

Assessment of Knowledge, Attitude and Prevention Practices of Farmers Toward COVID-19 Pandemic in the Central Highland of Ethiopia

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Abstract: COVID-19 is an emerging contagious viral disease caused by SARS-CoV-2 that threatens and disturbs humanity. A cross-sectional study was conducted in three districts of the central highlands of Ethiopia from July 2020 to September 2020 to assess the knowledge, attitude, and prevention practices of the farmers toward the COVID-19 pandemic. A total of 131 respondents were participated in the present study of which 37.8% (49) were from Ada'a Berga, 31.3% (41) from Ejere, and 31.3% (41) from Walmara district. Majority of the study participants 86.3% (113) were male, whereas 77.1% (101) were between ages 18–39 years with an average age of 45.34 ± 1.079 . All present study participant has heard about COVID-19 cases in which 91.6% (120) of them get information from mass media whereas 6.9% (9) of them from family and friends. In the present study, 90% (95% CI: 83.67-94.05%) of the respondents have good knowledge about the COVID-19 pandemic. Based on the computation of multivariable logistic regression, only occupation of the study participants showed statistically significant association with knowledge level about COVID-19 pandemic ($p < 0.05$). The odds value of poor knowledge for respondents relying on agricultural activities was 23 times more when compared with government employees. Concerned with prevention practice of COVID-19, 57.3% (75) and 71% (93) of the respondents said that frequent hand washing for 20 seconds and avoiding handshaking are essential to prevent COVID-19 infection respectively. Even though the present study participants have good knowledge and attitude toward COVID-19, they are practicing poorly for which they may be affected negatively. Therefore, implementation of one health approach to utilize different knowledge source materials and man powers is important to combat COVID-19.

Keywords: COVID-19, Ethiopia, Knowledge, Pandemic, SARS-CoV-2

1. Introduction

Always, there is a risk of developing a new infectious disease [9]. The outbreak of Spanish flu in 1918 and the case of AIDS are the major deadliest infectious diseases in history with no known definitive cure [20]. COVID-19 is a contagious viral disease that threatens and disturbed humanity. The first case of COVID-19 was reported by World Health Organization on December 31, 2019 from the territory of China in Wuhan and later announced as a global pandemic on 11th March, 2020 [14]. As with all past pandemics, the specific mechanism of its emergence in

humans remains unknown [15]. The outbreak of COVID-19 led to the closure of public confluences, interruption of public transportation, isolation and management of infected persons, shutdown of giant companies with the aim of preventing its spreading and to minimize the level of loss inflicted by this disease [22].

COVID-19 is an emerging coronavirus disease caused by SARS-CoV-2, initially expressed as pneumonia of unknown origin, thus posing a significant threat to public health across the globe [7]. Different data source illustrates that the new virus, SARS-CoV-2, evolved directly or indirectly from a β -coronavirus in the sarbecovirus (SARS-like virus) group that

naturally infects bats and pangolins in Asia and Southeast Asia [15]. Evidence to date from virus genome sequencing and evolutionary analysis suggests that SARS-CoV-2 originated from bat populations, and thus, transmission to humans was possible either directly from bats to humans or indirectly through an unknown intermediate host [19]. Since the first occurrence of COVID-19, the report of globally confirmed cases of infection with this new virus has had an alarming growth [20]. At the time of writing this paper (November 3rd, 2020), over 47 million of COVID-19 cases have been reported worldwide causing 1.21 million deaths (<https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>). In Ethiopia, the first confirmed case of COVID-19 was reported on March 13, 2020, in Addis Ababa. As of November 5, 2020, a total of 97881 confirmed cases and 1503 death recorded due to COVID-19 pandemic (<https://www.worldometers.info/coronavirus/country/ethiopia/>).

Starting from the date of the first case report, the infection has been spreading to all parts of the country with considerable speed [11]. The Coronavirus pandemic has become the most challenging health emergency in generations, as it has already impacted on the capacity of health infrastructure and has dramatically affected the local and global economies [19]. As the SARS-CoV-2 virus has spread around the globe, concerns have shifted from supply-side manufacturing issues to decreased business in the services sector [18]. The pandemic also affected major sporting events, agricultural activities, manufacturing, art and entertainment, tourism and technology all over the world [12]. All age groups can get affected by this disease, but its severity is higher among the aged and those with underlying chronic diseases [6].

