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RESEARCH ARTICLE

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Knowledge, Attitude and Practice of Covid-19 Prevention and Associated Factors among House Holds In Ilu Ababor and Bunno Bedele Zones, Southwest Ethiopia: A Cross-Sectional Study

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ABSTRACT

Background: Corona virus disease 2019 (COVID-19) has become the center of global public health concern. COVID-19 has evolved into a pandemic which requires persons around the world to attend to rapidly changing messages and take immediate actions to minimize the risk of infection. Knowledge of a disease can influence the attitudes and practices, and incorrect attitudes and practices directly increase the risk of infection. Thus, understanding the level of knowledge, attitude and practice (KAP) and possible contributing factors could help to design COVID 19 preventive strategies.

Objective: The aim of this study was to assess the level of knowledge, attitude and practice and associated factors among households in Ilu Ababor and Bunno Bedele zones, Southwest Ethiopia.

Method: Community based cross sectional study was conducted on households in Ilubabor and Buno Bedele zones. Households were selected by systematic random sampling. Data were collected using structured and pretested questionnaire. Epi data v3.1 and SPSS v23 were used to enter and analyze data. Independent t-test and one way analysis of variance (ANOVA) were used to examine mean difference between groups of independent variables.

Results: A total of 420 households responded, making a response rate of 99.5% in which more than half 220(52.4%) of them were males. Overall, 30.5%, 33.3% and 30.5% of respondents had high level of knowledge, attitude and practice level respectively. Access to information, access to face mask, cigarette smoking, khat chewing, drinking alcohol, age, occupation, and educational level were significantly associated with knowledge, attitude and practice of COVID-19 prevention.

Conclusion and Recommendations: The finding of this study revealed that knowledge, attitude and practice towards prevention of COVID-19 were low. The identified factors associated with KAP were: access to information, access to face mask, cigarette smoking, khat chewing, drinking alcohol, age, occupation, and educational level. Health facilities in Ilu Ababor and Bunno Bedele Zones should work hardly to improve the awareness and practice as well as to tackle the contributing factors.

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COVID-19, Knowledge, Attitude, Practice, Community

Abbreviations

ANOVA, Analysis of variance, COVID-19, Corona virus disease 2019, HSD, Honesty significance difference, SARS, Severe acute respiratory syndrome, SPSS, Statistical package for social science, WHO, World health organization

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Introduction

Coronavirus disease 2019 (COVID-19) is an emerging respiratory disease caused by a novel coronavirus and was first detected in December 2019 in Wuhan, China. The disease is highly infectious, and the main clinical presentation include fever, dry cough, fatigue, myalgia, dyspnea , lung infection, and acute respiratory distress syndrome which in few patients may eventually leads to death [1-3].

The virus can be mainly transmitted through the droplets, direct contact with an infected person and aerosols. Droplets transmission may occur when an infected person coughs or sneezes [4]. Epidemiological studies have been showed that the incubation period of COVID-19 is between 1-14 days and the virus has been found to be contagious even in the asymptomatic patients [5]. The infection is found to be more prominent 0in the elderly and people with other comorbid diseases [3,6].

The world health organization (WHO) declared it as a global public health concern on January 30, 2020 and has emphasized the need for collaborative efforts of all countries to prevent the rapid spread of the virus, to better understand and minimize the threat in affected countries and to reduce the risk of further international spread [7]. Again as of March 11, 2020, COVID-19 has been declared as a global pandemic by the WHO and most of the countries have registered COVID-19 cases [8]. The ongoing COVID-19 pandemic has spread very quickly, and by April 19, 2020, the virus had reached 210 countries, about 2,333, 283 laboratory conformed cases and 160,818 deaths were reported globally. From which about 105 confirmed cases and 3 deaths are accounted from Ethiopia [8,9]. Even though extensive number of studies have been undergoing, to date no specific antiviral drug or vaccine for the virus has been reported, so prevention and supportive care is the only currently available method [2,8,10].

Since its outbreak in December 2019 in Wuhan china, COVID-19 has become the center of global health concern [11,12]. It have evolved into a pandemic, requiring persons around the world to attend to rapidly changing messages about public health and take immediate actions to minimize the risk of infection and the spread of the virus [13]. It is understandable that this extraordinary global crisis has also been marked by miscommunication regarding the forthcoming threat of COVID-19, leading to public confusion and inaction [14]. COVID-19 is an acute resolved, but also a deadly disease with a 2% case fatality rate, and the death from covid-19 might be due to massive alveolar damage and progressive respiratory failure [2,15].

The current widespread outbreak has been partly associated with a delay in diagnosis and poor infection control procedures which may also have direct association with knowledge, attitude and practice of the community [12]. Knowledge, attitudes, and practices (KAP) survey is useful to inform prevention, control and mitigation measures during infectious disease pandemic. It helps to generate critical information to guide response and recovery efforts, health education, and social mobilization. KAP surveys are also important to identify the incidence of misconceptions about disease transmission and prevention[10].

The KAP for a particular infectious disease can be influenced by various factors which may include the magnitude of the illness, severity of its spread and the fatality rate. Existing evidence indicate that since the announcement of COVID-19 as a pandemic by the WHO knowledge, attitude and practices toward COVID-19 has been growing overtime, nonetheless the complete clinical picture of COVID-19 is yet to be understood [15].

It is evident that the battle against COVID-19 is still ongoing worldwide; many countries are exerting their efforts to combat the spread of this disease. Prevention and control measures are developing elsewhere, people's adherence to these control measures which is largely affected by their knowledge, attitudes, and practices (KAP) towards COVID-19 are essential to guarantee the final success [16,17].

The negative attitudes, poor knowledge about the disease and the potentially dangerous practices of the community towards COVID-19 pandemic are among the factors which contributed to the spread of the infection [1]. It is a worth mentioning that the ongoing COVID-19 pandemic is inducing fear, and a timely understanding of the situation is urgently needed for the general public11. Knowledge of a disease can influence the attitudes and practices, and incorrect attitudes and practices directly increase the risk of infection, thus understanding the KAP and possible contributing factors helps to predict the outcomes of planned behavior [18].

