Community's Knowledge and Prevention Practice against COVID-19: North Showa Zone, Oromia Regional State, Ethiopia

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Abstract

Background: Coronavirus disease 2019 is caused by severe acute respiratory syndrome corona virus 2. In Ethiopia, the first case of the disease was reported on March 12, 2020. Since then the government has taken measures like suspending large gatherings, contact tracing, physical distancing, and frequent hand washing. However, there have been no studies that examined the status of knowledge and prevention practice of the community in North Showa zone, Oromia region, against COVID-19. Hence, this study aimed to assess the knowledge and prevention practice of the community against COVID-19.

Methods: A community-based cross-sectional study was conducted in the North Showa, Oromia region, from April 23-May 23, 2020. Data were collected from 633 community members using a pretested structured questionnaire. Multistage sampling technique was used to select participants. The data were entered into EpiData Version 4.4.6 and exported to Statistical Package for the Social Sciences Version 23 for analysis. Bivariate and multivariable logistic regression analyses were conducted to identify factors associated with knowledge and prevention practice against severe acute respiratory syndrome corona virus 2. A P-value less than 0.05 was considered statistically significant.

Results: Two hundred eighty-five (46.9 %) of the study participants had good knowledge against COVID-19, whereas only 106 (17.6%) of the respondents had good practice of preventive measures against COVID-19. Urban residents (AOR=2.65; 95% CI: 1.43, 4.92) were more likely to have good knowledge than their rural counterparts. Having good knowledge among uneducated study participants was lower by 81% (AOR=0.191; 95% CI: 0.07, 0.51) as compared to those who had a diploma or degree. The study participants that had no formal education at all were less likely to take preventive measures against COVID-19 (AOR=0.344; 95% CI: 0.12, 0.98), compared to those who had diploma or degree.

Conclusion: In this study, nearly half and one-fifth of the study participants had good knowledge and good practice of preventive measures against COVID-19, respectively. Hence, the zonal health office in collaboration with stake holders like Ethiopian Public Health Institutes and the Federal Ministry of Health should continue the provision of health information dissemination to the community members who are at risk.

Keywords: *Community; COVID-19; Knowledge; North Showa; Practice*

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Introduction

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome, Coronavirus 2 (SARS-CoV-2) (MayoClinic, 2019). It is believed that the virus is transmitted from person to person through direct or indirect contact with an infected person through respiratory droplets and long-range aerosols (Worldometer, 2020). The disease manifests as asymptomatic (mild) symptoms to a severe illness. Common clinical features of most patients included fever, cough, shortness of breath, and sore throat. Additionally, some patients may also present with physical weakness and respiratory distress (Medscape, 2020).

On March 11, 2020, the World Health Organization (WHO) declared it a worldwide pandemic. In Ethiopia, it reached 27,881 confirmed cases and 4,300 reported deaths at the end of June 2021. Despite, quarantine was taken as a preventive measure, it is becoming clear that quarantine alone may not be sufficient to

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prevent the spread of COVID-19 (Worldometer, 2020).

The government of Ethiopia has taken measures like suspending large gatherings (cultures and faith practices such as mass prayer gatherings, large weddings, and funerals), contact tracing and isolation, keeping physical distance, and frequent hand washing or cleaning. This effort is compounded by the spread of COVID-19 misinformation, including treatments or promotion of ineffective preventive behaviors (Vigdor, 2020). Public and social health measures must be implemented to slow or stop the spread of COVID-19 with the full participation of everyone in society. Measures to reduce the spread of COVID-19 include personal and environmental measures. These include case detection and isolation, contact screening and quarantine, social and physical distancing measures (including mass gatherings, foreign travel measures), vaccines, and treatments. Other public health and social measures play an essential role in reducing the number of infections and saving lives (WHO, 2020).

