen IK, Elam G, Aro AR, Abraham T, Bishop GD, Voeten HACM,
423 Richardus JH, Brug J. 2009. Perceived Threat, Risk Perception, and Efficacy Beliefs Related to
424 SARS and Other (Emerging) Infectious Diseases: Results of an International Survey.
425 *International Journal of Behavioral Medicine* 16: 30–40. Doi: 10.1007/s12529-008-9008-2.

426

427 Dkhar SA, Quansar R, Saleem SM, Khan SM. 2020. Knowledge, Attitude, and Practices Related
428 to COVID-19 Pandemic among Social Media Users in J&K, India. *Indian Journal of Public*
429 *Health* 64: Suppl S2:205-210. Doi: 10.4103/ijph.IJPH_469_20.
430
431
432 Gidado S, Oladimeji AM, Roberts AA, Nguku P, Nwangwu IG, Waziri NE, Shuaib F,
433 Oguntimehin O, Musa E, Nzuki C, Nasidi A, Adewuyi P, Daniel TA, Olayinka A, Odubanjo O,
434 Poggensee G. 2015. Public knowledge, perception and source of information on ebola virus
435 disease - Lagos, Nigeria; September, 2014. *PLoS Currents* 7:
436 ecurrents.outbreaks.0b805cac244d700a47d6a3713ef2d6db. Doi:
437 10.1371/currents.outbreaks.0b805cac244d700a47d6a3713ef2d6db.
438
439 Iorfa SK, Ottu IFA, Oguntayo R, Ayandele O, Kolawole SO, Gandi GC, Dangiwa AL, Olapegba
440 PO. COVID-19 knowledge, risk perception and precautionary behavior among Nigerians: A
441 moderated mediation approach. *Preprint*. Available at:
442 *https://www.researchgate.net/publication/341659395*.
443
444 Kebede Y, Yitayih Y, Birhanu Z, Mekonen S, Ambelu A. 2020. Knowledge, perceptions and
445 preventive practices towards COVID-19 early in the outbreak among Jimma university medical
446 center visitors, Southwest Ethiopia. *PLoS ONE* 15: e0233744. Doi:
447 10.1371/journal.pone.0233744.
448
449 Lichtenstein A, Ajayi R, Egbunike N. 2020. Across Africa, COVID-19 heightens tension
450 between faith and science: Some leaders reject expert advice to ban religious gatherings.
451 Available at: *https:// globalvoices.org/2020/03/25/across-africa-covid-19-heightens-*
452 *tensionbetween-faith-and-science/*. (accessed 11 August 2020).
453
454 Martins SO, Osiyemi AA. 2017. Hand hygiene practices post Ebola virus disease outbreak in a
455 Nigerian Teaching Hospital. *Annals of Ibadan Postgraduate Medicine* 15:16-22.
456

457   Nabi R. In: *A cognitive-functional model for the effects of discrete negative emotions on*
458   *information processing, attitude change, and recall.* Communication Theory; 1999. 9: p. 292–
459   320. Doi: 10.1111/j.1468-2885.1999.tb00172.x.

460

461   NCDC. 2020. COVID-19 Outbreak in Nigeria Situation Report. Abuja: Nigeria Centre for
462   Disease   Control.   Available   at:
463   *https://ncdc.gov.ng/themes/common/files/sitreps/0daa083aeed110eddba8937c1f90a6d9.pdf.*
464   (accessed on 26th August 2020).

465

466   NCDC.   COVID-19   Nigeria.   Nigeria   Centre   for   Disease   Control.   Available   at:
467   *https://covid19.ncdc.gov.ng*/ (accessed on 11 August, 2020).

468

469   Nwaubani A. T. 2020. Coronavirus: Why some Nigerians are gloating about Covid-19. BBC
470   News. Available at: *https://www.bbc .com/news/world-africa-52372737* (accessed on 11 August,
471   2020).

472

473   Olapegba PO, Ayandele O, Kolawole SO, Oguntayo R. 2020. COVID-19 Knowledge and
474   Perceptions   in   Nigeria.   *Preprint.*   Available   at:
475   *https://www.researchgate.net/publication/340596815* (accessed 11 August 2020).