The fact that communities are at risk of this pandemic disease has let the government of Ethiopia to set different protocols, policy and lastly state of emergency to tackle the spread of COVID-19 infection. Measures like closing of public recreational area such as resort, night club, closing of educational institute, releasing of prisoners suspension of public transportation, isolation and care for infected people and suspected case and suspension of more than 90 international flights were taken [19,20,21]. Despite these efforts, number of COVID 19 case is increasing from day to day.

An extensive research from the western part of the world has been undergoing but by far focused on the clinical manifestation of the disease and its impact, there are very few studies carried out on KAP till now. As far as researchers knowledge there are no reported data available on this particular topic in Ethiopia in general and study area in particular, Thus, this study aimed to investigate KAP of COVID 19 prevention and associated factors among households in Ilu Ababor and Buno Bedele zones, southwest Ethiopia.

Methods

Community based cross- sectional study was conducted in selected woredas of Ilu Ababor and Buno Bedele Zones, southwest Ethiopia from May to June, 2020. The capital of the two zones Bedele and Mettu town are situated at 488 and 600 km southwest direction of Addis Ababa (the capital city of Ethiopia) respectively. The source populations were all households in Ilu Ababor and Buno Bedele zones. The study

populations were household in randomly selected woredas of Ilu Ababor zone and Buno Bedele Zones. The sample size was determined by using single population proportion with following assumptions a confidence level of 95%, a margin of error of 5% and 0.5% proportion of KAP towards COVID-19 Prevention and 10% was added for non-response, the sample size became 422. A lottery method was used to select eight woreda from the two zones, and then kebele from the selected woredas. The number of respondents from the selected woreda and kebele were determined using proportionate sampling technique. Data on COVID-19 prevention knowledge, attitude and practices were collected. Data were collected through face to face interview by using structured and pretested questionnaire.

Data collection instrument has three sections: The first section is about Socio-demographic Information, The second section is about KAP toward COVID-19 and the third section is about factors influencing KAP toward covid-19. All filled questionnaire were checked for completeness and internal consistency of the responses by field supervisors, and immediate corrections were made on identified error through revisit. Data were entered into two computers by two independent data entry Clerks using Epi data V 3.1. In all analyses of the data of this research, a two-sided p-value of < 0.05 was used to declare statistical significance. Categorical variables were summarized as numbers and percentages, whereas normally distributed continuous variables were presented as means and standard deviations. Independent t-test and one way analysis of variance (ANOVA) were used to examine mean difference between groups of independent variables. Independent variables with two groups were analyzed by independent t test and variables with three or more groups were analyzed by one way ANOVA.

Ethical clearance was obtained from COVID-19 committee of Mettu University. Support Letter was written to Ilu Ababor and Buno Bedele Zones. Permission letter was obtained from Ilu Ababor and Buno Bedele zone and will be submitted to relevant woredas. Written informed Consent was obtained from each participant.

Results

Socio-Demographic Characteristics of The Respondents

A total of 420 peoples responded, making a response rate of 99.5%. Among the respondents more than half 220(52.4%) are males and the others are females. The mean age of the respondents was 41 and majority of them (136(32.4%)) found between the age group of 31 and 40 years. With respect to occupation majority of them (148(35.2%)) were government employees and majority (292(69.5%)) of them were married (See Table 1).

Table 1: Socio-demographic characteristics of Ilu Ababor and Buno Bedelle Zones community, 2020 (n=420)

Variables	Freq	%
Sex		
Male	220	52.4
Female	200	47.6
Age(mean=41, SD=11.7)		
<20	16	3.8
21-30	80	19
31-40	136	32.4
41-50	92	21.9
>50	96	22.9
Occupation		
Farmer	80	19.1
Government employee	148	35.2
Student	12	2.9
Merchant	132	31.4
Others	48	11.4
Marital status		
Single	68	16.2
Married	292	69.5
Divorced	40	9.5
Widowed	20	4.8
Family size		
<2	60	14.3
2-4	168	40
>4	192	45.7
Educational level		
No formal education	52	12.4
1-8	100	23.8
9-12	112	26.7
Diploma	68	16.2
Degree	80	19
Masters	8	1.9
Religion		
Orthodox	148	35.2
Protestant	100	23.8
Muslim	172	41
Residence		
Urban	239	56.9
Rural	181	43.1
Monthly income		
<1000	104	24.8
1001-3000	184	43.8
3001-5000	108	25.7

Knowledge of the Respondents Regarding COVID-19

According to the finding of the study, majority of the participants ((416(99%), 412(98.1%) and 412(98.1%)) were correctly answered

that they had heard about COVID- 19, COVID-19 is a contagious disease and washing hands with water and soap can eliminate the disease cause respectively while 312(74.3), 204(48.6), 140(33.3) of the participants incorrectly answered about the treatment of COVID-19, the cause of COVID-19,and whether the virus is more dangerous in pregnant women or not respectively (Table 2)

Table 2: Knowledge of households in Ilu Ababor and Buno Bedelle zones about COVID-19, South West Ethiopia, 2020

Questions related to COVID-19 knowledge	Correct	incorrect
	Freq(%)	Freq(%)
I have heard about COVID-19	416(99)	4(1)
COVID-19 is a contagious disease	412(98.1)	8(1.9)
Which of the following is the cause of COVID-19?	216(51.4)	204(48.6)
How long is the incubation period of the disease?	236(56.2)	184(43.8)
Which of the following is the treatment for COVID-19?	108(25.7)	312(74.3)
In which age group is the disease more dangerous?	284(67.6)	136(32.4)
Fever is a symptom of COVID-19	360(85.7)	60(14.3)
Cough is a symptom of COVID-19	380(90.5)	40(9.5)
Sore throat is a symptom of COVID-19	308(73.3)	112(26.7)
Body pain is a symptom of COVID-19	272(64.8)	148(35.2)
Diarrhea or constipation is a symptom of COVID-19	228(54.3)	192(45.7)
Headache is a symptom of COVID-19	360(85.7)	60(14.3)
In suspecting infection with COVID-19, primarily I will measure fever	340(81)	80(19)
In suspecting infection with COVID-19, primarily I will visit a physician	372(88.6)	48(11.4)
In suspecting infection with COVID-19, I will avoid unnecessary daily activities	344(81.9)	76(18.1)
To avoid contracting COVID-19, I avoid contact with individuals suspected to be infected with COVID-19	368(87.6)	52(12.4)
The prevalence of COVID-19 disease is increasing in Ethiopia	365(84.8)	64(15.2)
Washing hands with water and soap can eliminate the disease cause	412(98.1)	8(1.9)
The disease can be transmitted directly through cough	388(92.4)	32(7.6)
The diseases can be transmitted directly through contact with infected surfaces	368(87.6)	52(12.4)
The disease can be transmitted directly through the consumption of contaminated dairy and meat	204(48.6)	216(51.4)
The disease can be transmitted directly through contact with infected individuals	396(94.3)	24(5.7)
The diseases is more dangerous in pregnant women	280(66.7)	140(33.3)
The disease is more dangerous in old individuals	324(77.1)	96(22.9)
The disease is more dangerous in people with weakened immune systems	312(74.3)	108(25.7)
The disease is more dangerous is people with cancer, diabetes, and chronic respiratory diseases	348(82.9)	72(17.1)
Quartile of correctly answered knowledge(of 26 items)		
Quartile 1 =0-25	1-18 of 26	-
Quartile 2 = 25-50	19-20 of 26	-
Quartile 3= 50-75	21-22 of 26	-
Quartile 4=75-100	23-26 of 26	-