COVID-19 mainly spreads through the air from person to person via small droplets or aerosols, as an infected person breathes cough, sneezes, sings, or speaks. The clinical presentation of COVID-19 includes fever, fatigue, dry cough, malaise, and breathing difficulty [1]. To date, there is no clinically approved antiviral drug available to be used against COVID-19. However, few broad-spectrum antiviral drugs have been tested against COVID-19 in clinical trials, which resulted in clinical recovery [19]. Appropriate preventive measures for the COVID-19 pandemic include hand washing, covering one's mouth when coughing, maintaining distance from other people, wearing a face mask in public settings, and monitoring and self-isolation from people who suspect they are infected (<https://en.wikipedia.org/wiki/COVID-19-pandemic>).

One Health approach is also essential in financially constrained settings as it allows cost-sharing in an interdisciplinary field within responsible institutions and through the collaboration of multiple sectors, which help in controlling the disease and will lessen the social and economic impact of the COVID-19 pandemic [16]. In Ethiopia, numerous veterinary institutions and veterinarians were actively involved in the campaign of mass diagnosis of COVID-19 pandemic to surmount their national and ethical responsibilities aiming to tackle the spread of the infection.

However, the majority of the peoples in the rural area of Ethiopia do not have accesses to a major media outlet through which the national health authority passes the appropriate preventive and control measures of COVID-19.

Additionally, internet coverage and access to social media are very poor among the farmers so that they will not obtain timely and updated information about this emerging infectious disease. Thus, the present study was conducted to assess the knowledge, attitude, and preventive measures practiced by farmers in the study districts and to appreciate any existing gaps among the farmers on how they accept and use any available information to mitigate the spread of COVID-19 outbreak.

2. Materials and Method

2.1. Description of the Study Area

The current study was conducted in Walmara, Ada'a barga and Ejere districts of West Shewa Zone of Oromia. West shewa is located in the central highlands of the country between 9°09'60.00"N latitude and 37°49'59.99"E and longitude. It is divided into 18 districts and 1 urban local administration [2]. This zone is bordered on the south by the South West Shewa Zone and the Southern Nations, Nationalities and Peoples Region, on the southwest by Jimma, on the west by East Wellega, on the northwest by Horo Gudru Wellega, on the north by the Amhara Region, on the northeast by North Shewa, and on the East by Oromia Special Zone Surrounding Finfinne.

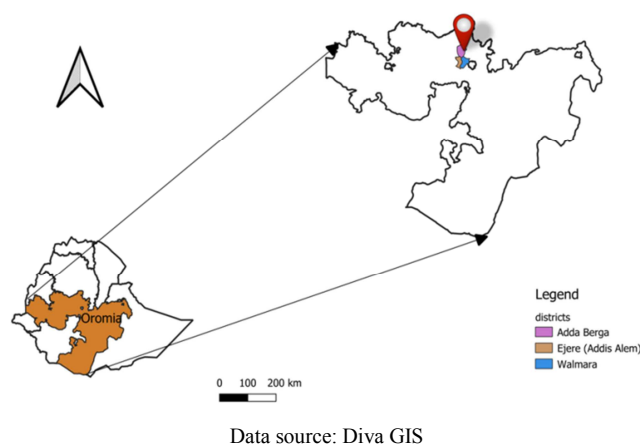


Figure 1. Map showing the study area.

The altitude of the zone ranges from 1166-3386 meters above sea level (masl), and most areas lie between 2300 and 2630 masl. The topography of the zone is flat which makes it an ideal place for agriculture with mean annual temperature and rainfall ranging from 11-21°C and 880-1200 mm, respectively. Crop-livestock mixed farming system is a common practice in this zone. Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSA), this Zone has a total population of 2,058,676, of whom 1,028,501 are men and 1,030,175 women.

2.2. Study Design and Population

A cross-sectional study was conducted to assess the knowledge, attitude, and prevention practices of the farmers toward COVID-19 pandemic. It was also implemented to uncover the existing gap for the widespread occurrence of this strange emerging pandemic. A purposive sampling technique was employed to select the study districts. Households were also selected purposively based on the ownership of cross-breed dairy cows provided by Holeta Agricultural Research Center dairy farms. Before commencing the implementation of this survey, permission of the respondents was sought to confirm that they were volunteers to be part of the study. Preceded by self-introduction and description of the study aim, semi structured questionnaire was administered to each respondent to access their knowledge, attitude, and prevention practices toward the COVID-19 pandemic.

2.3. Data Collection Procedure

The data were collected using a pretested, semi structured questionnaire administered by a team of researchers. The contents of the questionnaire were socio-demographic characteristics, travel history, awareness level, and KAP towards COVID-19. Ten questions were used to access the knowledge of the respondents toward COVID-19 pandemic which were answered on the basis of true/false. A correct answer was assigned 1 point and an incorrect answer was assigned 0 point. The total knowledge score ranged from zero to ten. Participants' overall knowledge was categorized using Bloom's cut-off point, as good if the score was between 80 and 100% (8-10), moderate if the score was between 60 and 79% (6-7.9 points), and poor if the score was less than 60% (<6 points) according to (Yonas *et al*, 2020). The same procedure was employed to access the attitude and practice of the society toward COVID-19 pandemic.

2.4. Data Analysis

Data collected for the present study was recorded into Microsoft Excel spread sheet and analyzed using SPSS V.20. Frequency means and multivariate logistic regression analysis was conducted to see the association between demographic profiles and knowledge scores and finally presented using tables and charts. At $p < 0.05$, statistical significance was set in all tests.

3. Result

3.1. Socio-demographic Characteristics of the Study Participants

A total of 131 respondents were participated in the present study of which 37.8% were from Ada'a Berga, 31.3% from Ejere, and 31.3% from Walmara district. Majority of the present study participants are male (86.3%) and 77.1% are between the ages 18-39 years with an average age of 45.34 + 1.079. About 45% of the respondents had a primary and

above academic background, and 80.9% of them were married. Additionally, 77.9% of them were relied only on agricultural activities (Table 1).

Table 1. Demographic Profile of Study Participants.

Variables	Category	Frequency	Percentage (%)
Districts	Ada'a Barga	49	37.4
	Ejere	41	31.3
	Walmara	41	31.3
Gender	Male	113	86.3
	Female	18	13.7
Age	18-29	21	16
	30-59	101	77.1
	>=60	9	6.9
Marital Status	Married	106	80.9
	Unmarried	11	8.4
	Divorced	14	10.7
Academic status	Primary and above	59	45
	Read and write	48	36.6
	Illiterate	24	18.3
Occupation	Trade	2	1.5
	Employee	16	12.2
	Agriculture	102	77.9
	Trade and Agriculture	2	1.5
	Employee and Agriculture	9	6.9

3.2. Information on COVID-19 Crisis Among the Study Farmers

In the present study, all respondents (100%) have heard about COVID-19 cases of which 3% had travel history. In Addition, about 91.6% (120) of them got information about COVID-19 from mass media, whereas 6.9% (9) obtained it from family and friends. In the current study, it has also observed that the majority, 95.4% (125) of them were not trained about this disease and about 2.3% (3) of the respondents witnessed the occurrence confirmed cases of COVID-19 in their community. Concerned with the test and diagnostic services, only 6.9% (9) of the respondents have got an opportunity to get checked for this devastating pandemic disease. Based on the response of 58.8% (77) of the present study participants, the older peoples are the most affected groups by COVID-19 pandemic.

3.3. Milk and Meat Consumption Characteristics of the Study Farmers Post-COVID-19 Pandemic

Post-COVID-19 pandemic, meat, milk, and milk product consumption of the respondents was also accessed in the present study. Consequently, 37.4% (49) of the respondents consume raw milk, whereas 42% (55) report that they boil/pasteurize milk and milk products before consumption following COVID-19 outbreak. The degree of milk and milk product consumption was also accessed in the present study to evaluate its status after the outbreak of COVID-19.

As a result, 65.6% (86) of the study participants said that milk and milk product consumption remained the same as it was before the occurrence of COVID-19 pandemic. However, 29% (38) of them responded that consumption of milk and milk product was decreased post COVID-19 outbreak. In the present study, 55.7% (73) of the study participant know that, this disease can be transmitted from animals to humans through consumption of raw milk whereas 44.3% (58) do not know. Meat consumption status of the respondents was also accessed and 75.6% (99) of them reported that, they didn't stop meat consumption post COVID-19 outbreak. Additionally, 68.7% (90) of them eat meat only after thoroughly cooking whereas 3.1% (4) eat raw meat. Based on the inquiry about the status of meat consumption post COVID-19 pandemic, 24.4% (32) of the respondent claim that, it was decreased whereas 49.6% (65) told it remained the same as it was before the outbreak of COVID-19.

3.4. Knowledge of COVID-19 Pandemic Among the Study Participants

In the present study, 90% (95% CI: 83.67-94.05%) of the respondent have an overall good knowledge about COVID-19 pandemic. However, 5.34% (95% CI: 44.88-61.72%) of them has poor knowledge about COVID-19. Based on the computation of multivariable logistic regression, only occupation of the study participants showed statistically significant association with knowledge level about COVID-19 pandemic ($p < 0.05$). The odd of poor knowledge for respondents relying on agricultural activity was 23 times more when compared with government employee. As it was indicated in table 3, the participants of the present study do have an ample of knowledge about COVID-19 symptoms, incubation period, transmission route and appropriate prevention measure of the disease. However, 90.1% (118) of the present study participant incorrectly consider proper use of mask as not important to prevent the infection of COVID-19.

Table 2. Knowledge about COVID-19 transmission among the participants ($n = 131$).

Knowledge Items	Yes	No
Do you think that	No (%)	No (%)
The main clinical symptoms of COVID-19 are cough, fever shortness of breath, fatigue	109 (83.2)	22 (16.8)
The symptoms of COVID-19 appear after months	77 (58.8)	54 (41.2)
There is an effective treatment or vaccine for COVID-19	100 (76.3)	31 (23.7)
Touching or shaking hands of an infected person would transmit infection of COVID-19 virus	126 (96.2)	5 (3.8)
Touching an object with virus on it, then touching face with the unwashed hand would result in the infection by COVID-19	123 (93.9)	8 (6.1)
COVID-19 virus spreads via droplet and during sneezing or coughing of infected person.	123 (93.9)	8 (6.1)
proper use of mask is not important to prevent the infection with COVID-19	118 (90.1)	13 (9.9)
Individuals should avoid going to crowded places such as public transportation, religious places, Hospitals and work places to avoid infection with COVID-19.	126 (96.2)	5 (3.8)
Proper hand washing and using sanitizer are important to prevent infection with COVID-19.	127 (96.9)	4 (3.1)
Isolation and treatment of infected peoples are effective way to reduce the spread of SARC-CoV-2	126 (96.2)	5 (3.8)
The overall level of knowledge		
Good	118 (90)	
Moderate	4.6 (6)	
Poor	7 (5.34)	

3.5. Attitudes and Practice of the Study Farmers Towards COVID-19

Ten different questions were used to assess the attitude and practice of the participant toward COVID-19 pandemic. The questions focus on the perception and attitude of the study participant toward major preventive measure supposed to be

appropriate. As a result, 57.3% and 71% of the respondent said that frequent hand washing for 20 second and avoiding handshaking are highly important to prevent COVID-19 infection respectively. Overall, majority of the present study participant have a positive attitude toward major preventive measures (Table 3).

Table 3. Attitude of the study farmers toward COVID-19 pandemic.

Attitude	High	Moderate	Low
How much do you think the following habits are important to prevent infection?	No (%)	No (%)	No (%)
Washing hands frequently for 20 seconds with soap or using sanitizer	75 (57.3)	41 (31.3)	15 (11.5)
Avoiding touching face with unwashed hands	35 (26.7)	65 (49.6)	31 (23.7)
Avoiding handshaking others	93 (71.0)	32 (24.4)	6 (4.6)
Avoiding attending in a crowded population	48 (36.6)	66 (50.4)	17 (13)
Maintaining physical distance	46 (35.1)	61 (46.6)	24 (18.3)
Covering mouth or nose during coughing or sneeze with elbow/ a tissue	48 (36.6)	53 (40.5)	30 (22.9)
Avoiding close contact with sick people	66 (50.4)	41 (31.3)	24 (18.3)
Using a mask when leaving home	56 (42.7)	37 (28.2)	38 (29.0)
Listening and following the direction of state and local authority.	60 (45.8)	48 (36.6)	23 (17.6)
Isolating oneself, if get sick to avoid the spread.	60 (45.8)	44 (33.6)	27 (20.6)

In the present study, majority of the participant respond that, they practice those preventive measure supposed to be important to combat COVID-19 and avoid exercising those predisposing factors. However, 79.4% (104) of the respondent told that, they continued to participate in meeting,

religious activities, events, and other social gathering post COVID-19. Frequent washing of hands with soap and water for at least 20 seconds or use of commercial sanitizer was also practiced by 88.5% (116) in the present study after the occurrence of COVID-19 (Table 4).

Table 4. Assessing the practice of the study farmers post COVID-19 pandemic (n =131).

Practice Items	Practiced	Not practiced
	No (%)	No (%)
Participation in meetings, religious activities, events, and other social gathering post COVID-19	104 (79.4)	27 (20.6)
Proper use of masks when leaving home	103 (78.6)	28 (21.4)
Washing hands with soap and water frequently for at least 20 seconds	116 (88.5)	15 (11.5)
Touching of eyes, nose, and mouth with unwashed hands	91 (69.5)	40 (30.5)
Clean and disinfect frequently touched objects and surfaces	90 (68.7)	41 (31.3)
Maintaining physical distancing at least 2 meters away from each other at all times	110 (84)	21 (16)
Avoid hand shake and traditional greeting (kissing)	119 (90.8)	12 (9.2)
Cover mouth and nose during coughing and sneezing	112 (85.5)	19 (14.5)
Stay home when flu-like infections during the transmission period feel.	79 (60.3)	52 (39.7)
Listen and follow the direction from state and local Authority	119 (90.8)	12 (9.2)
The overall practice of participants		
Good	118 (90)	
Moderate	4.6 (6)	
Poor	7 (5.34)	

3.6. Practice of the Study Participant Toward Prevention COVID-19 Pandemic

In the present study, the practice of participants was also accessed to evaluate the prevention measure they took toward COVID-19 pandemic. Consequently, 93.9% (46) of participants from Ada'a Berga, 85.45% (35) from Ejere and

95.1% (39) from Walmara respond that, they used to inform their family members to wash their hands frequently (Table 5). Gender based practice of the respondent was also accessed and both male and female usually informs their family members to wash their hands as preventive measure toward COVID-19.

Table 5. Demographic characteristics and practice of the study participant to combat COVID-19 pandemic.

Variables	Inform family on COVID-19 transmission and prevention measure		Encourage family members to stay home when they feel sick	
	Yes (%)	No (%)	Yes (%)	No (%)
Woreda				
Ada'a Barga	18 (36.7)	31 (63.2)	6 (12.2)	43 (87.7)
Ejere	18 (43.9)	23 (56)	3 (7.3)	38 (92.7)
Walmara	10 (24.2)	31 (75.6)	4 (9.75)	37 (90.24)
Gender				
Male	39 (34.5)	74 (65.5)	10 (8.85)	103 (91.15)
Female	7 (38.8)	11 (61.1)	3 (16.6)	15 (83.33)
Age				
18-29	8 (50.0)	8 (50.0)	0 (0.0)	16 (100)
30-59	34 (33.33)	68 (66.6)	13 (12.7)	89 (87.3)
>=60	4 (30.8)	9 (69.2)	0 (0.0)	13 (100)
Marital Status				
Married	40 (37.7)	66 (62.2)	10 (9.43)	96 (90.56)
Unmarried	3 (27.27)	8 (72.2)	1 (9.09)	10 (90.09)
Divorced	3 (21.43)	11 (78.6)	2 (14.3)	12 (85.7)
Academic status				
Primary & above	7 (14.6)	41 (85.4)	6 (12.5)	42 (87.5)
Read and write	3 (12.5)	21 (87.5)	3 (12.5)	21 (87.5)
Illiterate	4 (6.78)	55 (93.2)	4 (6.78)	55 (93.2)
Occupation				
Trade	0 (0.0)	2 (100)	0 (0.0)	2 (100)
Employee	4 (25.0)	12 (75.0)	3 (18.7)	13 (81.25)
Agriculture	36 (35.3)	66 (64.7)	9 (8.8)	93 (91.25)
Trade & Agriculture	1 (50.0)	1 (50.0)	0 (0.0)	2 (100)
Employee and Agriculture	5 (55.5)	4 (44.4)	1 (11.1)	8 (88.9)

Table 5. Continued.

Variables	Inform family members to maintain physical distance		Providing personal protective equipment		Informing family members to Wash hands frequently	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Woreda						
Ada'a Barga	31 (63.2)	18 (36.73)	37 (75.5)	12 (24.5)	46 (93.9)	3 (6.1)
Ejere	10 (24.4)	31 (75.6)	34 (82.9)	7 (17.0)	35 (85.4)	6 (14.6)
Walmara	25 (60.9)	16 (39)	30 (73.2)	11 (26.8)	39 (95.1)	2 (4.9)
Gender						
Male	57 (50.4)	59 (52.2)	91 (80.5)	22 (19.5)	103 (91.1)	10 (8.85)
Female	9 (50.0)	9 (50.0)	10 (55.5)	8 (44.4)	17 (94.4)	1 (5.55)
Age						
18-29	7 (43.7)	9 (56.25)	11 (68.7)	5 (31.3)	15 (93.7)	1 (6.25)
30-59	53 (51.9)	49 (48.0)	80 (78.4)	22 (21.6)	94 (92.1)	8 (7.8)
>=60	6 (46.1)	7 (53.8)	10 (76.9)	3 (23.0)	11 (84.6)	2 (15.4)
Marital Status						
Married	46 (43.4)	60 (56.6)	80 (75.5)	26 (24.5)	99 (93.4)	7 (6.6)
Unmarried	9 (81.8)	2 (18.2)	8 (72.7)	3 (27.3)	10 (90.9)	1 (9.09)
Divorced	11 (78.6)	3 (21.43)	13 (92.8)	1 (7.18)	11 (78.6)	3 (21.4)
Academic status						
Primary & above	28 (58.3)	20 (41.67)	43 (89.6)	5 (10.4)	42 (87.5)	6 (12.5)
Read and write	11 (45.8)	13 (54.16)	11 (45.8)	13 (54.2)	20 (83.3)	4 (16.7)
Illiterate	27 (45.8)	32 (54.24)	47 (79.6)	12 (20.3)	58 (98.3)	1 (1.7)
Occupation						
Trade	1 (50.0)	1 (50.0)	2 (100)	0 (0.0)	2 (100)	0 (0.0)
Employee	11 (68.7)	5 (31.25)	16 (100)	0 (0.0)	16 (100)	0 (0.0)
Agriculture	50 (49)	52 (50.98)	77 (75.5)	25 (24.5)	92 (90.2)	10 (9.8)
Trade & Agriculture	0 (0.0)	2 (100)	0 (0.0)	2 (100)	2 (100)	0 (0.0)
Employee and Agriculture	4 (44.4)	5 (55.5)	6 (66.7)	3 (33.3)	8 (88.9)	1 (11.1)

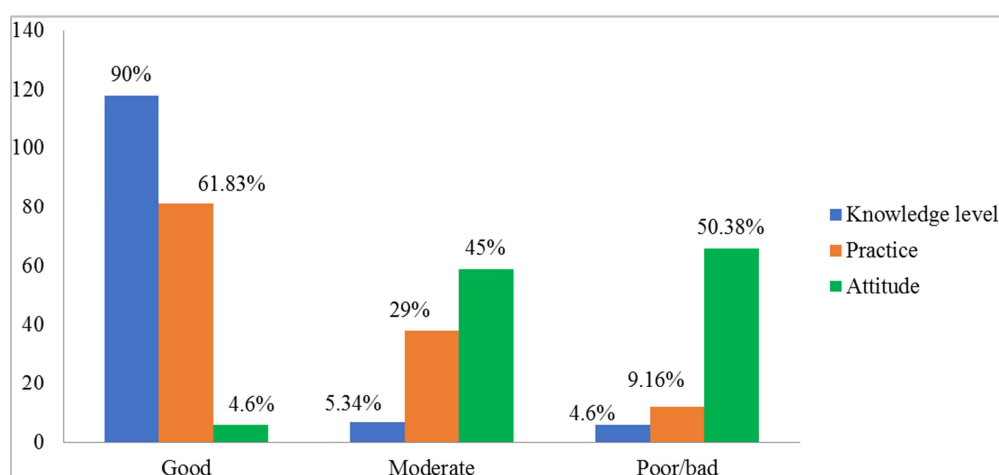


Figure 2. Knowledge level, attitude and practice of the study farmers toward COVID-19 pandemic.

4. Discussion

The emergence of COVID-19 in December 2019 from the city of Wuhan, China and its subsequent rapid global spread to over 215 countries and territories has become one of the largest pandemics in recent times with several devastating and significant public health challenges [10]. In this study we investigated the knowledge, attitude and prevention practice of the farmers toward COVID-19 pandemic. It is the first to be done among the farmer in the central highland of Ethiopia to assess the knowledge, attitude and prevention practice of the participant toward COVID-19 pandemic. Collating such information is important for adoption of major preventive

behaviors such as personal hygiene, maintaining social distance, using face mask as well as estimating the challenges emanating as a result of prolonged lockdown and restrictions [5]. A total of 131 respondents were recruited into the present study of which 37.8% (49) were from Ada'a Barga, 31.3% (41) from Ejere and 31.3% (41) from Walmara district. As a result, high level (90%) of good knowledge toward COVID-19 pandemic was found among the farmers in the central highlands of Ethiopia which is similar with the report of [3].

However, the current study result is in opposite of the finding of [21] who reported higher prevalence of poor knowledge in North west Ethiopia. 83.2% of the respondents inform that, the symptoms of COVID-19 are, coughing, fever, shortness of breath and fatigue which oppose the find

of [17] who reported poor knowledge of the study participant about COVID-19 symptoms. However, it agrees with the study report of [13] in which 83% of the study participant respond that, the disease is characterized by fever, fatigue, dry cough, and myalgia. Additionally, the present study result is relating with the reports in Kenya [4], China [22] and Iran [8] whom reported a low prevalence of poor knowledge. The reason for this low level of poor knowledge (high level of good knowledge) among the farmers in the central high land of Ethiopia might be due to the difference in the study period together with proximity of the study area to the capital city which enables to have a considerable health infrastructure and information dissemination service.

Moreover, an all-inclusive and strategic approach made by the federal government of Ethiopia to enhance the awareness level of the peoples about COVID-19 is really incredible and encouraging. The existence of health extension service in the rural area of Ethiopia greatly facilitated early arrival of important health information to the farmers this day. This all might have allowed the society of the present study area to get a plenty of knowledge from any opportunity provided by the central and regional governments. Among 131 respondents, 91.6% (120) of them get information about COVID-19 from mass media whereas 6.9% (9) of them obtained from families and friend. This report is related with the study finding of [21] who reported 59.9% of information are obtained by TV and/or radio. In the present study, 94.4% of female usually inform their family members to wash their hands with soaps and detergents regularly as a main preventive measure.

This is because, females are usually on the frontline to care for their families through any possible ways. Additionally, 81.8% of unmarried peoples usually inform their family members to maintain physical distance as main preventive measure whereas only few respondents preferred to stay home during the COVID-19 pandemic because of low income and infirm economy of the country. 93.9% of the present study participant thinks that, COVID-19 virus spreads via droplet and during sneezing or coughing of infected person. This finding agrees with report of [13] which states 95.1% of the study participant correctly respond that, COVID-19 virus spreads via respiratory droplets of infected individuals. The advantage of properly using masks for the prevention of COVID-19 was misperceived by 90.1% of the present study participant as it has no importance to prevent the occurrence of case. This might be because of considerable occurrence of COVID-19 cases in those who use mask which mislead the farmers as it has no advantage.

About 96.2% (127) of the present study participant believe that, proper hand washing and using sanitizer are important to prevent infection with COVID-19. This finding also agrees with report of [13] Ten different questions were used to assess the attitude and practice of the participant toward COVID-19 pandemic. The questions focus on the perception and attitude of the study participant toward major preventive measure supposed to be appropriate. As a result, 57.3% (75) and 71% (93) of the

respondent said that frequent hand washing for 20 second and avoiding handshaking are highly important to prevent COVID-19 infection respectively. Additionally, majority of the respondent believe that, avoiding close physical contact with sick peoples (50.4%) is much more important behavior to be practiced to prevent COVID-19 infection. The prevalence of poor practice is high in the present study which is consistent with finding of [21] but not with those studies done in Iran by [8] and in China by [22].

More than half (60.3%) of the current study participants usually stay home when feel flu-like infection has encountered during the transmission period of this devastating pandemic whereas the majority of the participants of the study conducted in China had not visited any crowded place (96.4%). The difference in the practice of participant in these two countries is mainly associated with economic issue. That means majority of the peoples in Ethiopia are farmers and economically not self-reliant and will not stay home for any possible reason unless they are afforded with additional support. On the other hand, the stay home order passed form the government of Ethiopia was not as strong as the one passed form the People's Republic of China during the peak COVID-19 pandemic and it was mainly based on the desire of each individual to do it. In the present study, participants with the educational status of "illiterate" and "read and write" were more likely to have poor practice toward COVID-19 that those with educational status of primary and above. Similar to the present study result, [21] in Ethiopia and [8] in Iran reported that, higher level of education was associated with high practice score.

5. Conclusion

Majority of the present study participant have good knowledge level about the symptoms, transmission route of COVID-19 and important preventive measure to be practiced. They also have a positive attitude toward the main and appropriate preventive measures to combat COVID-19. Even though they have good knowledge and positive attitude toward this devastating pandemic, participants of the present study do not practice those measure supposed to be appropriate for COVID-19 prevention. This might be due to carelessness and foolhardy belief of the rural society that, the disease will only affect the urban residents. The shortage of protective equipment's like masks and scarcity of sanitizer may also enforce them not to properly practice those measures. The problems associated with the economic crisis during the peak incidence of this devastating pandemic was also another contributing factors for not to properly practicing what they know for combating the widespread occurrence of COVID-19. So, in order to tackle the spread and minimize the danger to be inflicted by this pandemic, the following points are worth mentioning. The federal and local governments of Ethiopia have to continue dissemination of information on COVID-19 updates and work vigorously to support economically endangered community. Upgrading the health and other basic infrastructure to enables the rural

communities to have access to different information sources. Initiating and funding of the research ideas with the objective of accessing the public health significance and economic crisis of COVID-19 in this area and finally recommend appropriate prevention measures. Implementation of one health approach which enable to utilize different knowledge source, materials and man powers in such resource limited area for fast and reliable output.

References

- [1] Abdelhafiz, A. S., Mohammed, Z., Ibrahim, M. E., Ziady, H. H., Alorabi, M., Ayyad, M., Sultan, E. A., (2020), "Knowledge, perceptions, and attitude of Egyptians towards the novel coronavirus disease (COVID-19)" *J. Community Health*. 1-10.
- [2] Ahmed, B., Megersa, L., Mulatu, G., Siraj, M., Boneya, G., (2020), "Seroprevalence and Associated Risk Factors of Foot and Mouth Disease in Cattle in West Shewa Zone, Ethiopia", 2020.
- [3] Alrubaiee, G. G., Al-qalah, T. A. H., Al-aawar, M. S. A., (2020), "preventive behaviours towards COVID-19 among health care providers in Yemen: an online cross-sectional survey", *BMC Public Health*, 1-11.
- [4] Austrian, K., Pinchoff, J., Tidwell, J. B., White, C., Abuya, T., Kangwana, B., Ochako, R., Wanyungu, J., Muluve, E., Mbushi, F., (2020), "COVID-19 related knowledge, attitudes, practices and needs of households in informal settlements in Nairobi, Kenya".
- [5] Christopher, R., Margaret, R., Dauda, M. A. D., Saleh, A., Ene, P., (2020), "Knowledge, Attitudes and Practices Towards COVID-19: An Epidemiological Survey in North-Central Nigeria", *J. Community Health*, 46 (3), 457-470.
- [6] Davies, N. G., Klepac, P., Liu, Y., Prem, K., Jit, M., Eggo, R. M., group, C. C.-19 working, (2020), "Age-dependent effects in the transmission and control of COVID-19 epidemics", *Nature medicine*, 26 (8), 1205-1211.
- [7] Deng, S.-Q., Peng, H.-J., (2020), "Characteristics of and public health responses to the coronavirus disease 2019 outbreak in China", *J. Clin. Med.* 9, 575.
- [8] Erfani, A., Shahriarirad, R., Ranjbar, K., Mirahmadizadeh, A., Moghadami, M., (2020), "Knowledge, attitude and practice toward the novel coronavirus (COVID-19) outbreak: A population-based survey in Iran", *Bull World Heal. Organ*, 30 (10.2471).
- [9] Frank MacFarlane Burnet, S., Burnet, F. M., Burnet, M., White, D. O., (1972), "Natural history of infectious disease", CUP Archive.
- [10] Gusi, A. M., Bertu, W. J., de Miguel, M. J., Dieste-Pérez, L., Smits, H. L., Oholi, R. A., Blasco, J. M., Moriyón, I., Muñoz, P. M., (2019), "Comparative performance of lateral flow immunochromatography, iELISA and Rose Bengal tests for the diagnosis of cattle, sheep, goat and swine brucellosis", *PLoS Negl. Trop. Dis.* 13, e0007509.
- [11] Haftom M, Petrucka, P., Kbrom Gemechu, Haftamu Mamo, Tesfay Tsegay, E. A., Kahsay, H., A. G., (2020), "Knowledge, Attitudes, and Practices Towards COVID-19 Pandemic Among Quarantined Adults in Tigray Region, Ethiopia. *Infection and Drug Resistance*. 2020; 13:3727.
- [12] