

 Open access • Posted Content • DOI:10.1101/2020.04.26.20080820

Knowledge, attitudes, and practices (KAP) towards COVID-19: A quick online cross-sectional survey among Tanzanian residents. — [Source link](#)

Sima Rugarabamu, Mariam Ibrahim, Aisha Byanaku

Institutions: Muhimbili University of Health and Allied Sciences

Published on: 05 May 2020 - medRxiv (Cold Spring Harbor Laboratory Press)

Related papers:

- [Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey.](#)
- [Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia.](#)
- [Knowledge, Perceptions, and Attitude of Egyptians Towards the Novel Coronavirus Disease \(COVID-19\).](#)
- [Knowledge, Attitude and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study](#)
- [Knowledge, attitude, practice and perceived barriers among healthcare workers regarding COVID-19: a cross-sectional survey from Pakistan.](#)

Share this paper:    

View more about this paper here: <https://typeset.io/papers/knowledge-attitudes-and-practices-kap-towards-covid-19-a-1yfie7ofgi>

Knowledge, attitudes, and practices (KAP) towards COVID-19: A quick online cross-sectional survey among Tanzanian residents.

Sima Rugarabamu¹, Mariam Ibrahim², Aisha Byanaku³

¹Department of Microbiology and Immunology, Muhimbili University of Health and Allied Sciences, Dar-Salaam, Tanzania

²Tanzania Industrial Research and Development Organization (TIRDO), P. O. Box 23235 Dar es salaam, Tanzania

³Amref Health Africa in Tanzania, P O Box 2773 Dar es Salaam, Tanzania

* sima_luv@yahoo.com

Abstract

Background

The COVID-19 pandemic is a global health and societal emergency that requires the adoption of Unprecedented measures to control the rapid spread of the ongoing COVID-19 epidemic. Residents' adherence to control measures is affected by their knowledge, attitudes, and practices (KAP) towards the disease, therefore. This study was carried out to investigate KAP towards COVID-19 KAP among residents in Tanzania during the April –May 2020 period of the epidemic.

Methods

This was a cross-sectional study that involved a sample of online Tanzanian residents who was recruited randomly by sending an invitation asking to answer my survey". Survey Monkey tool was used to develop a link and KAP questionnaire for data collection. Participants self-selected themselves when they choose to answer the questionnaire. The questionnaire assessed demographic characteristics of participants, Knowledge, attitude, and practice toward COVID. simple descriptive to complex analyses of multivariate was carried out using SPSS 17.

Results

Four hundred residents completed a survey. The mean age of study participants was 32 years, and majorities were females 216 (54.0%). There were no significant differences in demographic variables ($p > 0.3$). Those who held a bachelor's degree or above (60.3%) had a more correct score. Overall, (84.4%) of participants had good knowledge which was

NOTE: This preprint reports new research that has not been certified by peer review and should not be used to guide clinical practice.

significantly associated with education level ($p=0.001$). Nearly all of the participants (96.0%) had confidence that COVID-19 will be eliminated. The majority of the respondents (77%) did not go to a crowded place in recent days. Multiple linear regression analysis showed that male gender, age-group of 16-29 years, and education of secondary or lower were significantly associated with lower knowledge score.

Conclusion

Our findings revealed good knowledge, optimistic attitudes, and appropriate practices towards COVID-19. Suggesting that a community-based health education program about COVID-19 is helpful and necessary to control the disease.

Keywords: COVID-19, Knowledge, Attitude, Practice, Tanzania

Introduction

Coronavirus disease 2019 (COVID-19) is a global health and societal emergency respiratory disease that is caused by a novel coronavirus and was first detected in December 2019 in Wuhan, China. They are characterized by sudden onset, fever, fatigue dry cough, myalgia, and dyspnea. It is reported that 10-20 % of the patients develop severe cases, which is characterized by acute respiratory distress syndrome, septic shock, difficult-to-tackle metabolic acidosis, and bleeding and coagulation dysfunction [1,2]. Although clinical data have shown the overall case fatality rate of COVID-19 ranges 2 -5% worldwide much lower than those of SARS (9.5%), MERS (34.4%), and H7N9 (39.0%), pathogens continue to emerge and spread to the population at risk, hence demanding an urgently need to move from purely responsiveness activities to also include proactive management of the infectious disease [1-3]. The ongoing COVID-19 epidemic has spread very quickly, and by April 23, 2020, the virus had reached over 30 countries altogether, resulting in 2 544 792 laboratory-confirmed infections and 175

694 deaths. [4]. World Health Organization (WHO) declared it a public health emergency of international concern and has called for collaborative efforts to prevent its rapid spread [5].

Tanzania is among African countries that have been hit by the COVID-19 epidemic [6]. Until April 24, Government authorities announced 284 cases of COVID-19, among them 256 are in stable condition, seven in special care, 37 recovery, and 10 deaths [7]. Dar-es-salaam City and Island of Zanzibar are leading the number of infected cases other regions affected are Mwanza, Dodoma, Pwani, Kagera, Manyara, and Morogoro [8]. Several measures have been adopted to control the COVID-19 transmission in Tanzania, including closing all schools and universities, observing physical distancing, the prohibition of mass gathering, isolation, and care for infected people and suspected cases. Moreover, Tanzania residents were obliged to perform handwashing utilizing soap and running water as well as alcohol-based hand sanitizer and were urged to wear face masks outside their homes.

The fight against COVID-19 is as yet proceeding in Tanzania. To ensure control achievement, individuals' adherence to these control measures is essential [9-10]. Reports from different outbreaks recommend that Knowledge and attitudes towards infectious disease can sometimes result in a level of panic among the population and complicate endeavors to prevent the spread of the disease [9-12]

There is an urgent need to understand the public's awareness of COVID-19 in Tanzania to facilitate outbreak management of COVID-19. This study was carried out to investigate KAP towards COVID-19 among residents in Tanzania during the March –April 2020 period of the epidemic.

Material and Methods

Study design and data collection

Tanzania is grouped into five ecological zones comprising of 30 regions. 8 (27%) of the total include its largest populated region of Dar-es-salaam reported at least a COVID -19 case. This cross-sectional survey took place from 15th - 28th of April 2020. Due to the infectious nature of disease transmission online survey forms were used to collect the data. Residents were recruited randomly by sending an invitation asking to answer the survey". Survey Monkey tool was used to develop a link and KAP questionnaire for data collection. Participants self-selected themselves when they choose to answer the questionnaire. A total of 5000 residents were assumed to actively use media connections. Calculation using statistical software gave a minimum sample of 384 [13]. To adjust for non-responders 400 residents conveniently receive the link with the Questionnaire [14]. The questionnaire consisting of 20 questions was based on a KAP survey template (Appendices 1 & 2). This template was modified and adapted to the Swahili language and according to guidelines for clinical and community management of COVID-19 by the Ministry of Health Tanzania and then validated and piloted. The questionnaire had clear demographics and KAP questions. Demographic variables included age, gender, and education Level where KAP had 17 questions regarding clinical presentations, transmission routes, and control of COVID-19 (Appendix 1). These questions were answered on a Yes/No, true/false, and "I don't know" measures. The total knowledge score ranged from 0 to 12, with a higher score indicating a better knowledge of COVID-19. Only one participant per survey setting was used which restricted the participants from providing more than one response. Data Response was then imported into SPSS 17 and recoded. The Knowledge score was determined from a sum of 12 points. The mean score was compared and a score above mean was considered as acceptable information [15, 16]. Socio-demographic data were entered into the spreadsheet (MS-Excel 2010, Microsoft Corp., Redmond, WA, USA) and descriptive statistics (counts and percentages) and relevant tables were used to summarize information. A Chi-square analysis was used to compare proportions.

Analysis of variance (ANOVA) was used to determine differences whereas Significance was considered at a p-value <0.05.

Results

Socio-demographic characteristics of the study population

A total of 400 participants completed the survey questionnaire. The age of the patients ranged from 18 to 75 years (mean \pm SD = 32.0 \pm 10.3 years). Women represented 54% of the participants. A majority of the participants (60.3%) held a bachelor's degree or above. their socio-demographic characteristics are given in (Table 1).