Knowledge Level of the Respondents Regarding COVID-19

According to the present study, most (41.9%) of the respondents had moderate knowledge and 30.5% of them had high knowledge (figure 1)

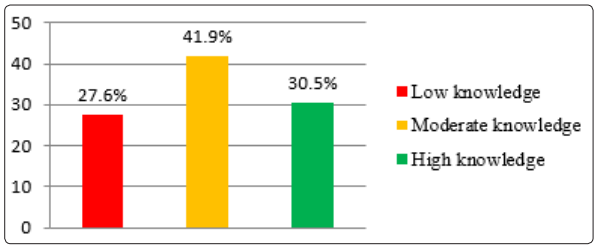

Figure 1: knowledge level of Ilu Ababor and Buno Bedelle zones households about COVID-19, South West Ethiopia, 2020(n=420)

Attitude of the Respondents Regarding COVID-19

According to table below, majority of the participants ((404(96.2%), 396(94.3%) and 388 (92.4%)) correctly perceived that early detection of COVID-19 can improve treatment and outcome, health education can help prevent COVID-19 and COVID-19 can be avoided by proper precaution respectively. On the other hand 308(73.3%), 240(57.1%) and 180(42.9%) of the participants incorrectly perceived that COVID-19 can be treated at home, COVID-19 disease results in death in all cases and awareness considering COVID-19 disease in society is sufficient respectively (Table 3).

Table 3: Knowledge of households in Ilu Ababor and Buno Bedelle zones about COVID-19, South West Ethiopia, 2020(n=420)

Questions related to COVID-19 Attitude	Correct	incorrect
	Freq(%)	Freq(%)
It is my opinion that early detection of COVID-19 can improve treatment and outcome	404(96.2)	16(3.8)
It is my opinion that COVID-19 can be treated at home	112(26.7)	308(73.3)
It is my opinion that health education can help prevent COVID-19	396(94.3)	24(5.7)
It is my opinion that COVID-19 is a serious disease	372(88.6)	48(11.4)
It is my opinion that that COVID-19 can be avoided by proper precaution	388(92.4)	32(7.6)
It is my opinion that if there is an available vaccine for the disease, It should be used	332(79)	88(21)
It is my opinion that COVID-19 is a curable disease	344(81.9)	76(18.1)
It is my opinion that the awareness considering COVID-19 disease in society is sufficient.	240(57.1)	180(42.9)
It is my opinion that COVID-19 disease results in death in all cases	180(42.9)	240(57.1)
It is my opinion that COVID-19 disease can be transmitted through household pets to humans	248(59)	172(41)
It is my opinion that authorities should restrict travel to and from COVID-19 disease areas to prevent contamination.	304(72.4)	116(27.6)
It is my opinion that authorities should quarantine COVID-19 patients in special hospitals	328(78.1)	92(21.9)
It is my opinion that in the event of an increase in the number of cases of COVID-19, authorities should be ready to close educational centers (kindergartens, schools, and universities).	336(80)	84(20)
It is my opinion that authorities should be prepared to restrict access to religious sites, shrines, and mosques if the number of COVID-19 cases increases.	328(78.1)	92(21.9)
It is my opinion that if the number of COVID-19 cases increases, authorities should be ready to lock down and quarantine the city	300(71.4)	120(28.6)
Quartile of correctly answered attitude (of 15 items)		
Quartile 1 =0-25	1-10 of 15	-
Quartile 2 = 25-50	11 of 15	-
Quartile 3= 50-75	12 of 15	-
Quartile 4=75-100	13-15 of 15	-

Level of Attitude of Respondents about COVID-19 Prevention

A total of 420 individuals responded to the attitude questions; among them majority (39%) of them have a moderate attitude and almost one third (33.3%) of them had a high attitude towards prevention of COVID-19 (figure 2).

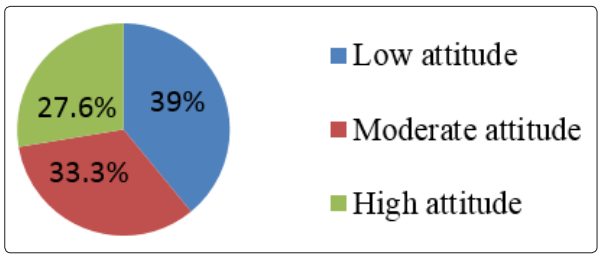

Figure 2: level of attitude of households in Ilu Ababor and Buno Bedelle zones about COVID-19 prevention, 2020(n=420).

