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***Knowledge, Attitude, and Practice towards
COVID-19 among the Faculty of Health Sciences
Students at Mogadishu University, Somalia***

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Abstract

This article is a study analysis on the Juba and Shabbelle Basins, in

Until June 23, 2020, 2,416 cases are registered and 85 deaths, in Somalia, with the majority of these deaths falling between the ages of 60 to 70. The country's authorities have applied necessary measures to prevent massive spread. This study aims to assess Knowledge, attitude, and practice (KAP) towards COVID-19 among Faculty of Health Sciences Students at Mogadishu University.

A descriptive cross-sectional study was carried out in April 11, 2020, two weeks immediately after the closure of Schools & Universities in Mogadishu, Somalia to June 28, 2020. The survey was online using a

KoBo Toolbox form distributed through "WhatsApp" groups. Health Sciences Students at Mogadishu University, who were explained the objectives and purpose of the study, who agreed to participate in the study, were asked to complete the questionnaire by clicking on the link.

A total of 258 participants completed the survey questionnaire. 60.5% of them were 21–23 years old, 70.5% were females; and 31.8% were in academic year four. Most of the respondents reported that COVID-19 is a virus infection (93.8%), COVID-19 is transmitted by close contact with the infected person (80.2%), and the main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia (84.1%). The majority of the respondents agreed that if getting COVID-19, they will accept isolation in health facilities (61.2%), wearing a well-fitting face mask is effective in preventing COVID-19 (83.7%), and COVID-19 will finally be successfully controlled (61.6%). The vast majority of the participants have worn a mask when in contact with people or leaving home (55.8%), frequently washed hands with soap or sanitizer (72.5%), had not visited any crowded place (40.3%), and sneezed between elbows (54.7%).

The knowledge about COVID-19 in the Faculty of Health Sciences Students of Mogadishu University during the outbreak was acceptable, attitudes have been mostly favorable and the practices are mostly adequate, however, it is necessary to implement massive education campaigns, to increase the proportion of knowledge about COVID-19, to stop its spread.

Keywords: Knowledge, Attitude, Practice, COVID-19, Health Sciences, Mogadishu

Background

Coronaviruses are a large group of viruses that are rather common throughout the community. Historically, evidence has shown that the virus is transmitted through birds and mammals, with humans being particularly vulnerable to infection and transmission of the virus (Huynh, Nguyen, Tran, Vo, Vo, & Pham, 2020). 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 (Hussain, Garima, Singh, Ram & Tripti, 2020). Implementing personal hygiene and public health behaviors such as handwashing and social distancing are necessary to curb the spread of coronavirus, but it will be challenging to practice these in many cities and rural areas in developing settings (Dahab, van Zandvoort, Flasche, Warsame, Spiegel, Waldman, & Checchi, 2020). Without sustained bans on large gatherings (including specific cultural and faith practices such as mass prayer gatherings, large weddings and funerals) these may create super-spreading events that accelerate transmission (Wong, Liu, Liu, Zhou, Bi, & Gao, 2015). This situation may be compounded by the spread of COVID-19 misinformation including unsupported treatments or promotion of ineffective preventive behaviors (Vigdor, 2020).

Globally, till 8th April 2020, total cases of infection reach 1,536,652 and the death toll is 89,907 and the trend is going up, however, so far

340,349 persons were recovered from COVID-19. The lungs are the most affected organs in this disease as the virus enters via the enzyme called angiotensin-converting enzyme 2 (ACE2) which is most profuse in the type II alveolar cells of the lungs Bhuiyan, M., Ananna, Chowdhury, Ahmed, & Rahman, 2020). Consequently, on March 11, 2020, the World Health Organization (WHO) declared that COVID-19 is a pandemic disease (Weiss & Murdoch, 2020).

Furthermore, the disease significantly affects everyday life, resulting in a socio-economic crisis (Qualls, Levitt, & Neha, 2017). According to the WHO report, to date, more than 5.5 million cases, and 353,334 confirmed deaths were recorded in the world (WHO, n.d.). Even though the number of cases and deaths in Africa seems low, it may increase alarmingly than that of reports in Europe and America unless appropriate intervention is implemented.