Table 1: Sociodemographic characteristics of study participants (N=400)

Variables	Frequency n (%)	p-value
Sex		
Male	184(46.0)	0.773
Female	216(54.0)	
Age(years)		
16-29	34(8.5)	0.438
30-49	247(61.7)	
50-59	114(28.5)	
60+	5 (1.3)	
Education Level		
Primary	68 (17.0)	0.268
Secondary	90(22.5)	

College/University

242(60.5)

Overall, 84.4% of the participants answered questions correctly. Out of the highest possible score of 12 points, the mean knowledge score was 9.3 ± 2.0 . The median knowledge score was 9 ranging from 2 to 10. A score above 8 was considered a good knowledge level. 60.5% of the degree older score above 9. (Figure 1).

Figure 1: Percentage distribution of correct scores.

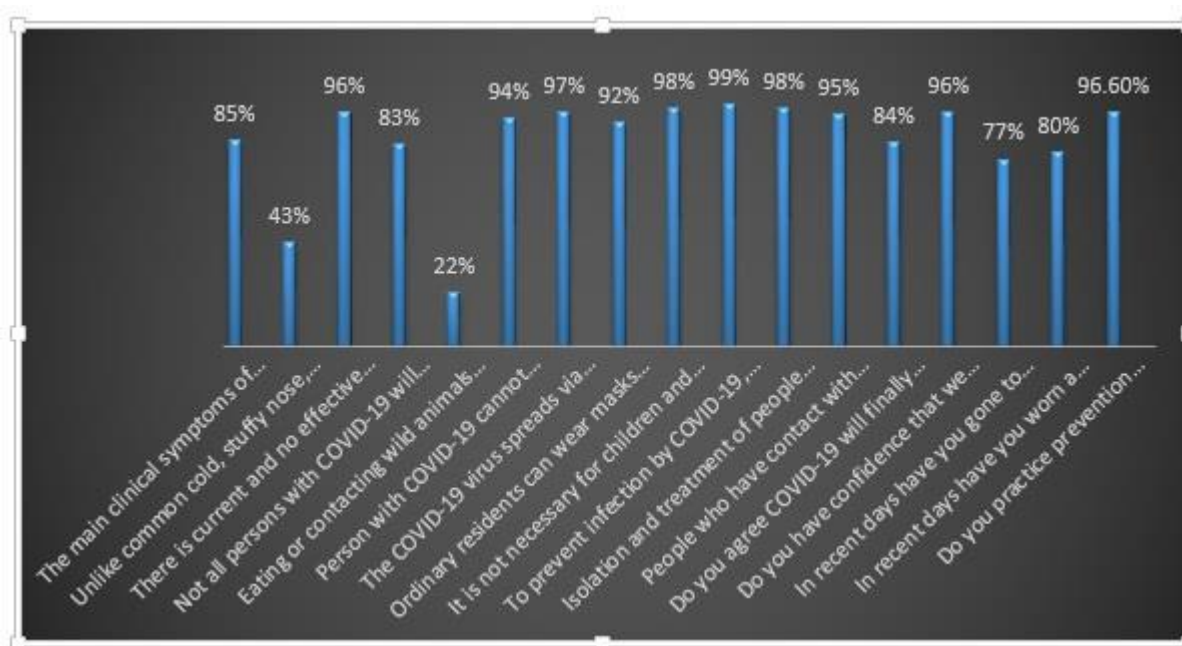


Table 2: Distribution of mean COVID-19 knowledge by demographic variables

Characteristics	Knowledge Level n (%)		Mean Knowledge score \pm standard deviation	P-Value
	Good	Poor		
Sex				
Male	151	33	8.5 ± 2.0	<0.001
Female	157	59	8.9 ± 1.3	
Age-group (years)				
16-29	30	4	8.4 ± 1.9	

30-49	215	52	9.1 ± 1.2	<0.001
50+	90	36	8.9 ± 1.3	
Education				
Primary	30	38	7.7 ± 2.4	<0.001
Secondary	43	47	8.8 ± 1.5	
College/University	235	7	10.0 ± 1.2	

The rate of correct answers to the knowledge about COVID-19 was 70.2-98.6% (Table2). The mean score was 8.7 ± 1.6 . Knowledge scores varied across genders, age-groups, and education levels ($P < 0.001$). Male gender (β : -0.284, $P < 0.001$), age-group of 16-29 years (β : -0.302, $P < 0.001$), and education of bachelor's degree or lower (β : -0.191 ~ -1.346, $P < 0.001$), were significantly associated with lower knowledge score (Table 2).

