Assessing Knowledge, Attitude and Practices (KAP) towards COVID19: A Cross-Sectional Study in Kenya

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Abstract

Covid-19 is a severe acute respiratory disease that has rapidly spread across the world originated China in December 2019. The main symptoms of a person infected with corona virus are fever, dry cough, shortness of breath, fatigue, dyspnea and myalgia. One of the main tool employed to control the pandemic is providing the community with correct information about the disease. High knowledge, right attitude towards Covid-19 and are adhering to suggested practices is the most effective approach to control community transmission.

Index terms—

1 I.

background he covid-19 (coronavirus disease) is a severe acute respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which originated from Wuhan city, China in December 2019 (Wu et al., 2020). Rapid transmission is mainly through close contact with an infected person (Zhou et al., 2020). However, details about the disease are continuously evolving and, as such, infections may be occurring through other routes. The main symptoms of a person infected with corona virus are fever, dry cough, shortness of breath, fatigue, dyspnea and myalgia. (Bajema et al., 2020;Huang et al., 2020;Zhou et al., 2020) Since the outbreak in China, the disease has spread widely and speedily to other parts of the world. It has spread to over 200 countries and was declared a global pandemic by World Health Organization (WHO) on **??**arch 11, 2020 (Cucinotta & Vanelli, 2020). By the end of July 2020, there were more than 17 million positive cases recorded, with at least 670, 000 deaths globally.

In Kenya, the Ministry of Health (MoH) confirmed the first corona virus case on March 12, 2020. In the same month, President Uhuru Kenyatta directed the implementation of preventative measures to reduce human-to-human transmission. These measures included restriction of international travels from and to countries with corona virus cases, closure of learning institutions, working from home except for essential services personnel, insistence on cashless transactions, and prohibition of congressional meetings, among others.

In the beginning of May 2020, WHO detected high and large-scale community transmission in many African countries. WHO advised respective governments to institute measures to curb human-to human transmissions. Due to community transmission, global and local experts projected over 2 million deaths from the pandemic in Sub-Saharan countries in the worstcase scenario of unmitigated spread of the virus (Austrian et al., 2020). This necessitated the Kenyan government to institute movement restrictions -cessation of movement-in areas which the MoH considered to be infection hotspots (Nairobi, Mombasa and Kilifi). In addition, nationwide curfew from 7.00 p.m to 5.00 a.m countrywide was declared to limit human movements and interactions.

Despite the containment measures put in place, the number of Covid-19 cases and deaths have steadily increased with over 19, 000 positive cases and 300 deaths by the end of July 2020. Earlier, on July 6, President Uhuru Kenyatta lifted the cessation of movement in the said Covid-19 hotspots. As a result, the Ministry of Health initiated a campaign to promote personal and public health behavior, such as regular hand washing and observing social distance in crowded places. Despite many achievements from this approach, the challenge of misinformation, mainly in form of promotion of unscrupulous Covid-19 treatments and ineffective preventative methods on social media (Facebook, WhatsApp, Instagram, Twitter among others), have presented a serious hurdle to the fight against the spread of the virus **??**Limaye et Therefore, evaluating the knowledge, attitude and practices about the disease among Kenyans would be a better basis for providing insights to improve awareness and help in the development of preventative strategies and programs. The lessons from SARS outbreak is that

47 knowledge and attitude towards an outbreak determines the level of panic and emotion, which can consequently
48 affect and complicate containment strategies (Limaye et al., 2020;Person et al., 2004;. This study will provide a
49 community's status with regard to Covid-19 knowledge, attitude and practices among Kenyans. In addition, the
50 findings of this study will help the government to develop strategies to improve public and personal hygiene in
51 the community.

2 II.

3 Methods a) Study Design

54 A quantitative approach was employed to achieve the objective of the study. A survey was used as a means of
55 collecting data due to its many advantages including high accessibility to a large population (van Griethuijsen
56 et al., 2015). A cross-sectional study using data collected through an online self-reported questionnaire seemed
57 appropriate to collect data in the current context of restricted movements. To assess the level and association with
58 social factors of Covid-19 knowledge, attitude and practices among Kenyans, descriptive statistics (percentages
59 and means) and multivariate regression were employed.