The global impact of COVID-19 infection is concerning and devastating, as the nature of this virus is not well researched and known. The lack of information about its natural process makes the disease widespread worldwide and reaches 222 countries and infects about 182 million people. Globally, 3,934,198 people died from the disease until June 2021 (Roda *et al.*, 2020, Worldometer, 2020).

Information on community knowledge and practice regarding the COVID-19 prevention mechanism is a primary concern in designing effective prevention and/or control measures. However, to our knowledge, no studies have examined the state of the COVID-19 community's knowledge and prevention practices in the North Showa area of the Oromia Region. Therefore, this study aimed to assess the knowledge and prevention practice of the community against COVID-19 in the North Showa Zone, Oromia Region, Ethiopia.

Materials and Methods

Study Setting, Design, and Period

A community-based cross-sectional study was conducted in the North Showa zone, Oromia region, Ethiopia, from April, 23 to May 23, 2020. Fitche town, the capital of the zone, is located 112 km to the north of Addis Ababa, the capital city of Ethiopia. Based on the 2007 national population and housing census estimation, the zone has a projected total population of about 1,962,558 people, of whom 978,414 are males. The majority of the population (89.75%) is rural residents. The zone has 521,506 households with an average household size of 4.57 members per household (CSA, 2008). The zone has five hospitals, 64 health centers, and 268 health posts.

Sample Size Determination

The sample size of the study was determined by a single population proportion formula, using 50% the proportion of knowledge and COVID-19 prevention practice, since there was no published data on the topic within the study area. Further, a margin of error of 5% (0.05) with a 95% level of confidence, a design effect of 1.5, and a 10% non-response rate was added. The final sample size for this study was 633.

Sampling Techniques

A multistage sampling technique was used to select participants for this study. First, the Zone was stratified into districts called woredas (13 in number) and town administrations (two-Fitche and Garba Guracha towns). Next, considering time and logistics constraints, four districts (≈30%, rule of thumb) and one town administration were selected by simple random sampling. Then, all the selected four districts were clustered by Kebeles (the smallest administrative unit having 5000 population on the average) and stratified into urban and rural Kebeles. Using a simple random sampling method, six rural kebeles and one urban kebele were selected from each selected district. Finally, the required number of households was proportionally allocated to each selected kebeles in the district and town administration. From selected households, the head of the house (mother or father) was interviewed.

