Knowledge, Attitude and Practice of Health Care Professionals towards Covid-19 and Associated Factors at Public Health Facilities of Sidama Region, Ethiopia

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Abstract

Background: As the World Health Organization situation report of November 14, 2021, globally there were over 252 million confirmed cases and over 5 million deaths attributable to the COVID-19 pandemic. How COVID-19 is transmitted put health care professionals (HCPs) at higher risk of contracting the disease because of their work conditions. Information regarding knowledge, attitude, and practice (KAP) towards the disease among HCPs are of higher importance to devise interventions that will tackle the pandemic.

Methods: A facility based cross-sectional study was conducted from September 29 to October 07, 2020, among randomly selected 422 health care professionals. Epi-data and SPSS software were used for entry and analysis of the data respectively. Frequencies, percentages, and charts were used to describe the KAP of HCPs towards the disease. Binary logistic regression was conducted to identify factors that are associated with the KAP of HCPs. Variables with a p-value less than 0.05 were declared as significantly associated.

Results: 406 HCPs have participated in this study. Less than half (45%) HCPs had sufficient knowledge about COVID-19. HCPs aged 30 or more years, working in health centers, and HCPs that received an orientation or training regarding COVID-19 had significantly higher knowledge. About 77% HCPs had a positive attitude towards COVID-19. Educational level and knowledge about COVID-19 were significant predictors of attitude. About three-fifths (59%) of study participants had good practice towards COVID-19. Types of health facilities, work experience, and orientation or training status were significantly associated with the practice.

Conclusion: This study found a low proportion of HCPs having sufficient knowledge about COVID-19. About four in ten HCPs had poor practice towards COVID-19. Training, monitoring and supervision, knowledge and skill-sharing activities should be given due emphasis to tackle the pandemic in the region.

Background

In December 2019, a cluster of patients with pneumonia of unknown origin was identified in Wuhan, Hubei Province, China. Most of the patients had a history of visiting Huanan Seafood Wholesale Market, which trades in fish and a variety of live animal species including poultry, bats, marmots, and snakes. The Chinese Center for Disease Control and Prevention (China CDC) and Wuhan City health authorities reported an epidemic of pneumonia of unknown causes in Wuhan City on December 31, 2019 (1, 2). The causative agent was identified from throat swab samples conducted by the China CDC on 7th January 2020 and was subsequently named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Later on, World Health Organization (WHO) named the disease coronavirus disease 2019 (COVID-19) on 11 February 2020 (3).

As the World Health Organization situation report of November 14, 2021, globally there were over 252 million confirmed cases and over 5 million deaths attributable to the COVID-19 pandemic (4). Based on

the center of disease control and prevention (CDC), coronavirus spreads mainly from person to person by close contact (within about 2 meters) with infected people via respiratory droplets (through coughing or sneezing) or transmitted by touching a surface or object that the virus on it (5). How COVID 19 transmitted put health care professionals (HCPs) at higher risk of contracting the disease because of their work conditions. Every day in hospitals, health centers, home care settings, within the community and other places health care professionals meet with people to provide a variety of health services. Thus, they are exposed to this pandemic while executing their unavoidable responsibility and providing selfless service.

There is limited information describing the global number of HCWs infected by COVID-19; which might be due to a lack of reporting trend of the disease by profession. However, the number of HCPs acquired the disease were reported to CDC – the USA from the country's states. The report has shown that 9,282 HCWs (19% of total cases) were confirmed to have the disease and 27 died within the period February 12 to April 9, 2020. More than half of these HCPs had contact with COVID-19 patients in health care settings while others met the patients in households and communities (6). It is well known that HCPs' knowledge about a certain disease can influence their attitudes and practices. And also it can be predicted that incorrect attitudes and practices will lead to an increment in the risk of acquiring an infection (7).

Provision of health care during this highly transmittable pandemic is the responsibility of the HCPs. Because HCPs frequently contact patients infected with COVID-19, it poses a serious occupational health risks to the professionals (8). During epidemics protecting HCPs and preventing transmission of infections within the hospitals are vital actions. In turn, this requires that HCPs must have updated knowledge regarding the source, transmission, symptoms, and preventive measures of disease (9). Globally, some studies have been conducted to assess health care professionals' knowledge, attitudes, and practices (KAP) towards COVID-19, and most of them were done in hospital settings (10–13). The study conducted in Jordan has indicated only 36.1% of dentists reported that the incubation period of COVID-19 is 1-14 days but the majority of professionals were aware of symptoms (10).