Attitudes and practices regarding COVID-19

The majority of the respondents agreed that COVID-19 will finally be successfully controlled (96%). The attitude towards the final success in controlling COVID-19 had no significant differences across genders and education levels ($P < 0.71$). The majority of the participants had not visited any crowded place (77%) and wore masks when going out (80.0%) in recent days. On questions related to transmission, almost all participants (98%) correctly identified that COVID-19 is transmitted by respiratory droplets and also factors such as chronic illnesses and obesity can lead to a serious case (Figure 1).

Discussion

This is the first online cross-section study to examining the KAP towards COVID-19 among Tanzania residents. In this study, 84.4% of the participant had a good knowledge of COVID-19, which is comparable with a study conducted in China where more than seventy percent of study participants had good knowledge. Previous studies from different have identified good knowledge in infection control as a predictor of good practice [17, 18], besides, they highlighted that major gaps in disease knowledge could result in uncertainties and non-stringent control measures [19].

Most of the participants had confidence that COVID-19 will be eliminated and had a certainty that we can win the fight against the infection. This attitude could have attributed to positive practice with majority reporting not visit crowded places and wore masks whenever they go out of their homes. Furthermore, nearly all reported adhering to preventive measures as instructed by their national health care authority. This study has identified factors associated with KAP. The findings are useful for policy-makers to quickly consider the need for a comprehensive specific group target health education program for COVID-19 prevention and control.

The finding of a high level of knowledge among residents is a good predictor of positive impact initiative to involve the community in a fight for COVID-19. however, the result might have badly affected by the convenience sampling method were by the majority of volunteers held degree or higher. These are the privileged group who would actively learn knowledge of this infectious disease from various channels of information, the official website of the Ministry, and the WhatsApp account. This speculation may be solved by considering the same study in vulnerable or underprivileged communities.

The strength of this study lies in its large sample recruited during a peak of the COVID-19 outbreak. Nevertheless, compared to the population statistics, our sampling method picked middle and high economic societies, we speculate that knowledge might have been over overestimated and attitude and practice underestimated. Community based national cross-sectional study is recommended when an outbreak is over.

Conclusion

Our findings emphasize the need to investigate the KAP towards COVID-19 among Tanzania residents of low socioeconomic status. This will encourage an optimistic attitude and maintaining safe practices. community-based health education program health education programs about COVID-19 are helpful and necessary to control the disease.

Conflicts of interest

The authors declare the absence of any competing interests.

Funding

The study did not receive any fund

References

1. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. *Chin J Epidemiol.* 2020; 41:145–51. [[PubMed](#)] [[Google Scholar](#)]
2. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y. et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet.* 2020; 395:507–13. [[PMC free article](#)] [[PubMed](#)] [[Google Scholar](#)]
3. Munster VJ, Koopmans M, van Dormagen N, van Riel D, de Wit E. A Novel Coronavirus Emerging in China - Key Questions for Impact Assessment. *N Engl J Med.* 2020; 382:692–4. [[PubMed](#)] [[Google Scholar](#)]
4. World Health Organization. Coronavirus disease (COVID-2019) situation reports. 2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>. (Access Feb 16, 2020)
5. World Health Organization. The 2019-nCoV outbreak is an emergency of international concern. 2020. <http://www.euro.who.int/en/health->