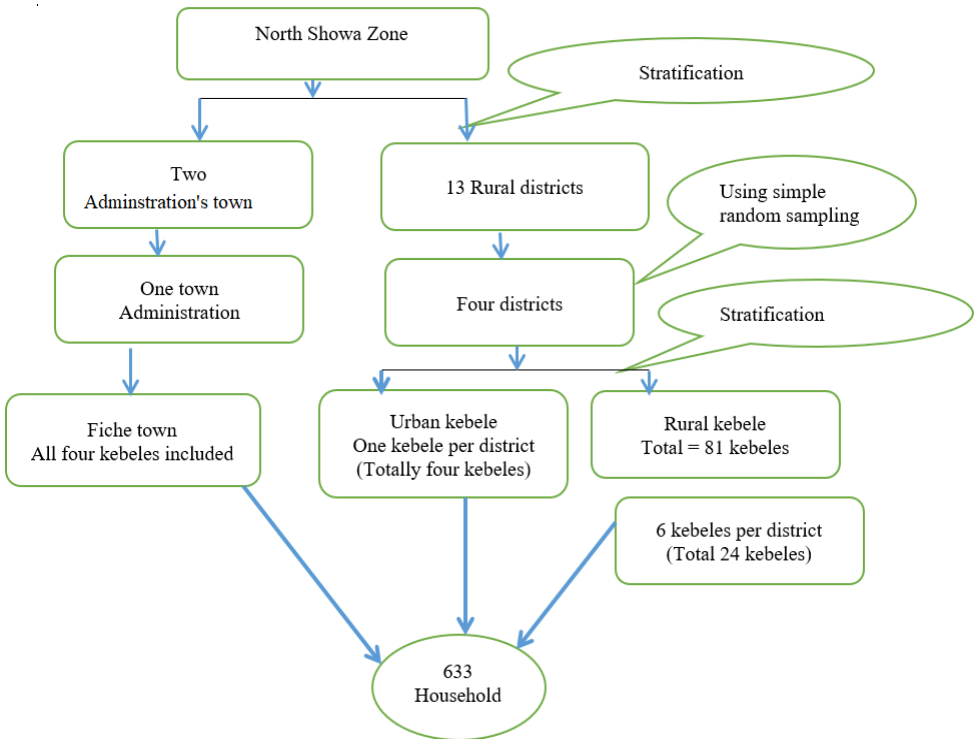

Figure 1: Shows sampling techniques of the study, North Showa, Oromia, Ethiopia, 2020.

Methods of Data Collection

Data were collected through face-to-face interviews with a pretested structured questionnaire by academic staff of Salale University. The questionnaire was developed after reviewing different literature (Naser et al., 2020, Zhong et al., 2020). It contains different parts which assessed the socio-demographic of the study participants, health system-related factors, knowledge, attitude, and prevention practice toward COVID-19. Seventeen recommended questions of knowledge about COVID-19 were used with "yes = 1" or ('no =0) responses and eleven recommended questions on prevention practice against COVID-19 were used.

Data Quality Assurance

The questionnaire was first prepared in English language and translated into Afaan Oromo and Amharic by language experts and translated back into English. Data collectors and supervisors were trained for two days on interviewing techniques, tools, objectives, and confidentiality. The questionnaire was pre-tested in Dagam district, which was out of the study area, on 10% of the sample size and necessary modifications were made accordingly. Further, data were checked for completeness before entry.

Operational Definition

COVID-19: short form "Corona Virus Disease 2019 which is the name of the disease caused new strain of coronavirus named the novel coronavirus or SARS-CoV-2" (WHO, 2020).

Data Processing and Analysis

Data were coded, cleaned, and entered into EpiData Version 4.4.6 and exported to Statistical Package for the Social Sciences Version 23 for further analysis. The knowledge and prevention practices of the study participants were assessed by a composite index of the questions. A simple count of correctly answered questions was considered and converted to percentages. From the 17 knowledge questions, the study participants who scored $\geq$ 75 % and < 75 % were considered having good and poor knowledge against COVID-19, respectively. From the 11 prevention practice questions, the study participants who scored $\geq$ 75 % and < 75 % were considered to have good and poor prevention practice against COVID-19, respectively. A binary logistic regression model was used to identify

factors associated with the knowledge and prevention practice of the respondents against COVID-19. The overall score for knowledge and prevention practice status was determined based on the composite index of questions. Simple counts of correctly answered questions were considered and then computed the percentages from the total questions for knowledge and prevention practice of Covid-19 separately. Descriptive and bivariate analyses were computed to see the frequency distribution and to test whether there is association between dependent variable and independent variables, respectively. Factors associated with the knowledge and preventive practice were determined using multivariable logistic regression analysis, controlling for potential confounding factors. A P-value less than 0.05 with a 95% confidence interval was considered as statistically significant.

Ethical Consideration

Ethical clearance was obtained from the Ethical Review Committee of Salale University. Official permission letter was taken from the administration office of North Showa Zone to the respective district and city administrations. Verbal consent was obtained from each study participant after a clear explanation of the purposes of the study. The confidentiality of the data was maintained by excluding names and keeping privacy during the interview.

RESULTS

Socio-demographic Characteristics of the Study Participants

A total of 608 heads of households participated in this study, representing a response rate of 96%. The mean age of the study participants was 41.7 (SD ±13.9) years. More than half, 331 (55%), were aged 30 to 49 years, followed by 155 (25.7%) aged 50 years and older. Nearly two-thirds of the study participants, 386 (63.6%), were urban dwellers and 461 (77.1%) were married. Twenty-nine percent were farmers, followed by merchants, 134 (22.1%). Furthermore, 39.6% of the respondents were illiterate and only 21.3% completed primary school. Over a third (36.7%) of heads of households had a family size of 4 to 5 members (Table 1).

Knowledge of Study Participants about COVID-19

The mean knowledge status about COVID-19 was 13.79 ± 3.142 (95% CI: 13.54- 14.04). Overall, 285 (46.9 %) (95%CI: 0.429- 0.509) of the study participants had good knowledge of the disease, and 70% said fever and cough/sneezing were the main COVID-19 sign and symptoms. Most of them (91.9%) replied cough/sneezing, having contact with infected surfaces (89.7%), handshaking, hugging, and kissing (94.2%) were the major ways of disease transmission (Table 2).

Table 1: Socio-demographic and economic characteristics of the community in North Showa Zone, Oromia Region, Ethiopia, 2020. (n=633).

Variables	Category	Frequency	Percent (%)
Study sites (Woreda)	Fitche	129	21.2
	Wara Jarso	115	18.9
	D/Libanos	137	22.5
	Hidhabu Abote	117	19.2
	Abichu Nya'a	110	18.1
Age	18-29	116	19.3
	30-49	331	55.0
	50+	155	25.7
	Mean age = 41.7, (SD ±13.9)		
Sex	Male	277	45.6
	Female	331	54.4
Residence	Urban	386	63.6
	Rural	221	36.4
Marital status	Married	461	77.1
	Single	40	6.7
	Widowed	59	9.9
	Divorced	38	6.4
Educational status	Unable to read and write	240	39.6
	Able to read and write	45	7.4
	Primary school	129	21.3
	Secondary school	105	17.3
	Diploma	47	7.8
	Degree or above	40	6.6
Occupation	Government employee	81	13.3
	Merchant	134	22.1
	Farmer	176	29.0
	Housewife	123	20.3
	Others *	93	15.3
Number of family size	1-3	187	30.8
	4-5	223	36.7
	6	197	32.35

Others: students, NGOs, daily laborers, handicrafts*

Table 2: Descriptive statistics of respondents' knowledge about COVID-19 in North Showa zone, Oromia region, Ethiopia, 2020. (N =633).

Variables		Frequency	Percent (%)
Ever heard about COVID-19	No	8	1.3
	Yes	595	98.7
COVID-19 a contagious disease	No	22	3.6
	Yes	581	96.4
Signs and symptoms of COVID-19	Fever	443	72.9
	Cough/sneezing	461	75.8
	Sore throat	269	44.2
	Body pain	123	20.2
	Shortness of breathing	249	41.0
	Headache	257	42.3
	Loss of taste/smell	27	4.4
	Chills	47	7.7
	I don't know	91	15.0
The action you take suspect yourself with COVID-19	Visit health care institutions	515	85.1
	Check body tempera-ture/fever	69	11.4
	Self-isolation	218	36.0
	Call emergency number	177	29.3
	Avoid unnecessary daily activities	41	6.8
	I don't know	48	7.9
Restricting contact with a suspected person can prevent COVID-19	No	52	8.6
	Yes	556	91.4
Use of sanitizer /Washing hands with soap can eliminate the virus	No	73	12.1
	Yes	530	87.9
The disease can transmit through cough/sneezing	No	49	8.1
	Yes	557	91.9
The disease can transmit through contact with infected surfaces	No	62	10.3
	Yes	539	89.7
The disease can be transmitted through hand shaking, hugging, or kissing an infected person	No	35	5.8
	Yes	570	94.2
The disease is more dangerous in people with weakened immune systems	No	60	9.9
	Yes	545	90.1
The disease is more dangerous for peoples with cancer, diabetes, and chronic respiratory diseases	No	51	8.4
	Yes	556	91.6
Drinking local alcohol can prevent COVID-19	No	449	74.5
	Yes	154	25.5