476

477   The National. 2020. Covid-19: How lockdown could affect our relationships. Available at:
478   *https://www.thenational.scot/news/18405753.covid-19-lockdown-affect-relationships/* **(accessed**
479   15 June 2020).

480

481   Tarkang EE, Zotor FB. 2015. Application of the Health Belief Model (HBM) in HIV Prevention:
482   A Literature Review. *Central African Journal of Public Health* 1: 1-8.

483

484   Enwongo A, . 2020. Covid-19: Oyo Confirms 56 New Cases In 13 LGAs. Available at
485   *https://thewhistler.ng/covid-19-oyo-confirms-56-new-cases-in-13-lgas/.* (accessed 25 June 2020).

486

487   The Pace Setter State. 2020. War On COVID-19: Oyo Threatens To Shut Markets For Flouting
488   Precautionary Measures. Oyo State. Available at *https://oyostate.gov.ng/war-on-covid-19-oyo-*
489   *threatens-to-shut-markets-for-flouting-precautionary-measures/.* (accessed 26 June 2020).
490
491   Tobin EA, Asogun DA, Isah EC, Ugege OG, Ebhodaghe P 2013. Knowledge and practice of
492   infection control among primary care providers in an endemic suburban community of Edo
493   State: implications for control. *Journal of Medicine and Medical Sciences* 4: 311-318.
494   Ufuwa IS, Akpa CO, Umeokonkwo CD, Umoke M, Oguanuo CS, Olorukooba AA, Bamgboye
495   E, Balogun MS. 2020. Knowledge and risk perception towards Lassa fever infection among
496   residents of affected communities in Ebonyi State, Nigeria: implications for risk communication.
497   *BMC Public Health* 20:1-10. Doi: /10.1186/s12889-020-8299-3.
498
499   Witte K. 1998. Fear as motivator, fear as inhibitor: Using the extended parallel process model to
500   explain fear appeal successes and failures. In: Andersen PA, Guerrero LK (eds) *The handbook of*
501   *communication and emotion: research, theory, applications, and contexts*. San Diego, CA:
502   Academic, 423–450.
503
504   WHO. 2020. Coronavirus disease 2019 (COVID-19) Situation Report –51 Geneva: World
505   Health Organization. Available at: https://covid19.who.int/. (accessed 26th August 2020).
506
507   WHO. 2020. World Health Organization. Coronavirus disease (COVID-19) Situation Report–
508   149 Geneva: World Health Organization. Available at: *https://www.who.int/docs/default-*
509   *source/coronaviruse/situation-reports/20200623-covid-19-sitrep-155.pdf?sfvrsn=ca01ebe_2*
510   (accessed 26th August 2020).
511
512   WHO. 2020. Coronavirus disease (COVID-19) advice for the public: World Health
513   Organization. *https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-*
514   *public* (accessed 25 June 2020).
515
516   Zhong B-L, Luo W, Li H-M, Zhang Q-Q, Liu X-G, Li W-T, Li Y. 2020. Knowledge, attitudes
517   and practices towards COVID19 among Chinese residents during the rapid rise period of the