4 b) Data collection

61 The cross-sectional survey was undertaken between July 26-31, 2020. Since it is not feasible to undertake
62 nationwide sampling during this period, the research opted to use an online survey using Google Form, where
63 only persons above the age of 18 years were eligible to participate. The numerous shortcomings encountered with
64 internet-mediated survey were high non-response rate and inaccessibility by a section of the targeted population
65 (Mirabeau et al., 2013). (Dusek et al., 2015;Mirabeau et al., 2013) propose different strategies to downplay the
66 weakness of online survey, which include direct contact, referrals, and affiliation. In light of these challenges,
67 researchers employed many approaches to reach many respondents across the country within the one-week data
68 collection period. For this study, community leaders, social media influencers and mobilizers were involved in
69 broadcasting and sharing of the survey on their social media platforms (Facebook and WhatsApp). Facebook
70 and WhatsApp were mainly used to share the survey since they are the most popular social media platforms in
71 Kenya (Irungu et al., 2015). Clicking the link to the survey was deemed as a consent to participate. From the
72 process, 353 respondents clicked the link and submitted the survey. The data was then analyzed to address the
73 objectives of the study.

5 c) Knowledge, attitude and practices Indicators

75 The survey tool consisted two parts: demographic characteristics and KAP related questions. The general
76 characteristic of the respondents included gender, age group, education level, marital status, occupation and
77 place of residence (either urban or rural).

78 The questionnaire used in this study was adopted from the tool that was previously tested and used in China
79 (Zhong et al., 2020). However, the tool was reviewed to align to Kenyan context. There were 10 questions to
80 test respondent's knowledge on Covid-19: K1-K9. The knowledge score was then divided by 9, as it ranges
81 between 0 and 1. The aims of the study were to understand Covid-19 attitude among Kenyans, their confidence
82 on instituted measures to control the spread of the virus, and whether they believe the disease will eventually
83 be controlled (K10 ??11). With regard to practices, it was essential to understand whether one had visited
84 crowded places and whether they were observing the preventive measures (K12-13). (See d) Limitation of the
85 study Sampling was done through convenience sampling through a network of researchers who were encouraged
86 to share the survey on social media platforms (Facebook and WhatsApp). Therefore, there may be a bias since
87 those who are not on such social media platforms were not able to participate in the study. In addition, with
88 regard to age distribution in Kenya, the sample of the study had an overrepresentation of persons below the age
89 of 35 years. The under-representation of a section of the target population may have derailed the generalization
90 of the findings (Mortel, 2008;Sandelowski, 1995). As such, a more systematic and inclusive sampling approach
91 should be employed to improve the level of representation and generalizability of Covid-19 knowledge, attitude
92 and practices in Kenya.

93 Another limitation of this study was the likelihood that respondents were likely to give desirable response.
94 Since it is a self-reported survey, respondent were likely to give answers about attitude and practices based on
95 what they perceived was expected of them (Mortel, 2008;Nazer et al., 2017).

6 III.

7 Results and Discussion

98 A total of 353 participants completed the survey. Majority of the respondents were below 35 years of age (91.5%),
99 232 (65.7%) were males, 293 (83.0%) had a bachelor degree and above, 64 (18.1%) respondents indicated to
100 be unemployed, and 217 (61.5%) said they live in urban settings (See Table 2 below). The level of trust of
101 information from available sources were varying. Among the popular sources of information, daily briefing by the
102 Ministry of Health was the most trusted source of Covid-19 information with 90% highly or somewhat trusting

the information given on this forum. For those who get updates about the pandemic from mainstream media 87% highly or somewhat trust the conveyed information. However, despite 55% of the respondents sourcing their information from social media platforms, only half of those (50%) highly trust the information (See Figure 2 above). Knowledge and perception of Covid-19.

Overall, the average knowledge score of Covid-19 symptoms and practices is 0.8397 [0.8239,0.8554],

indicating high knowledge about Covid-19 pandemic. However, the average knowledge level changes with sociodemographic characteristics of the respondents.

Distribution, by proportion, of respondents for each knowledge indicator is shown in Table 4 below. Overall, 93% of the respondent indicated that they know the main symptoms of Covid-19, while 4% were not sure. With regard to whether the measures instituted by the Kenyan government will eventually control the spread of the virus 55% are optimistic it will be controlled, 27.2% are not sure while the rest (17. 8 %) do not believe the disease will be controlled (See Figure 3 above). Of the all the respondents, half of the respondents (50%) indicated to have visited a crowded place in the recent past. In crowded places, 91 % indicated to have worn masks, 67 % maintained the proposed social distance and 83 % applied sanitizers regularly. However, 60 % of the respondents indicated that other persons were not observing the measures. Evidently, the failure of the majority of Kenyans to adhere to the recommended Covid-19 preventive measures may explain the high community-tocommunity transmission experienced in Kenya.