Prevention Practice of Community against COVID-19

The mean preventive practice against COVID-19 was 6.64 ± 2.261 (95% CI 6.46-6.82). Overall, only 106 (17.6%) (95% CI 0.146 – 0.206) of the study participants had good practice of preventive measures against the disease. Greater than 85% of the respondents reported contact restriction, using sanitizer, and washing their hands with water and soap as prevention mechanism. Nearly one-third, 240 (39.7%), of the household heads avoided going out of home, and 93.4% avoided handshaking, hugging, and kissing to prevent COVID-19. Of all the study subjects, 89.3% washed their hands with water and soap, 45% used disinfectants and solutions, and 33.2% wore face-mask only in crowded areas, whereas 61.7% had never used them (Table 3).

Factors Associated with Communities' Knowledge about COVID-19

In the bivariate analysis of knowledge about COVID-19, place of residence, woreda, education level, sex, age, marital status, occupation, family size, and source of information about the virus were significant and were candidates for multivariate analysis. In the multivariable analysis places of residence, occupation, family size, and education status were factors significantly associated with the respondents' knowledge of the disease. The odd of having good knowledge about COVID-19 was higher among the urban study participants than among rural ones (AOR=2.65; 95% CI: 1. 43, 4.92). The odds of good knowledge of COVID-19 among merchants were 2.18 times (AOR=2.179; 95% CI: 1.16, 4.10) higher than those working in the other sectors (students, NGO, daily laborer, handicraft). The odds of good knowledge were about 48% times lower among study participants with 1-3 family sizes than that of at least six family members (AOR=0.52; 95% CI: 0.30, 0.87). Moreover, no education (AOR=0.191; 95% CI: 0.07, 0.52), and only primary education (AOR=0.30; 95% CI: 0.11, 0.81) were associated with poor knowledge about COVID-19 compared to those with a diploma or degree holders (Table 4).

Table 3: Descriptive statistics of respondents' prevention practice against COVID-19 in North Showa zone, Oromia region, Ethiopia, 2020 (N =633).

Variables		Frequency	Percent (%)
Avoid going out of home	No	357	59.0
	Yes	240	39.7
	I don't know	8	1.3
Avoid unnecessary vacations	No	157	25.9
	Yes	438	72.2
	I don't know	12	2.0
Avoid handshaking, hugging, and Kissing	No	34	5.6
	Yes	568	93.4
	I don't know	6	1.0
Avoid public transportations (Bajaj, taxi, bus, train)	No	252	41.6
	Yes	338	55.8
	I don't know	16	2.6
Avoid going to work	No	369	61.1
	Yes	225	37.3
	I don't know	10	1.7
Frequently wash my hands with soap	No	57	9.4
	Yes	540	89.3
	I don't know	8	1.3
Use disinfectant and solutions	No	315	52.2
	Yes	272	45.1
	I don't know	16	2.7
Use herbal products and traditional medicine	No	404	66.9
	Yes	192	31.8
	I don't know	8	1.3
Take vitamin A supplements	No	445	73.4
	Yes	143	23.6
	I don't know	18	3.0

Table 4: Factors associated with communities' knowledge about COVID-19, in North Showa zone, Oromia region, Ethiopia, 2020. (N =633).