Somalia is among African countries that have been hit by the COVID-19 epidemic. Until June 23, the country has had 2,416 cases of COVID-19 and 85 deaths, with the majority of these deaths falling between the ages of 60 to 70. Many of these patients are not recovering because of a lack of oxygen in the country's health facilities. WHO Somalia purchased three oxygen machines to fill the gap (WHO, n.d.). Several measures have been adopted to control the COVID-19 transmission in Somalia, including closing all schools and universities, observing physical distancing, the prohibition of mass gathering, isolation, and care for infected people and suspected cases. To facilitate the outbreak management of COVID-19 in Somalia, there is an urgent need to understand the public's awareness of COVID-19 at this critical moment. In this study, I investigated the KAP towards COVID-19 of

Faculty Health Sciences Students at Mogadishu University during the rapid rise period of the COVID-19 outbreak.

Methods & Materials

Study Design & Study Participants.

This study was designed to obtain information regarding the knowledge, the attitude, and the practice towards COVID-19 among Health Sciences Students at Mogadishu University. A descriptive cross-sectional were used to obtain the data from 11 April 2020, two weeks immediately after the lockdown of Universities & Schools in Mogadishu, Somalia to 28 June 2020.

Data Collection.

As we all know, social-distancing is the best way of prevention from COVID-19, therefore, instead of conducting a community-based survey, this study collected the data using the KoBo Toolbox form as an online survey. The link form was posted and circulated using Whatsapp Group by sending the list of study participants to the secretary of the faculty as well as the class monitors. The study used a quantitative method to achieve the study objectives.

A self-designed questionnaire was prepared, which comprised two parts: the first part of the questionnaire covered demographic information of the study participants and the second part contained questions for KAP assessment. The questions were established based on some published literature and the author's experience of KAP. After the preparation of the questionnaire, it was sent to some experts to consult their opinions regarding the validity of the questionnaire followed by a small pilot study

to test its simplicity and difficulty. However, the results of the pilot study were not included in the actual samples used for the study.

Sample Size & Sampling Procedure.

Yamane (1967) formula was used to determine the sample size; $n = N \div 1 + N (e^2)$; $723 \div 1 + 723 (0.05)^2 = 258$. Therefore, a total of two-hundred and fifty-eight subjects was selected to give their responses. A simple random- type of probability sampling was used in this study.

Data Analysis.

The collected data was analyzed using SPSS 16 computer software package appropriately; the percentage was used as a statistical test. Data cleaning was performed to check for accuracy, consistencies, missed values, and variables. Any error was identified and corrected. The t-test was examined to determine the variance of participants' responses according to their age, gender, and academic years.

Ethical Considerations.

The study participants were informed about the details of the study objectives for filling the questionnaire and confidentiality at the beginning of the survey, and informed consent was obtained from each participant. It has been disclosed to all the participants that their identity will keep confidential and the results will be used only for research purposes

Results

Demographic Information of the Study Participants.

Frequency and percentage of all the demographic characteristics like age, gender & academic year are represented in Table 1. Out of the 258 participants, 60.5% were 21–23 years old, 70.5% were females; and 31.8% were in academic year four.

Table 1: Demographic Information of the Study Participants.

Variable	Frequency	Percent
Age group (years)		
18 – 20	95	36.8
21 – 23	156	60.5
24+	7	2.7
Gender		
Male	76	29.5
Female	182	70.5
Academic Year		
1 st year	44	17.1
2 nd year	67	25.9
3 rd year	65	25.2
4 th year	82	31.8

Knowledge of COVID-19 among Health Sciences Students.

The respondents were asked eight (8) questions to identify the knowledge of COVID-19 among health sciences students (Table 2a & 2b). Most of the respondents reported that COVID-19 is a virus infection (93.8%), COVID-19 is transmitted by close contact with the infected person (80.2%), and the main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia (84.1%).

Table 2a: Knowledge of COVID-19 among Health Sciences Students.

Item	Variable	International health organization e.g., WHO	Government sites and media e.g., MoH-Somalia	Social media e.g., WhatsApp, Facebook	News media e.g., TV, radio, newspaper	Friends, relatives
K1	Source of information on COVID-19	123 (47.7%)	49 (19.0%)	64 (24.8%)	16 (6.2%)	6 (2.3%)

Table 2b: Knowledge of COVID-19 among Health Sciences Students.