8 Conclusion

It is not in doubt that that knowledge, attitude and practices among Kenyans is the main determinant of how the pandemic will affect the community. This study sought to assess the knowledge, attitudes and practices of Kenyans towards Covid-19. To achieve the objectives of the study an online cross-sectional survey was applied. In Kenya, where the population is predominantly youthful and educated, the level of knowledge about the Covid-19 symptoms and preventive measures was evidently high. From the study, it is evident that most respondents are knowledgeable about Covid-19 (83.97 %). Daily briefing by the Ministry of Health (MoH) and mainstream media were posited as the main sources of information about the pandemic in Kenya. About observing the proposed measures in crowded places, despite majority indicating they observed the measures, there was a significant proportion (60%) of respondents reporting that other persons were not observing the same. Only half of the respondents believed that the pandemic will eventually be control through the measures instituted by the Kenyan government. Sociodemographic characteristics, including gender, the level of education and occupation, were shown to influence the level of Covid-19 knowledge.
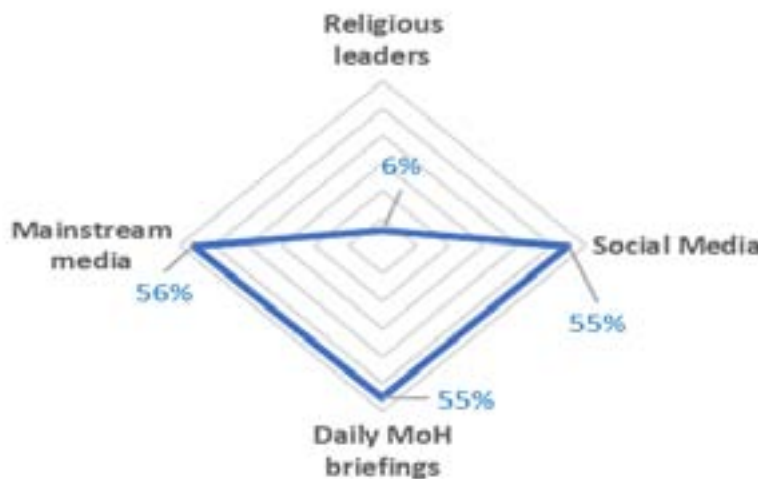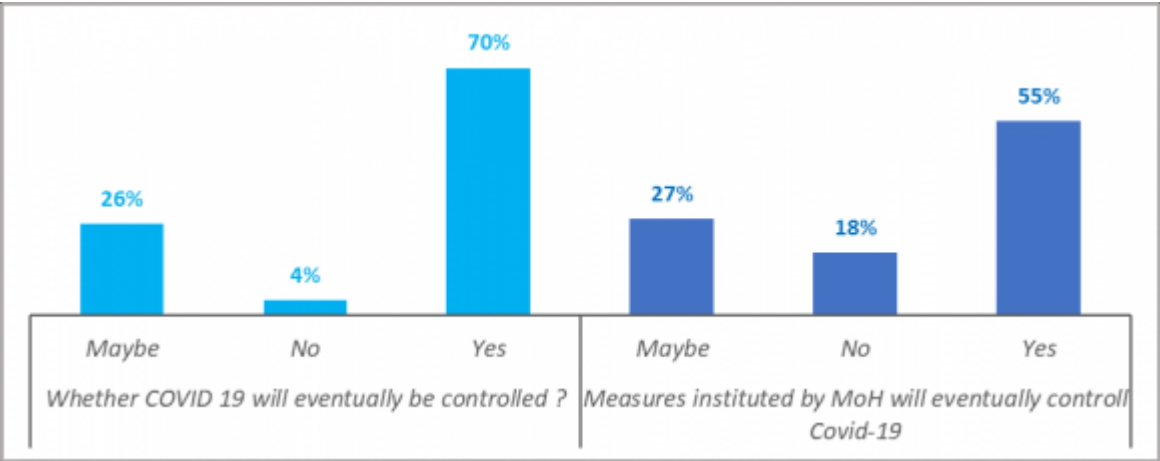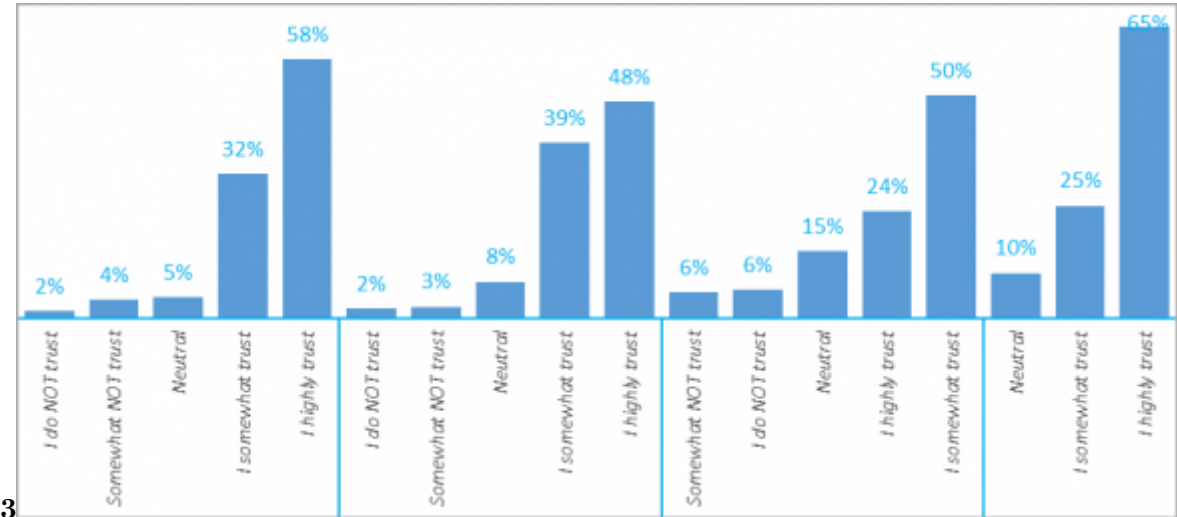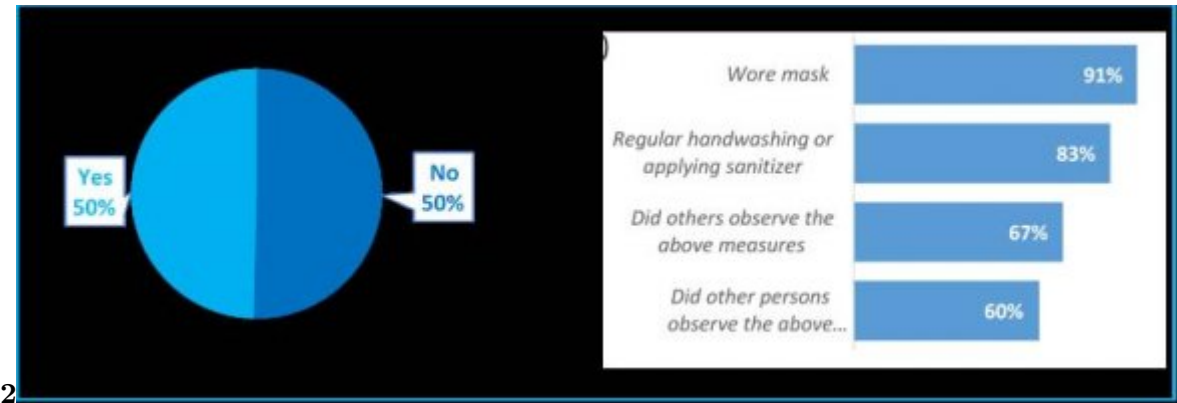