Practice of households in Ilu Ababor and Buno Bedelle zones about COVID-19 Prevention

According to the finding of the study, majority of the participants ((372(88.6%), 356(84.8%) and 356(84.8%)) were correctly answered that in order to prevent contracting and spreading COVID-19, I frequently wash my hands, In order to prevent contracting

and spreading COVID-19 I avoid handshaking, hugging and kissing and In order to prevent contracting and spreading COVID-19, I pay more attention to my personal hygiene than usual respectively; while 320(76.2%), 260(61.9%), 204(48.6%) of the participants incorrectly answered when to you use facial masks, importance of taking vitamin supplements and importance of avoiding going to work respectively (Table 4)

Table 4: Practice of households in Ilu Ababor and Buno Bedelle zones about COVID-19, South West Ethiopia, 2020(n=420)

Questions related to COVID-19 Practice	Correct	incorrect
	Freq(%)	Freq(%)
In order to prevent contracting and spreading COVID-19, I avoid going out of my home	300(71.4)	120(28.6)
In order to prevent contracting and spreading COVID-19, I avoid unnecessary vacations	336(80)	84(20)
In order to prevent contracting and spreading COVID-19, I avoid consuming outdoor food	288(68.6)	132(31.4)
In order to prevent contracting and spreading COVID-19 I avoid handshaking, hugging and kissing	356(84.8)	64(15.2)
In order to prevent contracting and spreading COVID-19, I avoid public transportations (taxi, bus, subway, plane, train)	288(68.6)	132(31.4)
In order to prevent contracting and spreading COVID-19, I avoid going to work	216(51.4)	204(48.6)
In order to prevent contracting and spreading COVID-19, I frequently wash my hands	372(88.6)	48(11.4)
In order to prevent contracting and spreading COVID-19, I pay more attention to my personal hygiene than usual	356(84.8)	64(15.2)
In order to prevent contracting and spreading COVID-19, I use disinfectant and solutions	304(72.4)	116(27.6)
In order to prevent contracting COVID-19, I use herbal products and traditional medicine	256(61)	164(39)
In order to prevent contracting COVID-19, I take vitamin supplements	160(38.1)	260(61.9)
In order to prevent contracting and spreading COVID-19, when do you use facial masks?	100(23.8)	320(76.2)
Quartile of correctly answered practice (of 15 items)		
Quartile 1 =0-25	1-7 of 12	-
Quartile 2 = 25-50	8 of 12	-
Quartile 3= 50-75	9 of 12	-
Quartile 4=75-100	10-12 of 12	-

Common Factors Related to KAP of COVID-19

The present study revealed that almost two third (276(65.7%)) the participants had hand washing facilities, however, 240 (57.1%) and 248 (59%) of participants had no access to hand sanitizer and face mask respectively (Table 5).

Table 5: Common factors related to KAP of COVID-19 among selected households in Ilu Ababor and Buno Bedelle zones, South West Ethiopia, 2020(n=420).

Variable	Yes	No
	Freq(%)	Freq(%)
Do you have any chronic health problem like HTN, DM, Epilepsy, Asthma etc ?	60(14.3)	360(85.7)
Do you have an access to information from any type of media?	360(85.7)	60(14.3)
Do have health insurance	84(20)	336(80)
Do you have access to hand washing facility	276(65.7)	144(34.3)
Do you have access to hand sanitizer?	180(42.9)	240(57.1)
Do you have access to face mask?	172(41)	248(59)
Do you smoke tobacco (cigarette) in the past 3 months?	48(11.4)	372(88.6)
Do you chew khat in the past 3 months?	76(18.1)	344(81.9)
Do you drink alcohol in the past 3 months?	88(21)	332(79)

Practice Level of Respondents about COVID-19 Prevention

The present finding reveals that majority (38.1%) of the respondents had a low practice and only 30.5% of them had high practice towards COVID-19 prevention (Figure 3).

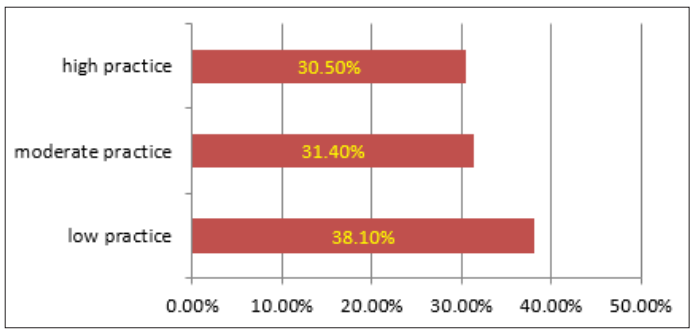

Figure 3: level of practice of Ilu Ababor and Buno Bedelle Zones households about COVID-19 prevention, 2020(n=420)

Pattern of disease among households in Ilu Ababor and Buno Bedelle Zones

The most prevalent (4.8%) chronic disease was Diabetes Mellitus (fig.4)

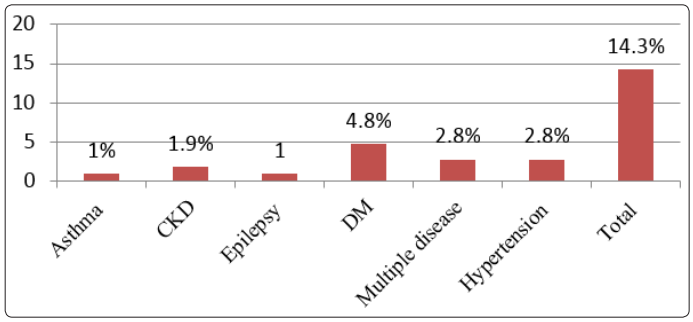

Figure 4: pattern of disease among households in Iluababor and Buno bedelle zones, 2020 (n=420)

Source of information of COVID-19 among selected households

The major (21.9%) source of information of COVID 19 was Medias like TV, Radios, etc...(fig.5)

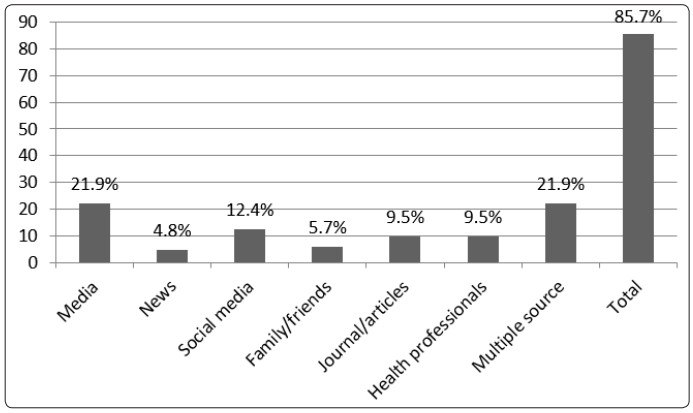

Figure 5: Source of information of COVID-19 among selected households in Ilu Ababor and Buno Bedelle zones,South West Ethiopia, 2020(n=420)