The studies conducted concerning KAP of COVID-19 among HCPs did not address the professionals in rural health care settings especially health centers which are near to the majority of the population in many countries. As we know more than 80% of the Ethiopian population reside in a rural areas where health centers are in proximity providing both preventive and curative services. Public health officers, nurses, midwives, pharmacists, laboratory technicians are varieties of HCPs in most health centers. All of these professionals have direct contact with their patients in their day-to-day activities. A single infected HCP in a health center can transmit the disease to their patients and colleagues which further spread to the community. To date, there is no information regarding knowledge, attitudes, and practices towards COVID-19 among HCPs in Ethiopia including Sidama National Regional State. This study was aimed at determining the KAP of COVID-19 and associated factors among HCPs in Sidama National Regional State.

Materials And Methods

Study design and setting

Facility-based cross-sectional study design was implemented in this study. It was conducted in public health facilities of Dalle, Shebedino, Aleta Wondo, and Hawassa Zuria districts of Sidama National Regional State (SNRS). Being one of the administrative regions of Ethiopia, SNRS is located 272 km to the southeast of Addis Ababa, the capital city of Ethiopia. Currently, there were 15 public hospitals, 126 health centers, 531 health posts, 24 medium, and 83 primary private and 7 Non-Governmental Organizations (NGO) clinics. There were a total of one general hospital, 3 primary hospitals, and 23 health centers in the selected four districts.

Study subjects and sampling

Different categories of health care professionals (nurses, physicians, public health officers, midwives, druggists/pharmacists, laboratory technicians, and others) working in diverse departments have participated in the study. All public health facilities in four districts were included and an attempt was made to involve all departments in the facilities. The sample size for the study was estimated by assuming a 50% proportion of HCPs having sufficient knowledge due to the lack of similar studies in the comparable settings. We calculated the sample needed for the survey to be 422, assuming a 95% confidence interval, 5% precision, and 10% non-response rate. The total sample was divided into all health facilities proportionally based on the number of HCPs in the health facilities. The HCPs that agreed to participate and who responded with completed questionnaires were 406, which is 96.2% of the total sample size.

Measurement tool and data collection

Regarding the data collection tool, the questionnaire was developed after conducting a review of several published pieces of research and Ethiopian and WHO COVID-19 management guidelines (5, 14–16). Data were collected using a close-ended, structured, and self-administered questionnaire from September 29 to October 09, 2020. A questionnaire with four sections (socio-demographic characteristics, knowledge, attitude, and practice items) was prepared and administered in English. A standardized questionnaire was distributed by six first-degree holder data collecting HCPs and completed by study participants inside their health care facilities.

For most of the knowledge items participants were asked to respond yes, no, or I don't know and for some questions, they were asked to choose the correct answer and fill the blank space based on the nature of items. The attitude items were responded to using a five-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). The responses for practice items were always, sometimes, and never. Precautions for reducing COVID-19 infection, particularly physical distancing, wearing a mask, and sanitizing hands were implemented during the data collection process.

Operational definitions

Knowledge of COVID-19

it was considered sufficient if the participant correctly answers 80% (score = 14.4 or above) or more of knowledge questions; and insufficient knowledge when the score was below 80%. 18 items were used to assess knowledge of HCPs. To calculate knowledge score 1 and 0 points were given to correct and incorrect answers respectively.

Attitude towards COVID-19

it was considered positive attitude if the calculated score is equal to or greater than 80% (score = 32 or above); and negative attitude when the score was below 80%. 8 five-point Likert scale items were used to assess attitude scores. 5 to 1 points were given from strongly agree to strongly disagree responses in order.

Practice towards COVID-19

it was considered good practice if the participant correctly answers 80% (score = 21.6 or above) or more of practice questions; and poor practice when the score was below 80%. 9 items were used to assess the practice of HCPs. 3, 2, and 1 points were given to always, sometimes, and never responses respectively.

The 80% cut-off point for knowledge, attitude, and practice was used based on Bloom's recommendation as used by another study (16, 17).

Data management and analysis

To ensure data quality, one-day training was given to data collectors. Then pretest was conducted on 5% of the total sample size at Millennium health center. Then, necessary modifications were made to the tool for final data collection. The collected data were checked every day by research team members for completeness and appropriateness.