Item	Variable	Yes	No	I don't know
K2	COVID-19 is a virus infection	242 (93.8%)	7 (2.7%)	9 (3.5%)
K3	COVID-19 is transmitted by close contact with the infected person	207(80.2%)	259.7	2610.1
K4	The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia	217(84.1%)	27 (10.5%)	14 (5.4%)
K5	The person with COVID-19 cannot infect the virus to others when a fever is not present	95 (36.8%)	110 (42.6%)	53 (20.5%)
K6	The isolation period of COVID-19 is 2 weeks	210 (81.4%)	26 (10.1%)	22 (8.5%)
K7	COVID-19 vaccine is available in markets	61 (23.6%)	166 (64.3%)	31 (12.0%)
K8	There is currently no effective cure for COVID-19, but early symptomatic and supportive treatment can help most patients recover from the infection	191 (74.0%)	31 (12.0%)	36 (14.0%)

Attitude of COVID-19 among Health Sciences Students.

The respondents were asked eight questions to identify the attitude of COVID-19 among health sciences students (Table 3). The majority of the respondents agreed that if getting COVID-19, they will accept isolation in health facilities (61.2%), wearing a well-fitting face mask is effective in preventing COVID-19 (83.7%), and COVID-19 will finally be successfully controlled (61.6%).

Table 3: Attitude of COVID-19 among Health Sciences Students.

Item	Variable	Agree	Neutral	Don't agree
A1	Black race is protective toward COVID-19 disease	82 (31.8%)	0 (0.0%)	176 (68.2%)
A2	You think you will probably get COVID-19 illness	120 (46.5%)	0 (0.0%)	138 (53.5%)
A3	If getting COVID-19, you will accept isolation in health facilities	158 (61.2%)	0 (0.0%)	100 (38.8%)
A4	You are worried one of your family members may get a COVID-19 infection	132 (51.2%)	0 (0.0%)	126 (48.8%)
A5	Wearing a well-fitting face mask is effective in preventing COVID-19	216 (83.7%)	0 (0.0%)	42 (16.3%)
A6	Using a hand wash can prevent you from getting COVID-19	221 (85.7%)	0 (0.0%)	37 (14.3%)
A7	Somalia is in a good position to contain COVID-19	101 (39.1%)	0 (0.0%)	157 (60.9%)
A8	COVID-19 will finally be successfully controlled	159 (61.6%)	0 (0.0%)	99 (38.4%)

Practice of COVID-19 among Health Sciences Students.

The respondents were asked eight questions to identify the practice of COVID-19 among health sciences students (Table 4). The vast majority of the participants have worn a mask when in contact with people or leaving home (55.8%), frequently washed hands with soap or sanitizer (72.5%), had not visited any crowded place (40.3%), and sneezed between elbows (54.7%).

Table 4: Practice of COVID-19 among Health Sciences Students.

Item	Variable	Always	Occasional	Never
P1	Recently have gone to any crowded place	54 (20.9%)	100 (38.8%)	104 (40.3%)
P2	Recently have worn a mask when in contact with people or leaving home	144 (55.8%)	65 (25.2%)	49 (19.0%)
P3	Recently have refrained from shaking hands	104 (40.3%)	111 (43.0%)	43 (16.7%)
P4	Recently have maintained social distances	132 (51.2%)	94 (36.4%)	32 (12.4%)
P5	Frequently washed hands with soap or sanitizer	187 (72.5%)	69 (26.7%)	2 (0.8%)
P6	Frequently touched mouth or eyes or nose	87 (33.7%)	87 (33.7%)	84 (32.6%)
P7	Sneezed between elbows	141 (54.7%)	78 (30.2%)	39 (15.1%)
P8	Usually share food or water pot with others	100 (38.8%)	62 (24.0%)	96 (37.2%)

Table 5: t-test Analysis of Students Responses Variance Based on Their Age, Gender and Academic Year towards KAP.