Variables	Categories	Knowledge		Crude (unadjusted)		Adjusted	
		Good	Poor				
		No (%)	No (%)	OR	95% CI	AOR	95% CI
Sex	Male	136 (47.7)	141(43.7)	0.85	0.62, 1.17	1.15	0.7, 1.84
	Female	149 (52.3)	182 (56.3)	1			
Residence	Urban	235 (82.5)	151 (46.9)	5.32	3.66, 7.75	2.65	1.43, 4.92
	Rural	50 (17.5)	171 (53.1)	1			
Age	18-29	65 (22.9)	51 (16.0)	2.32	1.42, 3.79	1.44	0.72, 2.88
	30-49	164 (57.7)	167 (52.5)	1.79	1.21, 2.65	1.27	0.77, 2.09
	50+	55 (19.4)	100 (31.4)	1			
Occupation	Government	60 (21.1)	21 (6.5)	2.68	1.41, 5.09	1.11	0.42, 2.89
	Merchant	83 (29.1)	51 (15.8)	1.53	0.89, 2.61	2.18	1.16, 4.09
	Farmer	41 (14.4)	135 (41.9)	0.29	0.17, 0.49	1.13	0.52, 2.45
	house wife	53 (18.6)	70 (21.7)	0.71	0.41, 1.22	1.53	0.76, 3.10
	Others*	48 (16.8)	45 (14.0)	1			
Family size	1-3	81 (28.5)	106 (32.8)	1.07	1.02, 1.61	0.52	0.30, 0.87
	4-5	121 (42.6)	102 (31.6)	1.66	1.13, 2.45	1.05	0.64, 1.71
	6+	82 (28.9)	115 (35.6)	1			
TV/Radio as sources of information	No	13 (4.6)	60 (18.6)	0.21	0.11, 0.39	0.58	0.28, 1.20
	Yes	272 (95.4)	263 (81.4)	1			
Health care providers as sources of information	No	231 (81.1)	261 (80.8)	1.02	0.68, 1.52	1.05	0.62, 1.77
	Yes	54 (18.9)	62 (19.2)	1			
Health care education	No	176 (84.6)	184 (83.6)	0.43	0.22, 0.84	0.71	0.32, 1.59
	Yes	32 (15.4)	36 (16.4)	1			
Woreda	Fitche	87 (30.5)	42 (13.0)	2.31	1.37, 3.91	1.50	0.77, 2.93
	Hidhabu Abote	43 (15.1)	74 (22.9)	0.65	0.38, 1.10	0.64	0.034, 1.22
	Wara Jarso	51 (17.9)	64 (19.8)	0.89	0.53, 1.50	0.86	0.45, 1.67
	Dabra Libanos	52 (18.2)	85 (26.3)	0.68	0.41, 1.14	0.99	0.52, 1.89
	Abichu Nya'a	52 (18.2)	58 (18.0)	1			
Education	No education	81 (28.5)	204 (63.4)	0.10	0.06, 0.19	0.19	0.07, 0.52
	Primary	61 (21.5)	68 (21.1)	0.23	0.13, 0.44	0.30	0.11, 0.81
	Secondary	73 (25.7)	32 (9.9)	0.60	0.31, 1.16	0.58	0.21, 1.61
	Diploma/degree	69 (24.3)	18 (5.6)	1			
Marital status	Married	211 (75.1)	250 (78.9)	0.81	0.55, 1.13	0.60	0.33, 1.08
	Single/Divorced/Widowed	70 (24.9)	67 (21.1)	1			
Over-all		285 (46.9)	348 (53.1)				

95% CI for over-all prevalence of good knowledge about covid-19 = 0.429- 0.509

*Others*student, NGO, daily laborer, handicraft.*

Factors Associated with Prevention Practice against COVID-19

In the bivariate analysis; woreda, place of residence, family size, occupation, age, level of education, source of information and knowledge about COVID-19, marital status, sex, and visits to a health facility within the last 30 days were significantly associated factors and candidates for multivariable analysis. In the multivariable analysis, district, age, educational status, sex, and knowledge about COVID-19 were significantly associated with the prevention practice of the household heads. The study participants who had no education were 66% less likely to practice the preventive measures (AOR=0.34; 95% CI: 0.12, 0.98) compared to a diploma or degree holders. Moreover, the odds of good practice of the preventive measures among study participants aged 30-49 years old were lower (AOR=0.39; 95% CI: 0.20, 0.74) as compared to those 50 or older. Furthermore, the study participants with

poor knowledge (AOR=0.35; 95% CI: 0.19, 0.62) were less likely to practice preventive measures. Being male had significantly lower odds of good practice (AOR=0.50; 95% CI: 0.27, 0.93) compared to females (Table5).