The collected data were cleaned, coded, and entered into Epi-data version 3.1 then exported to and analyzed using SPSS version 21. For the knowledge questions with multiple responses, the options were entered and analyzed independently. Descriptive statistics (Frequencies, proportions, measures of central tendency, and measure of variation) were used to describe the study findings. Binary logistic regression analysis was conducted to identify factors associated with the KAP of COVID-19. The summary of the result was presented descriptively by frequency tables, graphs, and charts and analytically by adjusted odds ratio and confidence interval. Explanatory variables with p-value less than 0.05 were declared as significantly associated.

Ethical Issues

Ethical clearance was obtained from Hawassa University College of Medicine and Health Science (HU-CMHS) Institutional Review Board. Support letter was obtained from the Research and Community Service Directorate of HU-CMHS and respective districts' health offices. Informed verbal consent was received from the participants after explaining the purpose of the study and confidentiality of data. Data were collected only from voluntary HCPs.

Results

Participants’ Socio-demographic Characteristics

From the total sample of four hundred twenty-two, 413 (response rate of 97.7%) health care professionals have participated in this study. Among these respondents 7 incomplete questionnaires were discarded; thus, 406 responses were eligible for the analysis. Of the 406 participants, 239 (58.9%) were male and the rest were female health care professionals. Their age ranged from 19-52 years with a mean of 28 (SD = 4.4) years. About 41 percent of the study participants had got training or orientation regarding COVID-19. The participants’ characteristics are shown in the table below (Table 1).

Table 1

Socio-demographic characteristics of participants (n=406)

Variable	Frequency	Percentage
Sex		
Male	239	58.9
Female	167	41.1
Age		
<30 years	283	70
≥30 years	123	30
Marital status		
Married	225	55.4
Single	179	44.1
Others	2	0.5
Religion		
Protestant	261	64.3
Orthodox	127	31.3
Muslim	14	3.4
Other	4	1
Type of health facility		
Health center	181	44.6
Primary hospital	132	32.5
General hospital	93	22.9
Profession		
Nurse	211	52
Public health officer	66	16.3
Midwife	35	8.6
Laboratory	31	7.6
Medical doctor	28	6.9
Pharmacy	20	4.9
Other	15	3.7
Educational level		
First degree	241	59.4

Diploma	160	39.4
Other	4	1
Work experience		
Up to 5 years	217	53.6
6-10 years	158	39
>10 years	30	7
Orientation and/or training on COVID-19		
Yes		
No	167	41.1
	239	58.9

Knowledge about COVID-19

The mean knowledge score was 13.6 (SD = 2.97). This mean score is 75.6% of the total score. Forty-five percent (n=183) of the participants scored 80% or more and were considered to have sufficient knowledge regarding COVID-19. About 74 and 77 percent HCPs correctly responded incubation and quarantine periods respectively for COVID-19 (Table 2).

Table 2

Participants' response to knowledge questions towards COVID-19 (n=406)

Knowledge items	Responses	(N, %)
What are the free call center numbers to seek information about COVID-19 in Ethiopia?	<u>952 and/or 8335</u> Other Do not know	222 (54.7) 14 (3.4) 170 (41.9)
What type of microorganism is the causative agent of COVID-19?	<u>Virus</u> Other	397 (97.8) 9 (2.2)
How COVID-19 virus transmits from an infected person to an uninfected person?	<u>Via respiratory droplets</u> <u>Via direct contact</u> Do not know	371 (91.4) 265 (65.3) 2 (0.5)
People infected with COVID-19, but have no symptoms can transmit the virus to others	<u>Yes</u> No Do not know	238 (58.6) 128 (31.5) 40 (9.8)
What is the incubation period of COVID-19?	Less than 7 days <u>2-14 days</u> 2-21 days Do not know	21 (5.2) 302 (74.4) 70 (17.2) 12 (3)
What are the most common clinical manifestations of COVID-19?	<u>Fever</u> <u>Dry cough</u> <u>Muscle pain</u> Do not know	329 (81) 313 (77.1) 148 (36.5) 7 (1.7)
What is the scientific way of confirming the COVID-19 case?	<u>By lab</u>	321

	<u>investigation</u>	(79.1)
	Signs and symptoms	18 (4.4)
	By physical examination	8 (2)
	Do not know	59 (14.5)
Supportive treatment can help most patients recover from the COVID-19 infection	<u>Yes</u>	338 (83.3)
	No	61 (15)
	Do not know	7 (1.7)
For how long do you think people who have contact with someone infected with the COVID-19 virus quarantined?	5-10 days	16 (3.9)
	<u>14 days</u>	315 (77.6)
	21 days	68 (16.7)
	Do not know	5 (1.2)
What are the preventive measures for COVID-19?	<u>Staying at home</u>	348 (85.7)
	<u>Wearing mask</u>	334 (82.3)
	<u>Physical distancing</u>	312 (76.8)
	<u>Hand washing</u>	280 (69)
What is/are the correct measure/s if a health worker finds an individual who has contact with a person infected with COVID-19? (encircle all applicable)	<u>Immediate isolation</u>	291 (71.7)
	Admitting the patient	31 (7.6)
	Providing symptomatic treatment	13 (3.2)
	Other	9 (2.2)
	Do not know	62 (15.3)

Note: Correct answers are underlined.