Item	Variable	Age group (years)		Gender		Academic Year	
		T	Sig.	T	Sig.	T	Sig.
Knowledge Scores							
K1	Source of information on COVID-19	-3.189	.002	2.328	.021	.434	.665
K2	COVID-19 is a virus infection	-1.311	.191	-.199	.843	-1.367	.173
K3	COVID-19 is transmitted by close contact with the infected person	-.458	.647	.476	.635	-2.360	.019
K4	The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia	-1.075	.284	-1.867	.063	-.839	.402
K5	The person with COVID-19 cannot infect the virus to others when a fever is not present	1.199	.232	.827	.409	-.728	.467
K6	The isolation period of COVID-19 is 2 weeks	-1.708	.089	.888	.376	-1.304	.194
K7	COVID-19 vaccine is available in markets	.597	.551	1.223	.222	-.237	.813
K8	There is currently no effective cure for COVID-19, but early symptomatic and supportive treatment can help most patients recover from the infection	-3.819	.000	1.060	.290	-1.278	.202
Attitude Scores							
A1	Black race is protective toward COVID-19 disease	-.521	.603	.244	.807	1.594	.112
A2	You think you will probably get COVID-19 illness	.968	.334	.371	.711	.511	.610
A3	If getting COVID-19, you will accept isolation in health facilities	.769	.443	-2.012	.045	.829	.408

Item	Variable	Age group (years)		Gender		Academic Year	
		T	Sig.	T	Sig.	T	Sig.
A4	You are worried one of your family members may get a COVID-19 infection	1.500	.135	-.781	.435	.745	.457
A5	Wearing a well-fitting face mask is effective in preventing COVID-19	3.869	.000	-1.441	.151	2.132	.034
A6	Using a hand wash can prevent you from getting COVID-19	-2.966	.003	-.297	.766	-1.041	.299
A7	Somalia is in a good position to contain COVID-19	2.317	.021	.024	.981	-.590	.556
A8	COVID-19 will finally be successfully controlled	-.232	.817	1.256	.211	2.634	.009
Practice Scores							
P1	Recently have gone to any crowded place	-.701	.484	2.58	.001	.771	.441
P2	Recently have worn a mask when in contact with people or leaving home	2.204	.028	-.669	.504	.251	.802
P3	Recently have refrained from shaking hands	-2.300	.022	3.452	.001	-2.269	.024
P4	Recently have maintained social distances	1.901	.059	-.060	.952	2.499	.013
P5	Frequently washed hands with soap or sanitizer	-.862	.390	-1.422	.156	.307	.759
P6	Frequently touched mouth or eyes or nose	-1.440	.151	-.770	.442	1.276	.203
P7	Sneezed between elbows	.067	.946	1.188	.236	.052	.959
P8	Usually share food or water pot with others	.051	.959	-.804	.422	-2.283	.023

Discussion of Findings

Table 5 describes the scores of knowledge, attitude, and practices towards COVID-19 concerning demographic variables such as age,

gender, and academic year. COVID-19 related knowledge was assessed by 8 items. Each question and its options were described in Table 2a & 2b. To further analyze, the age-category of 21–23 was higher for K1 and K8 than the other categories; the females had significantly higher score for K1 than the males; academic year four students had significantly higher score for K3 than other academic years. Other items were found with no statistically significant difference between groups (Table 5)

Items about COVID-19 attitude including 8 single choice questions. Each question and its options were described in Table 3. The age-category of 21–23 was higher for A5, A6 and A7 than the other categories. The females had scored significantly higher for A3 than the males. Higher grade students scored significantly higher for A5 and A8 than freshmen (Table 5). Practice related to COVID-19 was assessed by 8 single-choice questions. Each question and its options were described in Table 4. The age-category of 21–23 was higher for P2 and P3 than the other categories. The females had significantly higher score for P1 and P3 than the males. Students in academic years four had significantly higher score for P3, P4 and P8 than other academic years (Table 5).

It is worth mentioning that sufficient COVID-19 knowledge scores, positive attitude, and adequate practice were found among the students. Demographic factors, especially the association between gender and KAP towards COVID-19 are generally consistent with previous studies on COVID-19 and SARS in 2003 (Zhong, Luo, Li, Zhang, Liu & Li, 2020). The results are in agreement with the study conducted by (Peng, Pei, Zheng, Wang, Zhang, Zheng & Zhu., 2020) who cited that the knowledge scores of the female were slightly higher than that of males, as well as higher scores of females were observed in the attitude and practice as compared with that of males. In addition, the difference in practice scores was significant between different genders. The KAP score for the age-category of 21-23 was higher than the other categories, with

no significant difference among groups. The major limitation of the present study is that the sample sizes are limited to the students of Health Sciences Faculty at Mogadishu University, and hence the results based on the used sample sizes could not be generalized to all the populations of Mogadishu and Somalia as well, although it can certainly help the state and the country to enhance the awareness regarding KAP in the general population. Due to the questionnaire being self-answered by the participants, there is also a high chance of errors or misrepresentation of information. Less demographic variables is also a limitation.