Factors Associated with knowledge of COVID-19

These results illustrate that male participants were scored more mean (M=0.79, SD=0.14) than female participants (M= 0.74, SD=0.17). The results of independent t- test also showed that a statistically significant difference was found based on Access to information; t (418) = 8.78, p<.001, d =0.8. These results suggest that participant who had information access was more knowledgeable (M=0.79, SD=0.13) than their counter parts (M =0.61, SD=0.19). The finding also revealed that there was statically significant mean score difference between participants who have hand washing facility (M=0.79, SD=0.13) and who have not (M= 0.73, SD=0.19); t (418) = 3.52, p<.001, d = 0.5. The magnitude of difference in mean was medium (d = .5). Significant difference was also found based on accessibility to hand sanitizers; t (418) = 4.15, p<.001, d = 0.1. These results illustrate that participants who accessed to face mask were scored more mean (M=0.81, SD=0.11) than participants who have no not accessed (M= 0.74, SD=0.17). Inferred that cigarette smoker (M= 0.63, SD=.19), Khat chewers (M= 0.71, SD=.23), and alcohol drinkers (M= 0.72, SD=.17) participants scored lower mean than their counterparts [(M = 0.79, SD=0.14) (M = 0.78, SD=0.13) (M = 0.78, SD=0.11)] respectively (Table 6).

Table 6: Independent sample t- test: Factors associated with knowledge of COVID-19 among Households in Ilu Ababor and Buno Bedele zones, Southwest Ethiopia, 2020 (n=420)

Variables	N	M(SD)	T	df	p	D
Sex						
Male	220	0.79(0.14)	4.13	418	<0.001	0.3
Female	200	0.74(0.17)				
Residence						
Urban	239	0.77(0.15)	0.597	418	0.551	0.06
Rural	181	0.76(0.18)				
Co-morbidity						
Yes	60	0.76(0.13)	-0.09	418	0.92	-0.01
No	360	0.77(0.20)				
Access to information						
Yes	360	0.79(0.13)	8.78	418	<0.001	0.8
No	60	0.61(0.19)				
Health insurance						
Yes	84	0.76(0.19)	-0.31	418	0.76	-0.01
No	336	0.77(0.14)				
Access to hand washing facility						
Yes	276	0.79(0.13)	3.52	418	<0.001	0.5
No	144	0.73(0.19)				
Access to hand sanitizers						
Yes	180	0.80(0.13)	4.15	418	<0.001	0.1
No	240	0.74(0.17)				
Access to face mask						
Yes	172	0.81(0.11)	4.70	418	<0.001	0.1
No	248	0.74(0.17)				
Smoking cigarette						
Yes	48	0.63(0.19)	-6.64	418	<0.001	-0.2
No	372	0.79(0.14)				
Chewing khat						
Yes	76	0.71(0.23)	-3.37	418	0.001	-0.2
No	344	0.78(0.13)				
Drinking alcohol						
Yes	88	0.72(0.17)	-3.65	418	<0.001	-0.1
No	332	0.78(0.15)				

Post-hoc comparisons using the Turkey's Honestly Significant Difference (HSD) test indicated that the mean score of participants between 21-30 age group (M =0.84, SD = 0.08) was statistically significant different from 41-50 years group (M =0.71, SD = 0.18) and greater than 50 years group (M = 0.73, SD = 0.18).In addition the mean score of participants between 31-40 age group (M =0.79, SD = 0.14) was statistically significant different from 41-50 years group (M =0.71, SD = 0.18) and >50 years (M=0.73, SD=0.18) but there is no statistically difference between other age groups. Further post hoc test showed the mean score of farmer (M=0.74, SD=0.15) was statistically significant different from government employee (S=0.84, SD=0.09) and students (M=0.88, SD=0.0.07). Similarly the mean score of government employee (M=0.84, SD=0.09) was statistically significant different from merchant (M=0.07, SD=0.16) and the mean score of student (M=0.88, SD=0.07) was statistically significant different from merchant (M=0.07, SD=0.16). ANOVA was also performed to compare mean difference by marital status of participants. The finding showed that there was mean score difference by marital status of participants $F(3, 416) = 24.20$, $p < .001$, $\eta 2 = .3$.

Post hoc test showed that the mean score of participants with no formal education (M=0.69, SD=0.19) was statistically significant different from participants with 1-8 grade (M=0.77, SD=0.13), diploma (M=0.78, SD=0.13) and degree holder (M=0.86, SD=0.09). In addition the mean score of participants with 1-8 grade (M=0.77, SD=0.13) was statistically significant different from participants with degree holder (M=0.86, SD=0.09).Similarly the mean score of participants with 9-12 grade (M=0.73, SD=0.18) was statistically

significant different from participants with degree holder (M=0.86, SD=0.09).and the mean score of participants with diploma (M=0.78, SD=0.13) was statistically significant different from participants with degree holder (M=0.86, SD=0.09). However, the other groups did not differ significantly from one another.

There was a statistically significant difference in mean scores among religions F (2, 417) = 14.81, p < .001, η2 = 0.4. Calculated eta squared indicated that the variance in mean score among groups was medium (η2 = 0.4). Post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test indicated that the mean score for participants with orthodox religion (M =0.8, SD = 0.14) was significantly different from participants with protestant religion (M =0.7, SD = 0.19). There is also significant difference between participants with Muslim religion (M =0.78, SD = 0.14 and protestant religion (M =0.7, SD = 0.19) but, there was no statistically significant difference in mean scores between orthodox and Muslim.

There was also statistical significance difference in mean score across average monthly income of participants F (3,416) = 4.04, p = .007, η2 = .3. Post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test indicated that the mean score for participants with average monthly income of <1000(M =0.72, SD = 0.21) was significantly different from participants with average monthly income of 1001-3000 (M =0.77, SD = 0.12) and 30001-5000 (M =0.79, SD = 0.14). But, there were significant difference between other groups. Generally there is no statistically significant difference between mean score of participants regarding family size (Table 7).

Table 7: Analysis of variance (ANOVA): Factors associated with knowledge of COVID-19 among Households in Ilu Ababor and Buno Bedele zones, Southwest Ethiopia, 2020 (n=420)

Variables	N	M(SD)	Df	F	P	η^2
Age(mean=41, SD=11.7)						
<20	16	0.79(0.16)	4,415	11.23	<0.001	0.3
21-30	80	0.84(0.08)				
31-40	136	0.79(0.14)				
41-50	92	0.71(0.18)				
>50	96	0.73(0.18)				
Occupation						
Farmer	80	0.74(0.15)	4,415	20.18	<0.001	0.2
Government employee	148	0.84(0.09)				
Student	12	0.88(0.07)				
Merchant	132	0.70(0.18)				
Others	48	0.74(0.160				
Marital status						
Single	68	0.85(0.08)	3,416	24.20	<0.001	0.3
Married	292	0.78(0.14)				
Divorced	40	0.66(0.21)				
Widowed	20	0.60(0.22)				
Family size						
<2	60	0.78(0.19)	2,417	0.20	0.816	0.5
2-4	168	0.77(0.15)				
>4	192	0.76(0.150				
Educational level						
No formal education	52	0.69(0.19)	5,414	11.09	<0.001	0.2
1-8	100	0.77(0.13)				
9-12	112	0.73(0.180				
Diploma	68	0.78(0.13)				
Degree	80	0.86(0.09)				
Masters	8	0.79(0.100				
Religion						
Orthodox	148	0.80(0.14)	2,417	14.81	<0.001	0.4
Protestant	100	0.70(0.19)				

Muslim	172	0.78(0.14)			_	
Income						
≤1000	104	0.72(0.210	3,416	4.04	0.007	0.3
1001-3000	184	0.77(0.12)				
3001-5000	108	0.79(0.14)				
>5000	24	0.77(0.11)				

Factors Associated with Attitude toward COVID-19

Independent t- test found that there was statistically significant difference was found between male participants and female participants; t (418) = 3.13, p =.002, d = 0.1. Participants who had information access were more favorable attitude (M=0.74, SD=0.13) than their counter parts (M =0.66, SD=0.14). Participants who accessed to face mask were scored more mean (M=0.76, SD=0.12) than participants who have no not accessed (M= 0.71, SD=0.14). Cigarette smoker (M= 0.66, SD=.09), Khat chewers (M= 0.68, SD=.10), and alcohol drinkers (M= 0.68, SD=.12) participants scored lower mean than their counterparts [(M = 0.74, SD=0.13) (M = 0.74, SD=0.13) (M = 0.74, SD=0.13)] respectively (Table 8).

Table 8: Independent sample t- test: Factors associated with Attitude towards COVID-19 among Households in Ilu Ababor and Buno Bedele zones, Southwest Ethiopia, 2020 (n=420)

Variables	N	M(SD)	Df	F	P	η^2
Sex						
Male	220	0.75(0.12)	3.13	418	0.002	0.1
Female	200	0.71(0.140				
Residence						
urban	239	0.74(0.13)	1.88	418	0.06	0.03
rural	181	0.71(0.13)				
Co-morbidity						
yes	60	0.74(0.12)	0.90	418	418	0.02
no	360	0.72(0.14)				
Access to information						
yes	360	0.74(0.13)	4.43	418	<0.001	0.9
no	60	0.66(0.14)				
Health insurance						
Yes	84	0.63(0.14)	-8.51	418	<0.001	-0.4
No	336	0.76(0.11)				
Access to hand washing facility						
Yes	276	0.74(0.13)	1.50	418	0.14	0.03
No	144	0.72(0.13)				
Access to hand sanitizers						
Yes	180	0.72(0.11)	-1.20	418	0.23	-0.02
No	240	0.74(0.14)				
Access to face mask						
Yes	172	0.76(0.12)	3.55	418	<0.001	0.5
No	248	0.71(0.14)				
Smoking cigarette						
Yes	48	0.66(0.09)	-3.62	418	<0.001	-0.1
No	372	0.74(0.13)				
Chewing khat						
Yes	76	0.68(0.10)	-3.72	418	<0.001	-0.5
No	344	0.74(0.13)				
Drinking alcohol						
Yes	88	0.68(0.12)	-4.50	418	<0.001	-0.4

A post hoc comparison to evaluate pair-wise differences among group means using Tukey HSD test revealed that mean score of 31-40 (M =0.71, SD = 0.11) age groups was statistically significantly different from >50 (M =0.78, SD = 0.13) age group as well as the mean score of 41-50 (M =0.71, SD = 0.14) statistically significant different from > 50 (M =0.78, SD = 0.13) age group but there is significant difference between others age group. ANOVA test also illustrated that there was statistically significant difference in attitude mean scores across the groups by occupation of participants F (4, 415) = 12.67, p < .001, η2 = 0.3. The mean score for married participants (M =0.74, SD = 0.12) was significantly different from divorced (M =0.65, SD = 0.14).But, there was no statistically significant difference in mean scores between other groups. There was also statistical significance difference in mean score across family size of participants F (2,417) =12.34, p < .001, η2 = .5. Post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test indicated that there was a statistically significant difference between the mean score orthodox religion and protestant as well as protestant and Muslim (Table 9).

Table 9: Analysis of variance (ANOVA): Factors associated with Attitude of COVID-19 among Households in Ilu Ababor and Buno Bedele zones, Southwest Ethiopia, 2020 (n=420)

Variables	N	M(SD)	Df	F	P	η^2
Age(mean=41, SD=11.7)						
<20	16	0.72(0.10)	4,415	4.07	0.001	0.3
21-30	80	0.75(0.15)				
31-40	136	0.71(0.110				
41-50	92	0.71(0.14)				
>50	96	0.78(0.130				
Occupation						
Farmer	80	0.73(0.14)	4,415	12.67	<0.001	0.3
Government employee	148	0.76(0.09)				
Student	12	0.78(0.09)				
Merchant	132	0.67(0.15)				
Others	48	0.79(0.13)				
Marital status						
Single	68	0.75(0.15)	3,416	5.84	0.001	0.3
Married	292	0.74(0.12)				
Divorced	40	0.65(0.14)				
Widowed	20	0.71(0.21)				
Family size						
<2	60	0.69(0.17)	2,417	12.34	<0.001	0.5
2-4	168	0.77(0.11)				
>4	192	0.71(0.14)				
Educational level						
No formal education	52	0.75(0.16)	5,414	1.47	0.20	0.2
1-8	100	0.71(0.13)				
9-12	112	0.7490.14)				
Diploma	68	0.72(0.14)				
Degree	80	0.75(0.10)				
Masters	8	0.70(0.04)				
Religion						
Orthodox	148	0.76(0.13)	2	19.93	<0.001	0.5
Protestant	100	0.66(0.12)				
Muslim	172	0.74(0.13)				
Income						
≤1000	104	0.71(0.16)	3	2.02	0.11	0.3
1001-3000	184	0.75(0.13)				
3001-5000	108	0.73(0.13)				
>5000	24	0.70(0.05)				