Attitude towards COVID-19

The mean attitude score was 34.3 (SD = 4.7). Seventy-seven percent (n=313) of health care professionals (that had scored 80% and above of total attitude score) had a good attitude towards COVID-19. Only 47 percent healthcare professionals strongly agreed to receive COVID-19 vaccine when it became available. Only about 38 percent HCPs strongly agreed to work in COVID-19 care center if they are asked by the government Table 3.

Table 3

Participants' response for attitude items (n=406)

Attitude statements	SD (n, %)	D (n, %)	N (n, %)	A (n, %)	SA (n, %)
I am at risk of getting COVID-19 infection	19 (4.7)	15 (3.7)	19 (4.7)	131 (32.3)	222 (54.7)
I am scared of transmitting COVID-19 to my family members	15 (3.7)	24 (5.9)	29 (7.1)	137 (33.7)	201 (49.5)
My daily life has been affected by the COVID-19 pandemic	11(2.7)	24 (5.9)	34 (8.4)	134 (33)	203 (50)
COVID-19 is a serious disease	2 (0.5)	15 (3.7)	29 (7.1)	86 (21.2)	273 (67.2)
Staying at home, wearing masks, keeping 2 meters distance, and frequent hand washing are effective ways to prevent COVID-19 transmission	3 (0.7)	9 (2.2)	20 (4.9)	131 (32.3)	243 (59.9)
I will take the COVID-19 vaccine when it is made available	13 (3.2)	18 (4.4)	42 (10.3)	142 (35)	191 (47)
I am voluntary to work in a COVID-19 care center if assigned by the government	11 (2.7)	21 (5.2)	41 (10.1)	178 (43.8)	155 (38.2)
If I have major symptoms associated with COVID-19 or contact with COVID-19 infected individual, I am okay to be quarantined	6 (1.5)	15 (3.7)	30 (7.4)	159 (39.2)	196 (48.3)

SD: Strongly Disagree, D: Disagree, N: Neutral, A: Agree, SA: Strongly Agree

Practice towards COVID-19

The mean practice score was 22.3 (SD: 3.3). Fifty-nine percent (n=239) of health care professionals (that had scored 80% and above of total practice score) had good practice of COVID-19. Among the

participants only 46.6 percent were responded that they avoid going to crowded places and only about 48 percent reported that they maintain physical distancing in their day to day activities (Table 4).

Table 4
Participants' response for practice items (n=406)

Practice statements	Never (n, %)	Sometimes (n, %)	Always (n, %)
How often do you avoid going to crowded places?	21 (5.2)	196 (48.3)	189 (46.6)
How often do you wear a mask when moving out of your home?	16 (16.7)	152 (37.4)	238 (58.6)
How often do you refrain from shaking hands, hugging, and kissing people?	68 (3.7)	130 (32)	208 (51.2)
To prevent contracting and spreading COVID-19, how often do you pay more attention to personal hygiene than usual?	9 (2.2)	140 (34.6)	256 (63.2)
How often do you wash your hands/use alcohol-based sanitizer before and after handling patients?	6 (1.5)	140 (34.5)	260 (64)
How often do you practice physical distancing by remaining 2 meters away from others when possible?	15 (3.7)	195 (48)	196 (48.3)
How often do you notify COVID-19 suspected case to the appropriate authority when you encounter it?	13 (3.2)	171 (42.1)	222 (54.7)
How often do you follow a protocol for triage and isolation of suspected COVID-19 cases in your workplace?	36 (8.9)	176 (43.3)	196 (47.8)
How often do you clean and disinfect frequently touched objects and surfaces?	33 (8.1)	170 (41.9)	203 (50)

Factors associated with knowledge, attitude, and practice towards COVID-19 among HCPs