Conclusion & Recommendations

Most Faculty of Health Sciences Students were informed of basic information, possessed positive attitude and proactive practice towards COVID-19, indicating the efficacy of present public health campaign. However, results also revealed that age, gender, and academic year should be taken into consideration when health and education authorities formulate tailored public health training and improve their preventative measures against the epidemic.

Although the results are positive towards KAP, the research has some suggestions for both the government and residents of Mogadishu Somalia as well: Appropriate preventive measures, healthy practices, and instructions must be strictly implemented by the government with the help of concerned agencies and organizations. 19% of the participants still not worn a mask when in contact with people or leaving home, therefore, the importance of these protective items should be emphasized more. Consequently, health promotion activities are vital in improving KAP towards COVID-19, and it is recommended to conduct interventional studies using the results of this study. Considering that the present study assessed only three demographic variables (age, gender & academic year), so it is also recommended that more demographic factors should be included in further studies.

References

- Dahab, M., van Zandvoort, K., Flasche, S., Warsame, A., Spiegel, P. B., Waldman, J., & Checchi, F. (2020). COVID-19 control in low-income settings and displaced populations: What can realistically be done? <https://www.lshtm.ac.uk/newsevents/news/2020/covid-19-control-low-income-settings-anddisplaced-populations-what-can>
- Haque, T., Hossain, K. M., Bhuiyan, M., Ananna, S. A., Chowdhury, S. H., Ahmed, A., & Rahman, M. M. (2020). Knowledge, attitude and practices (KAP) towards COVID-19 and assessment of risks of infection by SARS-CoV-2 among the Bangladeshi population: An online cross sectional survey. 1–21. <https://doi.org/10.21203/rs.3.rs-24562/v1>
- Hussain, A., Garima, T., Singh, B. M., Ram, R., & Tripti, R. P. (2020). Knowledge, attitudes, and practices towards COVID-19 among Nepalese Residents: A quick online cross-sectional survey. *Asian Journal of Medical Sciences*, 11(3), 6–11. <https://doi.org/10.3126/ajms.v11i3.28485>
- Huynh, G., Nguyen, T., Tran, V., Vo, K., Vo, V., & Pham, L. (2020). Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. *Asian Pacific Journal of Tropical Medicine*, 13(6), 260–265. <https://doi.org/10.4103/1995-7645.280396>
- Peng, Y., Pei, C., Zheng, Y., Wang, J., Zhang, K., Zheng, Z., & Zhu, P. (2020). Knowledge, Attitude and Practice Associated with COVID-19 among University Students: a Cross-Sectional Survey in China. 127, 1–24. <https://doi.org/10.21203/rs.3.rs-21185/v1>
- Qualls, N., Levitt, A., Neha, NW-J. (2017). *Community Mitigation Guidelines to Prevent Pandemic Influenza — United States*. Vol. 66.
- Vigdor, N. (2020). Man Fatally Poisons Himself While Self-Medicating for Coronavirus, Doctor Says. *The New York Times*. <https://www.nytimes.com/2020/03/24/us/chloroquine-poisoningcoronavirus.html>

- Weiss, P., Murdoch, DR. (2020). COVID-19: towards controlling of a pandemic. *Lancet*. 6736(20):1015–1018. [https://doi.org/10.1016/S0140-6736\(20\)30673-5](https://doi.org/10.1016/S0140-6736(20)30673-5)
- WHO (n.d.). Coronavirus Disease Situation Reports. Retrieved June 25, 2020, from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>
- Wong, G., Liu, W., Liu, Y., Zhou, B., Bi, Y., & Gao, G. F. (2015). MERS, SARS, and Ebola: The Role of Super-Spreaders in Infectious Disease. *Cell Host & Microbe*, 18(4), 398–401. <https://doi.org/10.1016/j.chom.2015.09.013>
- Zhong, BL., Luo, W., Li, HM., Zhang, QQ., Liu, XG., Li, WT. (2020). 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*; 16(10): 1745-1752.