Factors Associated with Practice toward COVID-19

Independent t- test found that there was statistically significant difference was found between urban participants and rural participants; t (418) = 2.50, p=0.01, d = 0.5. The effect size for this analysis was found medium. These results illustrate that urban participants were scored more mean (M=0.68, SD=0.18) than rural participants (M= 0.63, SD=0.21). Statistically significant difference was also found based on having co-morbidity of participants; t (418) = 2.55, p=0.01, d = 0.8. The effect size for this analysis (d = -1.5) was found to exceed Cohen's d convection for large effect. These results illustrate that participants who have co-morbidity were scored higher mean (M=0.72, SD=0.14) than who have not co-morbidity (M= 0.65, SD=0.20).

The results of independent t- test also showed that a statistically significant difference was found based on Access to information; t (418) = 3.50, p =.001, d = 0.2. Computed Cohen's d using the value of t- test statistics revealed small effect based on Cohen's standard. These results suggest that participant who had information access were more practiced recommended covid-19 prevention measure (M=0.68, SD=0.20) than their counter parts (M =0.57, SD=0.19). The finding also revealed that there was statically significant mean score difference between participants who have health insurance (M=0.59, SD=0.21) and who have not (M= 0.68, SD=0.19); t (418) = 3.52, p<.001, d = -0.1.

Significant difference was also found based on accessibility to hand sanitizers; t (418) = 2.96, p =.003, d = 0.4. Significant difference was also found between participants who were accessed to face mask and who have not accessed; t (418) = 2.80, p =.005, d =0.6. The effect size for this analysis (d = 2) was medium effect. These results illustrate that participants who accessed to face mask were scored more mean (M=0.69, SD=0.16) than participants who have no not accessed (M= 0.64, SD=0.22). Mean score of participants was also statistically significant different based on cigarette smoking status; t (418) = -2.08, p =0.04 d = -0.5, khat chewing status: t (418) = -4.89, p =<0.001 d = -0.8 and drinking alcohol status (418) = -3.11, p =0.002 d = -0.2. Thus, it is inferred that cigarette smoker (M= 0.60, SD=.14), Khat chewers (M= 0.71, SD=.19), and alcohol drinkers (M= 0.60, SD=.15) participants scored lower mean than their counterparts [(M = 0.66, SD=0.20) (M = 0.68, SD=0.20) (M = 0.68, SD=0.20)] respectively (Table 10).

Table 10: Independent sample t- test: Factors associated with practice of COVID-19 among Households in Ilu Ababor and Buno Bedele zones, Southwest Ethiopia, 2020 (n=420)

Variables	N	M(SD)	Df	F	P	η^2
Sex						
Male	220	0.64(0.21)	-1.34	418	0.17	-0.05
Female	200	0.68(0.18)				
Residence						
urban	239	0.68(0.18)	2.50	418	0.01	0.5
rural	181	0.63(0.21)				
Co-morbidity						
yes	60	0.72(0.14)	2.55	418	0.01	0.8
no	360	0.65(0.20)				
Access to information						
yes	360	0.68(0.20)	3.50	418	0.001	0.2
no	60	0.57(0.19)				
Health insurance						
Yes	84	0.59(0.21)	-3.60	418	<0.001	-0.1
No	336	0.68(0.19)				
Access to hand washing facility						
Yes	276	0.67(0.20)	0.95	418	0.34	0.03
No	144	0.64(0.18)				
Access to hand sanitizers						
Yes	180	0.69(0.16)	2.96	418	0.003	0.4
No	240	0.63(0.22)				
Access to face mask						
Yes	172	0.69(0.16)	2.80	418	0.005	0.6
No	248	0.64(0.22)				
Smoking cigarette						

Yes	48	0.60(0.14)	-2.08	418	0.04	-0.5
No	372	0.66(0.20)				
Chewing khat						
Yes	76	0.56(0.19)	-4.89	418	<0.001	-0.8
No	344	0.68(0.20)				
Drinking alcohol						
Yes	88	0.60(0.15)	-3.11	418	0.002	-0.2
No	332	0.68(0.20)				

One way analysis of variance (AVOVA) revealed that there was a statistically significant difference in mean scores among age groups F (4,415) = 11.23, p < .001, η2 = 0.3. Even though the difference was statistically significant, effect size calculated using eta squared showed that the actual difference in mean scores between groups was low (η2 = .3). Post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test indicated that the mean score of participants between 21-30 age group (M =0.69, SD = 0.17) was statistically significant different from 41-50 years group (M =0.59, SD = 0.23) as well as the mean score of participants between 41-50 age group (M =0.59, SD = 0.23)was statistically significant different from >50 years age group (M =0.71, SD = 0.18) but there is no statistically difference between other age groups.

ANOVA also revealed that there was statistical significance difference in mean score across the Occupation F (4,415) = 10.02, p < .001, η^2 = 0.3. Calculated eta squared indicated that the variance in mean score among groups was low (η^2 0.3). Further post hoc test showed the mean score of farmer (M=0.58, SD=0.24) was statistically significant different from government employee (M=0.72, SD=0.16), students (M=0.83, SD=0.12) and merchant (M=0.65, SD=0.17). Similarly the mean score of government employee (M=0.72, SD=0.16), was statistically significant different from merchant (M=0.65, SD=0.17) and the mean score of student (M=0.83, SD=0.12) was statistically significant different from merchant (M=0.65, SD=0.17).

ANOVA was also performed to compare mean difference by educational level of participants. Even if there was mean score difference by educational status of participants F (5, 414) = 3.39, p <.001, η2 = .2, effect size calculated using eta squared was low (0.2). A post hoc comparison conducted with the use of Tukey HSD test revealed that there was only significance difference between group of participants with 1-8 grade (M=0.61, SD=0.23) and degree holder (M=0.71, SD=0.19). But, there was no statistically significant difference in mean scores between other groups.

ANOVA test also revealed that there was statistically significant difference in practice mean scores across the groups by average monthly income of participants F (3, 416) = 3.35, p=0.019, η2 = 0.3. Calculated eta squared indicated that the variance in mean score among groups was low (η^2 0.3). Post hoc test showed that the mean score of participants who earn <1000 EB (M=0.62, SD=0.24) was statistically significant different from participants who earn 1001-3000 EB (M=0.69, SD=0.18) .However, the other groups did not differ significantly from one another. There was also statistically significant difference in mean scores of practice and knowledge of participants F (2, 417) = 15.12, p < .001, η2 = 0.5. Calculated eta squared indicated that the variance in mean score among groups was medium (η^2 0.5). Post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test indicated that the mean score for participants with low knowledge (M =0.59, SD = 0.21) was significantly different from participants with moderate knowledge (M =0.67, SD = 0.19) and high knowledge (M =0.73, SD = 0.18).There is also significant difference between participants moderate knowledge (M =0.78, SD = 0.14 and high knowledge (M =0.7, SD = 0.19). In addition there was statistically significant difference in mean scores of practice and attitude of participants F (2, 417) = 27.76, p < .001, η2 = 0.5.Further the mean score for participants with low attitude (M =0.57, SD = 0.18) was significantly different from participants with moderate attitude (M =0.70, SD = 0.20) and high attitude (M =0.72, SD = 0.19) (Table 11).

Table 11: Analysis of variance (ANOVA): Factors associated with practice of COVID-19 among Households in Ilu Ababor and Buno Bedele zones, Southwest Ethiopia, 2020 (n=420)

Variables	N	M(SD)	Df	F	P	η^2
Age(mean=41, SD=11.7)						
<20	16	0.73(0.11)	4,415	5.21	<0.001	0.2
21-30	80	0.69(0.17)				
31-40	136	0.64(0.21)				
41-50	92	0.59(0.23)				
>50	96	0.71(0.18)				
Occupation						
Farmer	80	0.58(0.24)	4,415	10.02	<0.001	0.3
Government employee	148	0.72(0.16)				
Student	12	0.83(0.12)				
Merchant	132	0.65(0.17)				
Others	48	0.62(0.26)				
Marital status						
Single	68	0.67(0.18)	3,416	4.10	0.07	0.3
Married	292	0.68(0.21)				
Divorced	40	0.58(0.16)				
Widowed	20	0.58(0.15)				
Family size						
<2	60	0.72(0.16)	2,417	3.51	0.061	0.5
2-4	168	0.64(0.22)				
>4	192	0.66(0.20)				
Educational level						
No formal education	52	0.68(0.20)	5,414	3.39	0.005	0.2
1-8	100	0.61(0.23)				
9-12	112	0.64(0.20)				
Diploma	68	0.68(0.15)				
Degree	80	0.71(0.19)				
Masters	8	0.79(0.04)				
Religion						
Orthodox	148	0.72(0.19)	2,417	10.92	0.08	0.5
Protestant	100	0.60(0.21)				
Muslim	172	0.65(0.19)				
Income						
≤1000	104	0.62(0.24)	3,416	3.35	0.019	0.3
1001-3000	184	0.69(0.18)				
3001-5000	108	0.65(0.20)				
>5000	24	0.71(0.13)				

Discusion

This study revealed that, most of (41.9%) the respondents had moderate knowledge and 30.5% of them had high knowledge towards Prevention of COVID-19. It is much lower than study conducted in USA and China which showed that, 80% and 90% respectively of participants correctly responded to the questioner towards COVID-19 prevention [1,20].

The discrepancy may be due to differences in geographical location and sample size. It is much higher than study conducted in Qatar which indicated that, only 8.0%had accurate knowledge about all of the symptoms of SARS[25]. Again the differences might be due to differences in geographical location, study population and health policies of the localities.

However, this finding is consistent with a population-based survey conducted in Iran on Knowledge, Attitude and Practice toward the Novel Coronavirus (COVID-19) Outbreak showed that 22.6%, 46.5% and 30.9% of participants had Poor, Moderate, and high

knowledge respectively [22].

Regarding attitude majority (39%) of study participants have a moderate attitude and almost one third (33.3%) of them had a high attitude towards prevention of COVID-19. It is Similar with study conducted Among the Bordered Population of Northern Thailand which indicated that, 28.5% had poor attitudes toward disease prevention and control [15]. But it is higher than A Population-Based Survey conducted in Iran indicating that 31.4%, 60.8%, 7.8% of participants had Poor, Moderate, and high attitude respectively [2].

The present finding reveals that majority (38.1%) of the respondents had a low practice and only 30.5% of them had high practice towards COVID-19 prevention. But it is lower than study conducted in Iran which indicated that, majority (71.3%) of participants had moderate practice towards COVID-19 and only 16.7% of participants had excellent practice towards COVID-19[21]. The discrepancies might be due to differences in study settings and study population.

Being male, Access to information, accessibility to hand sanitizers, accessed to face mask, cigarette smoking status, khat chewing status, drinking alcohol status, age, occupation, marital status and educational status were significantly associated with high knowledge score on COVID-19 prevention. It is similar with study conducted in China, Northern Thailand and Iran [1, 8].

Conclusion

The finding of this study revealed that knowledge, attitude and practice towards prevention of COVID-19 were low. Greater numbers of respondents were not utilizing face masks and sanitizers. Majority of respondents had no hand washing facilities. Access to information, accessed to face mask, cigarette smoking status, khat chewing status, drinking alcohol status, age, occupation, and educational status were significantly associated with knowledge, attitude and practice of COVID-19 prevention. Based on the present finding it is recommended that health facilities in Ilu Ababor and Bunno Bedele Zones should work hardly to improve the awareness of communities towards COVID-19 Preventions. The Ethiopian government should avail hand sanitizer and face masks for the communities to improve their practice towards COVID-19 prevention. Health and Education sectors in Ilu Ababor and Bunno Bedele Zones should work collaboratively to tackle the contributing factors of COVID-19 prevention.

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