Factors associated with knowledge were age (AOR: 1.86; 95%CI: 1.13–3), educational level (AOR: 2.3; 95%CI: 1.46–3.65), type of health facility (AOR: 0.35; 95%CI: 0.19–0.63), and COVID-19 orientation and/or training (AOR: 1.6; 95%CI: 1.05 – 2.5). Educational level (AOR: 1.84; 95%CI: 1.1-3.0) and knowledge about COVID-19 (AOR: 4.7; 95%CI: 2.6-8.4) were associated with the attitude of the HCPs. Factors associated with the practice were COVID-19 training and/or orientation (AOR: 2; 95%CI: 1.3-3.2), working in primary hospitals (AOR: 4.3; 95%CI: 2.6-7.3), working in a general hospital (AOR: 2; 95%CI: 1.2-3.5), work experience in years (AOR: 1.8; 95%CI: 1.16-2.76) (Table 5).

Table 5

Factors associated with knowledge, attitude, and practice of health care professionals towards COVID-19
(n=406)

<u>Knowledge</u>			
Variables	Frequency (%)	COR (CI)	AOR (CI)
Sex			
Male	239 (58.9)	1.6 (1.1-2.5)	1.5 (0.95-2.2)
Female	167 (41.1)	1	1
Age			
<30	283 (69.7)	1	1
≥30	123 (30.3)	1.5 (0.96-2.2)	1.86 (1.1-3)*
Educational level			
Diploma	160 (39.4)	1	1
First degree & above	245 (60.3)	1.9 (1.3-2.9)	2 (1.3-3.2)*
Type of health facility			
Health center	181 (44.6)	1	1
Primary hospital	132 (32.5)	1.2 (0.8-1.95)	1.0 (0.64-1.68)
General hospital	93 (22.9)	0.44 (0.26-0.75)	0.33 (0.19-0.58)*
Orientation and/or training on COVID-19			
No			
Yes	239 (58.9)	1	1
	167 (41.1)	1.6 (1.1-2.4)	1.6 (1.03-2.39)*
<u>Attitude</u>			
Sex			
Male	239 (58.9)	1.5 (0.95-2.43)	1.4 (0.85-2.3)
Female	167 (41.1)	1	1
Age			
<30	283 (69.7)	1	1

≥30	123 (30.3)	0.72 (0.44-1.18)	0.59 (0.34-1.0)
Educational level			
Diploma	160 (39.4)	1	1
First degree & above	245 (60.3)	2.1 (1.3-2.4)	1.8 (1.1-3)*
Knowledge			
Insufficient	220 (54.6)	1	
Sufficient	183 (45.4)	4.6 (2.6-8)	4.7 (2.6-8.4)*
<u>Practice</u>			
Type of health facility			
Health center	181 (44.6)	1	1
Primary hospital	132 (32.5)	4.4 (2.7-7.4)	4.3 (2.6-7.3)*
General hospital	93 (22.9)	2.3 (1.4-3.8)	2 (1.2-3.5)*
Educational level			
Diploma	160 (39.4)	1	1
First degree & above	245 (60.3)	1.7 (1.1-2.5)	1.2 (0.74-1.83)
Work experience			
≤5 years	217 (53.4)	1	
≥6years	188 (46.3)	1.6 (1.05-2.34)	1.8 (1.16-2.76)*
Orientation and/or training on COVID-19			
No			
Yes	239 (58.9)	1	1
	167 (41.1)	2 (1.4-3.2)	2 (1.3-3.2)*
Knowledge			
Insufficient	220 (54.6)	1	1
Sufficient	183 (45.4)	1.4 (0.92-2.0)	1.3 (0.84-2.0)

Discussion

COVID-19 is an emerging, rapidly changing global health challenge affecting all sectors. HCWs are not only at the forefront of the fight against this highly contagious infectious disease but are also directly or indirectly affected by it and the likelihood of acquiring this disease is higher among HCPs compared to the general population. It is of high significance that HCPs across the world have adequate knowledge about all aspects of the disease mainly clinical manifestation, diagnosis, proposed treatment, and established prevention strategies. As per our knowledge, this is the first study in Sidama National Regional State to assess the KAP of HCPs towards COVID-19. Globally, there are some studies documented the KAP of HCWs towards COVID-19.

In our study, we were able to demonstrate that about 5 in 10 HCPs had sufficient knowledge regarding COVID-19. We have found a mean knowledge score of 75.6% for questions about COVID-19 knowledge among HCPs working at public health facilities of Sidama National Regional State. This score is lower than the studies conducted among the US (80%) (18) and Chinese (90%) (19) general population. This difference may be due to the Chinese and US studies assessed COVID-19 symptoms using one direct question rather than asking the participants to choose from multiple options. In this study, it was found that only 45 percent of HCPs had sufficient knowledge concerning the cause, transmission, clinical manifestation, treatment, and prevention of COVID-19. This is lower than the proportion of HCPs with sufficient knowledge reported from Uganda (69%) (16). This difference may be attributable to more items used to assess COVID-19 knowledge in this study.