Table 5: Factors associated with communities' prevention practice against COVID-19, in North Showa zone, Oromia region, Ethiopia, 2020 (N =633).

Variables	Categories	Frequency	Preventive Practice		Adjusted Odds Ratio	
			Good No (%)	Poor No (%)	AOR	95% CI
Woreda	Fitche	129	42 (39.6)	87 (17.5)	3.85	1.59, 9.33
	Hidhabu Abote	117	23 (21.7)	93 (18.8)	3.94	1.57,9.92
	Wara Jarso	115	10 (9.4)	102 (20.6)	1.01	0.35, 2.91
	Dabra Libanos	137	22 (20.8)	114 (23.0)	2.54	1.00, 6.47
	Abichu Nya'a	110	9 (8.5)	100 (20.2)	1	
Residence	Urban	386	89 (84.0)	295 (59.6)	1.68	0.70, 4.00
	Rural	221	17 (16.0)	200 (40.4)	1	
Family size	1-3	187	31 (29.2)	152 (30.7)	0.54	0.27,1.08
	4-5	223	41 (38.7)	181 (36.6)	0.76	0.41, 1.41
	6+	197	34 (32.1)	162 (32.7)	1	
Occupation	Government	81	31 (29.2)	50 (10.1)	0.95	0.36, 2.51
	Merchant	134	18 (17.0)	116 (23.4)	0.46	0.21, 1.03
	Farmer	176	11 (10.4)	163 (32.9)	0.51	0.18, 1.50
	house wife	123	24 (22.6)	97 (19.6)	0.84	0.35, 2.00
	Others**	93	22 (20.8)	69 (13.9)	1	
Age	18-29	116	24 (22.9)	92 (18.7)	0.49	0.21, 1.18
	30-49	331	54 (51.4)	274 (55.8)	0.39	0.20, 0.74
	50+	155	27 (25.7)	125 (25.5)	1	
Social media as sources of information	No	488	77 (72.6)	433 (87.5)	0.60	0.30, 1.20
	Yes	89	29 (27.4)	62 (12.5)	1	
TV/Radio as sources of information	No	73	5 (4.7)	65 (13.1)	0.83	0.28, 2.47
	Yes	505	101 (95.3)	431 (86.9)	1	
HEWs visits	No	447	91 (87.5)	374 (77.8)	1.46	0.71, 2.99
	Yes	114	13 (12.5)	107 (22.2)		
Health care education	No	540	70 (86.4)	288 (83.5)	1.73	0.67, 4.45
	Yes	68	11 (13.6)	57 (16.5)	1	
Education	No education	285	31 (29.2)	249 (50.4)	0.34	0.12, 0.98
	Primary	129	21 (19.8)	108 (21.9)	0.72	0.26, 1.99
	Secondary	105	20 (18.9)	84 (17.0)	0.55	0.20, 1.50
	Diploma/degree	87	34 (32.1)	53 (10.7)	1	
Marital status	Married	461	86 (81.1)	372 (76.5)	1.61	0.82, 3.14
	Single/divorced/widowed	137	20 (18.9)	114 (23.5)	1	
Knowledge about COVID-19	Poor	323	17 (16)	168 (33.9)	0.35	0.19, 0.62
	Good	285	89 (84)	328 (66.1)	1	
Visited health facilities within the last 30 days	No	435	83 (78.3)	368 (74.3)	1.15	0.63, 2.13
	Yes	141	23 (21.7)	127 (25.7)	1	
Health care providers as sources of information	No	468	87 (82.1)	399 (80.4)	1.32	0.66, 2.66
	Yes	110	19 (17.9)	97 (19.6)	1	
Sex	Male	277	41 (38.7)	236 (47.6)	0.50	0.27, 0.93
	Female	331	65 (61.3)	260 (52.4)	1	
Over-all		633	106 (17.4)	527 (82.6)		

**The overall prevalence of good practice towards Covid-19 = 0.146 – 0.206 (95% CI)*

***Others students, NGO, daily laborer, handicraft*

DISCUSSION

In this study, the overall good knowledge status of the study participants was 46.9 % (95% CI: 0.429- 0.509). It is lower compared to other studies; reported 66.1% (Naser *et al.*, 2020), and 90% good knowledge (Zhong *et al.,* 2020). This difference might be due to study population differences in access to information and education status. In the current study, more than 70% of the study participants mentioned fever and cough/sneezing were the main COVID-19 signs and symptoms. In addition to this, 9 from 10 of the study participants mentioned that cough/sneezing, having contact with infected surfaces, hand shaking, hugging, and kissing were the major ways of the disease transmission. This finding is comparable with the study done in Singapore, Italy, and China; which identified cough, fever, and breathing difficulties as common COVID-19 symptoms and coughing, sneezing, touching contaminated surfaces, or close personal contact as common modes of COVID-19 transmission (Lim *et al*., 2021).

This study revealed that urban residents and merchants were more likely to have good knowledge than rural residents and others (student, NGO, daily laborer, and handicraft workers) respectively. Uneducated study participants had lower knowledge of COVID-19 than a diploma or degree holder. This study finding is similar to other studies in which formal educational status was associated with higher knowledge about COVID-19 (Nwafor *et al*., 2020, Abdelhafiz *et al*., 2020). In addition, rural residents were associated with lower knowledge of the disease (Abdelhafiz *et al*., 2020). The possible reasons for these differences could be urban residents had relatively better exposure to information and could have had chances to observe the real situations of COVID-19. It is the same for educated people because they do have the opportunity to read and further search about COVID-19. Because of the nature of their job, merchants (relatively earned high income) can access information from multiple sources about the virus.

In this study, only 17.6% of study participants had good practice of preventive measures against COVID-19. In contrast, in the study conducted in India, 83.8% had good prevention practices (Tomar *et al*., 2021). This difference might be due to the respondents' difference in socioeconomic status, awareness, and safety materials may not be available and affordable.

In this study, about 33.2% of the subjects used face masks only in crowded areas, whereas according to the study done in Saudi Arabia, 47.5% used face masks in crowded areas (Al Naam *et al.*, 2021). This difference might be due to the study time, place, trend of case flow, and socioeconomic and educational status differences among study subjects.

In this study, the participants who had no education at all were less likely to practice preventive measures against COVID-19 compared to the diploma or degree holders. Those study participants aged 30-49 years old had low prevention practices against the virus than those 50 or higher years old. Furthermore, those study participants with poor knowledge about COVID-19 and males had a low practice of preventive measures. The findings are comparable with the study done in Iran; reported lower age, being male, and lower level of education were significantly associated with lower prevention practice of COVID-19 (Erfani *et al*., 2020). Females have more concern about their family health and safety than males. Elders pay due attention to their health than the young since the risk of the diseases is higher among older age groups. Educated individuals can easily understand the burden of the disease and they could have better access to personal protective equipment than uneducated individuals.

Conclusion

In this study, nearly half of the study participants had good knowledge of COVID-19, whereas nearly one-fifth had good practice of preventive measures. Study participants residing in rural areas had significantly lower knowledge about COVID-19. Further, no or lower levels of educational status, younger age, and poor knowledge about the disease were significantly associated with poor prevention practice. Therefore; the North Showa Zone health office, regional government, and collaborating stakeholders should continue health information dissemination to the community about transmission and prevention of COVID-19 by focusing on the young who can be the source of infection to the population at risk.

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Competing Interests

The authors declare that there is no conflict of interest

Authors' Contribution

All authors designed the study, were involved in analysis, interpretation, and write-up, drafted the manuscript, and critically revised it. All authors read and approved the final manuscript

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