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Figure 1: Figure 1 :

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Figure 2:

Figure 3: Figure 3 :

Figure 4: Figure 2 :

		Knowledge, attitude and practices Indicators	Option	(No), (Yes),
	K1	Question Wearing mask when in		(I don't know) (No),
	K2	public Regular handwashing		(Yes), (I don't know)
	K3	Maintaining social distance in public spaces		(No), (Yes), (I don't know)
	K4	Staying indoors and avoiding crowding places		(No), (Yes), (I don't know)
	K5	Not a MUST for children to take measures to prevent contacting Covid -		(No), (Yes), (I don't know)

[Note: K6Isolation of infected persons is effective way of reducing the spread of the dis (No), (Yes), (I don't know)K7All COVID-19 positive person(s) show symptoms (No), (Yes), (I don't know) K8 There is currently not cure but early symptomatic and supportive (No), (Yes), (I don't know)]

Figure 5: Table 1 below

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19?

Figure 6: Table 1 :

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General characteristics Female Gender of the respondent Male	N=353	121	Knowledge score of C
	(34.3%)	232	against demographic char
	(65.7%)		tics 0.8397 [0.8091,0.8702]
			[0.8216,0.8577]

| Education Level Marital Status Age group | <35 years Primary/Secondary School University Married Not married 35> years | | 323 60 293 93 260 (73.7%) 30 (8.5%) | (91.5%) (17.0%) (83.0%) (26.3%) | 0.8381 0.7683 0.8543 0.857 | [0.8220 [0.7166 [0.8389 [0.8205,0.8935] [0.8164,0.8505] [0.7862,0.9272] |
| Respondents' Occupation Place of residence (Rural or Urban) | Employed Self-Employed Student Unemployed Rural Urban | | 102 37 150 (42.5%) 64 (18.1%) 136 (38.5%) 217 (61.5%) | (28.9%) (10.5%) | 0.8716 0.8541 0.8227 0.8203 0.8279 | [0.8424 [0.8085 [0.8013 [0.7730 [0.7996,0.8563] [0.8284,0.8656] |

[Note: F© 2020 Global Journals]

Figure 7: Table 2 :

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Multiple linear regression model (Table 4 below) showed that female gender (vs male, coef. =00601, P=0,014), age group 34+ years (vs <35 years, coef. =0.3998, primary/secondary (vs). University, coef.=0.2685,P=0.000) and employed occupation status (vs not employed, coef. = 0 .2044, P=0.000) were significantly associated with the level of P=0l000)f, educationknowledge score.

Figure 8: Table 3 :

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Covid-19

Figure 9: Table 4 :

133 [Bajema et al. ()] , K L Bajema , A M Oster , O L Mcgovern , S Lindstrom , M R Stenger , T C Anderson , C
134   Isenhour , K R Clarke , M E Evans , V T Chu , H M Biggs , H L Kirking , S I Gerber , A J Hall , A M Fry
135   , S E Oliver , G Abedi , W Bower , K Chatham-Stephens , A Yousaf . 2020.

136 [Pennycook et al. ()] , G Pennycook , J Mcphetres , Y Zhang , J G Lu , D G Rand . COVID-19. 2020.

137 [Wu et al. ()] 'A new coronavirus associated with human respiratory disease in China'. F Wu , S Zhao , B Yu
138   , Y M Chen , W Wang , Z G Song , Y Hu , Z W Tao , J H Tian , Y Y Pei , M L Yuan , Y L Zhang ,
139   F H Dai , Y Liu , Q M Wang , J J Zheng , L Xu , E C Holmes , Y Z Zhang . 10.1038/s41586-020-2008-3.
140   `https://doi.org/10.1038/s41586-020-2008-3` *Nature* 2020.

141 [Zhou et al. ()] 'A pneumonia outbreak associated with a new coronavirus of probable bat origin'. P Zhou , X
142   Yang , Lou , X G Wang , B Hu , L Zhang , W Zhang , H R Si , Y Zhu , B Li , C L Huang , H D Chen , J
143   Chen , Y Luo , H Guo , R Jiang , Di , M Q Liu , Y Chen , X R Shen , X Wang , Shi . 10.7150/ijbs.45221.
144   `https://doi.org/10.1038/s41586-020-2012-7` *Z. L* 2020.

145 [Limaye et al. ()] 'Building trust while influencing online COVID-19 content in the social media world'. R J
146   Limaye , M Sauer , J Ali , J Bernstein , B Wahl , A Barnhill , A Labrique . 10.1016/S2589-7500(20)30084-.
147   `https://doi.org/10.1016/S2589-7500(20)30084-` *The Lancet Digital Health*, 2020.

148 [Austrian et al. ()] 'COVID-19 Related Knowledge, Attitudes, Practices and Needs of Households in Informal
149   Settlements'. K Austrian , J Pinchoff , J B Tidwell , C White , T Abuya , B Kangwana , R Ochako
150   , J Wanyungu , E Muluve , F Mbushi , D Mwanga , M Nzioki , T D Ngo . 10.2139/ssrn.3576785.
151   `https://doi.org/10.2139/ssrn.3576785` *SSRN Electronic Journal* 2020.

152 [Mortel and Van De ()] 'Faking it: social desirability response bias in self-report research'. T Mortel , Van De .
153   *Australian Journal of Advanced Nursing* 2008.

154 [Person et al. ()] 'Fear and Stigma: The Epidemic within the SARS Outbreak'. B Person , F Sy , K Holton , B
155   Govert , A Liang , B Garza , D Gould , M Hickson , M Mcdonald , C Mejer , J Smith , L Veto , W Williams , L
156   Zauderer . 10.3201/eid1002.030750. `https://doi.org/10.3201/eid1002.030750` *Emerging Infectious
157   Diseases*, 2004.