According to this study, older HCPs (≥ 30 years) were more likely to have sufficient knowledge contrary to Ugandan findings (16) where younger HCPs were more knowledgeable. This might be because of prompt attention given by older HCPs to COVID-19 related information. HCPs working in health centers were more knowledgeable compared to those work in a general hospital. This might be due to higher attention given to health centers concerning their proximity to the community. HCPs that got an orientation or training on COVID-19 were more likely to have sufficient knowledge than those who did not. This implies pieces of training on COVID-19 is necessary to enhance knowledge of HCPs. Sex of HCPs did not significantly associate with knowledge about COVID-19.

In this study, a mean attitude score of 85.8% was obtained on questions about COVID-19 attitude among HCPs working at public health facilities. It was revealed that 77 percent of participants had a positive attitude toward COVID-19. This is lower than the Vietnamese finding (93.3%) (20) but much higher than the Ugandan study (21%) (16). Generally, the majority of HCPs had a positive attitude towards COVID-19. About 61 percent of HCPs said the preparation of their facilities to prevent COVID-19 is good. Only nearly half (55%) of HCPs reported that Ethiopia will control COVID-19. Health Care Professionals whose educational level is first degree and above were more likely to have a positive attitude. Knowledge about

COVID-19 was a significant predictor of attitude as the study conducted in Vietnam (20). Sex and age of HCPs were not significantly associated with attitude towards COVID-19.

About six in ten HCPs had good practice in our study. HCPs working in primary hospitals, as well as a general hospital, were more likely to have good practice than that work in health centers. HCPs that had six and more years of work experience had good practice as compared to counterparts. This study had also found that HCPs that attended orientation or training about COVID-19 had a good practice. Educational level, knowledge about COVID-19, and attitude towards COVID-19 were not significant predictors of COVID-19 practice.

Limitations

This study had some limitations. Firstly, the practice of HCPs was not observed rather it was filled by them; which may mask the actual practice. Secondly, since there was no standardized tool to assess the KAP of healthcare professionals we have adapted the questionnaire from WHO and Ethiopian COVID-19 management guidelines and some surveys (5, 14–16). Thirdly, the survey was conducted in only four districts of Sidama regional state and the results may not reflect the KAP of HCPs in the entire country.

Conclusion

We found that less than half of the study participants had sufficient knowledge about COVID-19 in Sidama regional state public health facilities. Knowledge about COVID-19 was significantly higher among HCPs aged 30 or more years, working in health centers, and HCPs that received an orientation or training regarding COVID-19. More than three fourth of HCPs had a positive attitude towards COVID-19. HCPs with an educational level of degree or more and had sufficient knowledge were more likely to have a positive attitude. About three-fifths of HCPs had good practice regarding COVID-19 in our study. The type of public health facility, work experience, and COVID-19 orientation or training status were statistically significant predictors of practice towards COVID-19.

We suggest regional health bureau and partners train health care professionals regarding the pandemic. Then, they need to supervise and monitor the overall COVID-19 control activities performed by HCPs in the public health facilities. Public health facilities need to facilitate knowledge and experience sharing among the trained and untrained HCPs in their organization. It will also be good if the HCPs also update themselves regarding COVID-19 through different information sources.

Abbreviations

AOR: Adjusted Odds Ratio; CDC: Centers for Disease Control and Prevention; COR: Crude Odds Ratio; HCPs: Health Care professionals; HU-CMHS: Hawassa University College of Medicine and Health Sciences; KAP: Knowledge, Attitude, and Practice; NGO: Non-Governmental Organization; SD: Standard Deviation; SNRS: Sidama National Regional State; SPSS: Statistical Package for Social Sciences; USA: United States of America; WHO: World Health Organization;

Declarations

Ethics Approval and Consent to Participate

This study was ethically approved by Hawassa University College of Medicine and Health Sciences Institutional Review Board (IRB/291/12). Informed verbal consent was received from study participants following an explanation of the survey purpose.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and analyzed for this study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' Contributions

All authors contributed to the conceptualization of the study. SD, YS, EM, and AE coordinated the data collection process. The original draft was written by SD. The subsequent review of the report and manuscript revision was done by all authors.

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