518   COVID-19 outbreak: a quick online cross-sectional survey. *International Journal of Biological*

519   *Sciences* 16:1745–1752. Doi: 10.7150/ijbs.45221

520

521

Figure 1

Practices of Ibadan residents to COVID-19 symptoms

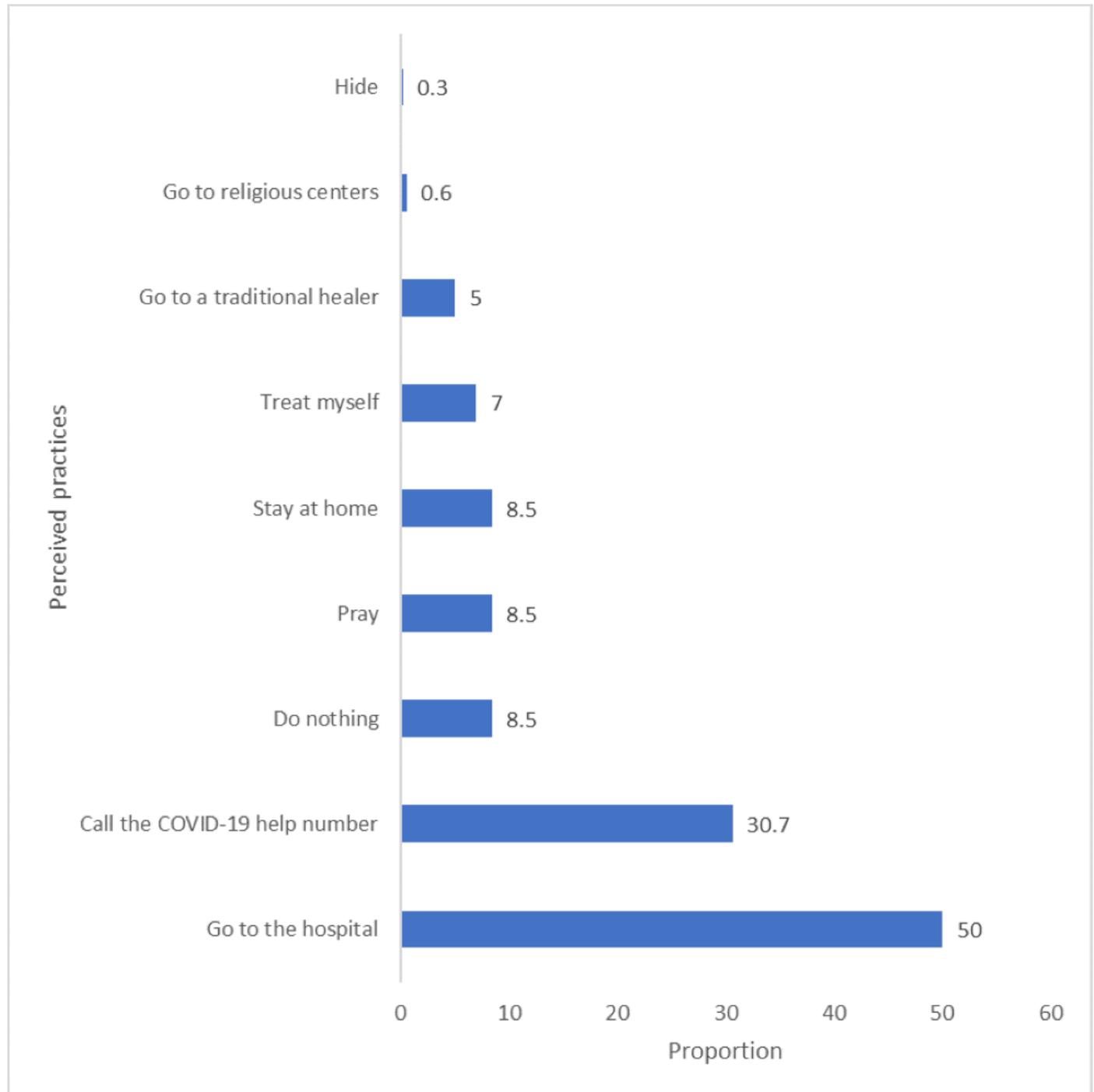



Figure 2

Practices of COVID-19 prevention among respondents

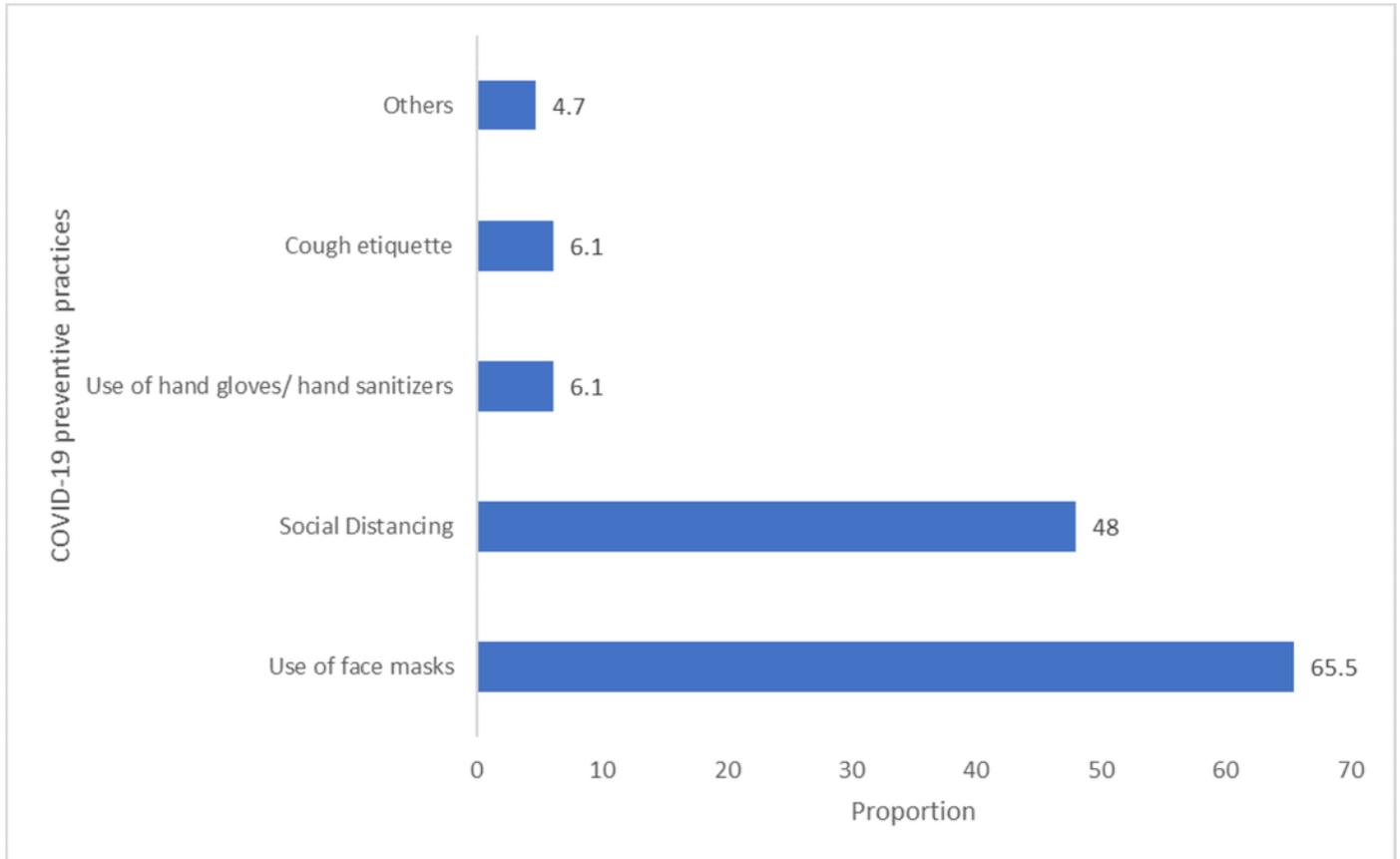
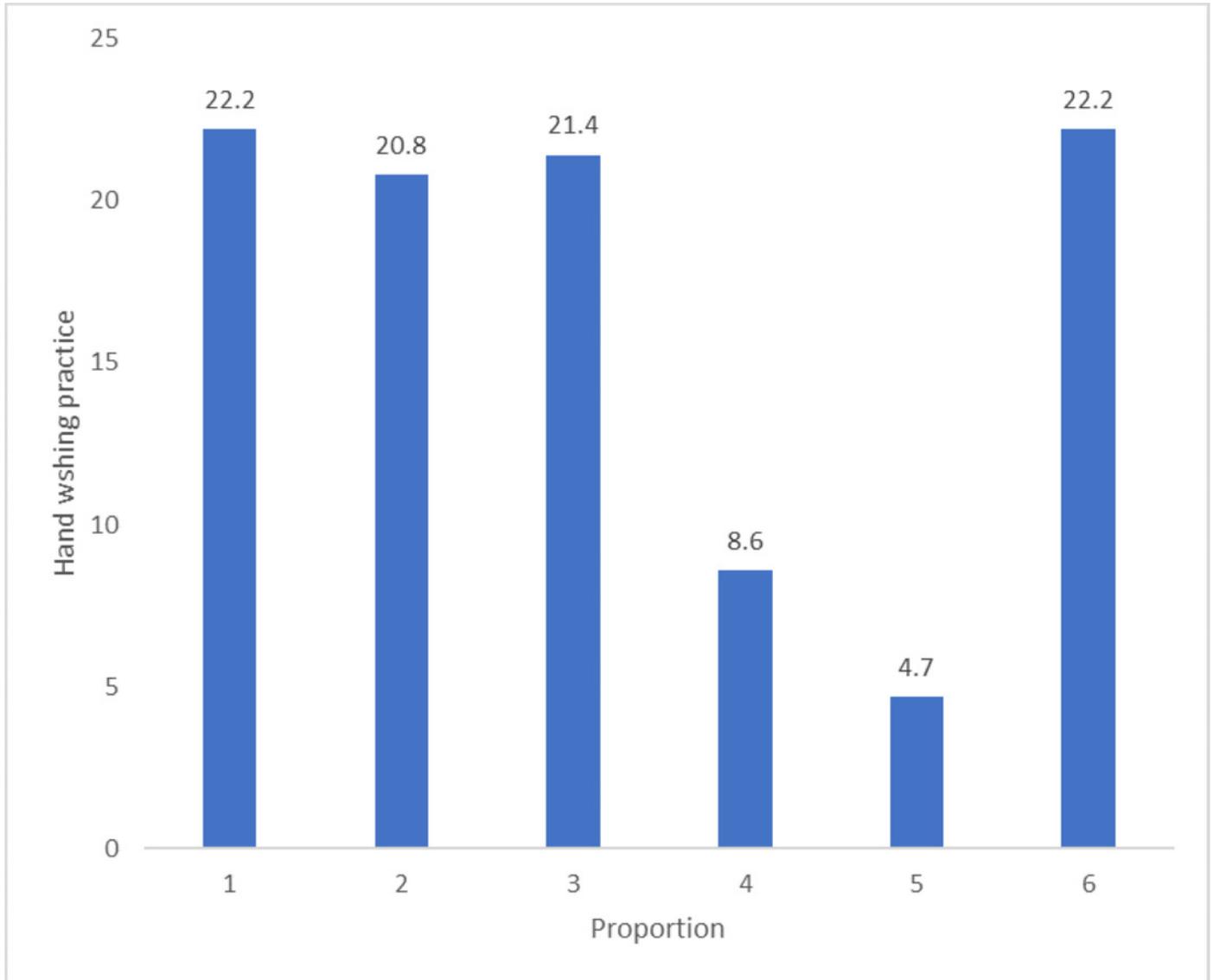



Figure 3

Points scored in handwashing demonstration

Sociodemographic characteristics of respondents among Ibadan residents, 2020

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
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

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

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)
No idea/Do anything	27 (7.9)

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

Sociodemographic Variable	Practice of hand washing		Chi-square	p-value
	Good	**Poor**		
Age	**n (%)**	**n (%)**		
<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)		
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)		

Multivariate analysis of the determinants of good handwashing practices

Sociodemographic Variable	AOR	95%CI of AOR		p-value
		Lower	Upper	
Age				
<25	0.764	0.276	2.116	0.605
25-34	0.534	0.248	1.151	0.109
35-44	0.595	0.271	1.306	0.196
>44	1			
Sex				
Male	0.725	0.418	1.259	0.253
Female	1			
Highest level of Education				
Primary and below	1.146	0.451	2.911	0.775
Secondary and above				
Ethnicity				
Yoruba	1.279	0.534	3.065	0.581
Ibo	0.750	0.083	6.735	0.797
Hausa	1.279	0.534	3.065	0.581
Others				
Occupation				
Business/Trader	0.933	0.358	2.434	0.888
Artisans	1.619	0.546	4.804	0.385
Professional/Civil Servant	0.869	0.219	3.448	0.842
Unemployed/housewife/student	1			