- topics/emergencies/pages/news/news/2020/01/2019-ncov-outbreak-is-an-emergency-of-international-concern (access Feb 16, 2020)
6. Ndal, Dorothy. "Covid-19: Tanzania Reports 30 New Cases." The East African, The East African, 22 Apr. 2020, www.theeastafrican.co.ke/news/ea/Covid19-Tanzania-reports-30-new-cases/4552908-5531654-lcihhq/index.html.
 7. Materu, Beatrice. "Covid-19: Tanzania's Cases Soar to 254." The East African, The East African, 21 Apr. 2020, www.theeastafrican.co.ke/news/ea/Covid19-Tanzania-cases-soar-to-254/4552908-5530080-15frdpy/index.html.
 8. "Tanzania." *KPMG*, KPMG, 13 Apr. 2020, home.kpmg/xx/en/home/insights/2020/04/tanzania-government-and-institution-measures-in-response-to-covid.html.
 9. National Health Commission of the People's Republic of China. A protocol for community prevention and control of the 2019 novel coronavirus (2019-nCoV) infected pneumonia (trial version) 2020. <http://www.nhc.gov.cn/jkj/s3577/202001/dd1e502534004a8d88b6a10f329a3369.shtml> (access Feb 16, 2020)
 10. Taber KS. The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*. 2018; 48:1273–96. [[Google Scholar](#)]
 11. Zhou X, Xiu C, Chu Q. Prevention and treatment knowledge and attitudes towards SARS of urban residents in Qingdao. *Prev Med Trib*. 2004; 10:407–8. [[Google Scholar](#)]
 12. Liu Z, Gao H, Zhang S. Prevention and treatment knowledge towards SARS of the urban population in Jinan. *Prev Med Trib*. 2004; 10:659–60. [[Google Scholar](#)]
 13. OpenEpi. Open Source Epidemiologic Statistics for Public Health. 2013. [[Google Scholar](#)]
 14. SurveyMonkey. Log in to Your Account, www.surveymonkey.com/user/sign-in/?ut_source=sem_lp&ut_source2=sem&ut_source3=megamenu.
 15. Yimer SA, Holm-Hansen C, Bjune GA. Assessment of knowledge and practice of private practitioners regarding tuberculosis control in Ethiopia. *J Infect Dev Ctries*. 2012; 6(1):13–19. doi: 10.3855/jidc.1927. [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]

16. Vandan N, Ali M, Prasad R, Kuroiwa C. Assessment of doctors' knowledge regarding tuberculosis management in Lucknow, India: a public-private sector comparison. *Public Health*. 2009; 123:484–489. Doi: 10.1016/j.puhe.2009.05.004. [PubMed] [CrossRef] [Google Scholar]
17. Chen S, Qiu Z, Xu L, Chen J, Lin Y, Yang Y. et al. People groups' responses to SARS in the community. *Chinese Rural Health Service Administration*. 2003; 23:15–8. [Google Scholar]
18. Pawlowski B, Atwal R, Dunbar R. Sex Differences in Everyday Risk-Taking Behavior in Humans *Evolutionary Psychology*. 2008; 6: 29-42.
19. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, Li WT, Li Y. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci*. 2020 Mar 15; 16(10):1745-1752. doi: 10.7150/ijbs.45221. PMID: 32226294; PMCID: PMC7098034.

APPENDIX 1; Questionnaire

English Version

Knowledge, attitudes, and practices towards COVID-19 among residents during the rapid rise period of the COVID-19 outbreak

Demographic characteristics

1. Age

2. Sex

3. Education level

Knowledge about Clinical characteristics of COVID-19

4. The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia.

- True
- False
- I don't know

5. Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus.

- True
- False
- I don't know

6. There is current and no effective cure for COVID-19 but early symptoms and supporting treatment can help most patients recover from the infections.

- True
- False
- I don't know

7. Not all persons with COVID-19 will develop severe cases. Only those who are elderly, have chronic illnesses and are obese are more likely to be severe cases

- True
- False
- I don't know

8. Eating or contacting wild animals would result in the infection by the COVID-19 virus.

- True
- False

I don't know

9. The person with COVID-19 cannot infect the virus to others when a fever is not present.

- True
- False
- I don't know

10. The COVID-19 virus spreads via respiratory droplets of infected individuals.

- True
- False
- I don't know

11. Ordinary residents can wear masks to prevent the infection by the COVID-19 virus.

- True
- False
- I don't know

12. Children and young adults do not need to take measures to prevent the infection by the COVID-19 virus.

- True
- False
- I don't know

13. To prevent infection by COVID-19, an individual should avoid going to crowded places.

- True
- False

I don't know

14. Isolation and treatment of people who are infected with the COVID-19 virus are an effective way to reduce the spread of the virus.

- True
 False
 I don't know

15. People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place.

- True
 False
 I don't know

Attitude and Practise

16. Do you agree COVID-19 will finally be successfully controlled?

- Agree
 Disagree
 I don't know

17. Do you have confidence that we can win the battle against the COVID-19 virus?

- Yes
 No

18. In recent days have you gone to any crowded places?

- Yes
 No

19. In recent days have you worn a mask when leaving home?

- Yes
 No

20. Do you practice prevention measures given by local health care authorities?

- Yes
 No

Questionnaire: KISWAHILI

Uelewa, mtazamo, na mienendo ya wahazi wa kuhusu kirusi cha COVID-19 katika kipindi hiki cha mlipuko

Taarifa za mshikiri

1. Umri

2. Jinsia

3. Elimu

Uelewa

4. Dalili kuu za mgonjwa mwenye COVID-19 ni joto kali, uchovu, kukohoa na maumivu ya misuli.

- Ndio
 Hapana
 Sijui

5. Tofauti na mafua ya kawaida mgonjwa wa kirusi cha COVID-19 hapati mafua ya kutiririka, pua kuziba wala kupiga chafya.

- Ndio
 Hapana
 Sijui

6. Hakuna dawa ya kutibu COVID-19 isipokua kugundua mapema hali ya maambukizi na kupata matibabu elekezi kunaweza kusaidia wagonjwa wengi kupona.

- Ndio

- Hapana
- Sijui

7. Sio watu wote walio na COVID-19 watakua na kesi kali. Ila wale ambao ni wazee, wana magonjwa sugu na wenye uzito kupita kiasi wana uwezekano mkubwa wa kuwa kesi kali

- Ndio
- Hapana
- Sijui

8. Kula au kugusa wanyama wa porini kunawezasababisha kuambukizwa na virusi vya COVID-19.

- Ndio
- Hapana
- Sijui

9. Mtu mwenye maambukizi ya kirusi cha COVID-19 hawezi kuambukiza wengine wakati hana homa.

- Ndiyo
- Hapana
- Sijui

10. Virusi vya COVID-19 huenea kupitia matone ya kupumua ya watu walioambukizwa

- Ndiyo
- Hapana
- Sijui

Mienendo

11. Wakazi wa kawaida wanaweza kuvaa masks kuzuia maambukizi ya kirusi cha COVID-19

- Ndiyo
- Hapana
- Sijui

12. Sio lazima kwa watoto na vijana kuchukua hatua za kuzuia kuambukizwa na kirusi cha COVID-19

- Ndiyo
- Hapana
- Sijui

13. Ili kuzuia kuambukizwa na COVID-19, ni vyema mtu aepuke kwenda kwenye sehemu zenye mikusanyiko.

- Ndio

- Hapana
- Sijui

14. Kujitenga na kupata matibabu elekezi ya watu ambao wameambukizwa na virusi vya COVID-19 ni njia bora ya kupunguza kuenea kwa virusi.

- Ndiyo
- Hapana
- Sijui

15. Watu ambao wamekutana na mtu aliyeambukizwa na virusi vya COVID-19 wanapaswa kujitenga mara moja kwa siku zisizopungua kumi na nne.

- Ndiyo
- Hapana
- Sijui

16. Je! Unakubali COVID-19 hatimaye itadhibitiwa kwa mafanikio?

- Nakubali
- Sikubali
- Sijui

17. Je! una imani kwamba Tunaweza kushinda vita dhidi ya virusi vya COVID-19.

- Ndiyo
- Hapana
- Sijui

Tabia

18. Je! Katika siku za hivi karibuni umeenda kwenye sehemu yoyote yenye mkusanyiko?

- Ndiyo
- Hapana
- Sijui

19. Katika siku za hivi karibuni umevaa mask wakati wa kuondoka nyumbani?

- Ndiyo
- Hapana
- Sijui

20. Je unafuata miongozo unayopewa na mamlaka za afya eneo unaloishi dhidi ya maambukizi ya COVID-19?

- Ndiyo
- Hapana