158 [Van Griethuijsen et al. ()] 'Global patterns in students' views of science and interest in science'. R A L F Van
159   Griethuijsen , M W Van Eijck , H Haste , P J Den Brok , N C Skinner , N Mansour , A S Gencer ,
160   S Boujaoude . 10.1002/nur.4770180211. `https://doi.org/10.1007/s11165-014-9438-6` *Research in
161   Science Education* 2015.

162 [Huang et al. ()] C Huang , Y Wang , X Li , L Ren , J Zhao , Y Hu , L Zhang , G Fan , J Xu , X Gu ,
163   Z Cheng , T Yu , J Xia , Y Wei , W Wu , X Xie , W Yin , H Li , M Liu , B Cao . 10.1016/S0140-
164   6736(20. `https://doi.org/10.1016/S0140-6736(20` *Clinical features of patients infected with 2019
165   novel coronavirus in Wuhan, China. The Lancet*, 2020. p. .

166 [Irungu et al. ()] 'Information and Communication Technologies (ICTs) Attract Youth into Profitable Agricul-
167   ture in Kenya'. K R G Irungu , D Mbugua , J Muia . 10.1080/00128325.%202015.1. `https://doi.org/`
168   `10.1080/00128325.2015.1040645` *East African Agricultural and Forestry Journal* 2015.

169 [Nazer et al. ()] 'Intelligent Disaster Response via Social Media Analysis A Survey'. T H Nazer , G Xue , Y
170   Ji , H Liu . 10.1145/3137597.3137602. `https://doi.org/10.1145/3137597.3137602` *ACM SIGKDD
171   Explorations Newsletter* 2017.

172 [Zhong et al. ()] 'Knowledge, attitudes, and practices towards COVID-19 among chinese residents during the
173   rapid rise period of the COVID-19 outbreak: A quick online cross-sectional survey'. B L Zhong , W Luo , H
174   M Li , Q Q Zhang , X G Liu , W T Li , Y Li . 10.1038/s41586-020-2008-3. `https://doi.org/10.7150/`
175   `ijbs.45221` *International Journal of Biological Sciences* 2020.

176 [Mental Health and Psychosocial Considerations during COVID-19 Outbreak World Health Organization ()]
177   'Mental Health and Psychosocial Considerations during COVID-19 Outbreak'. *World Health Organization*
178   2020. World Health Organization.

179 [Misinformation on Social Media: Experimental Evidence for a Scalable Accuracy-Nudge Intervention Psychological Science]
180   'Misinformation on Social Media: Experimental Evidence for a Scalable Accuracy-Nudge Intervention'.
181   10.1177/0956797620939054. `https://doi.org/10.1177/0956797620939054` *Psychological Science*

182 [Persons Evaluated for 2019 Novel Coronavirus -United States (2020)] 10.15585/mmwr.mm6906e1. `https://`
183   `doi.org/10.15585/mmwr.mm6906e1` *Persons Evaluated for 2019 Novel Coronavirus -United States*,
184   January 2020.

185 [References Références Referencias Related Information Sources and the Relationship With Confidence in People Coping with CC
186   'References Références Referencias Related Information Sources and the Relationship With
187   Confidence in People Coping with COVID-19: Facebook Survey Study in Taiwan'. 10.2196/20021.
188   `https://doi.org/10.2196/20021` *Journal of Medical Internet Research*

189 [Sandelowski ()] 'Sample size in qualitative research'. M Sandelowski . 10.3201/eid1002.030750. `https://doi.`
190   `org/10.1002/nur.4770180211` *Research in Nursing & Health* 1995.

[Mirabeau et al. ()] 'The utility of using social media networks for data collection in survey research'. L Mirabeau , M Mignerat , C Grangé . *International Conference on Information Systems (ICIS 2013): Reshaping Society through Information Systems Design*, 2013. 5 p. .

[Dusek et al. ()] 'Using social media and targeted snowball sampling to survey a hard-to-reach population: A case study'. G A Dusek , Y V Yurova , C P Ruppel . 10.28945/2296. https://doi.org/10.28945/2296 *International Journal of Doctoral Studies* 2015.

[Cucinotta and Vanelli ()] 'WHO declares COVID-19 a pandemic'. D Cucinotta , M Vanelli . 10.23750/abm.v91i1.9397. https://doi.org/10.23750/abm.v91i1.9397 *Acta Biomedica*, 2020.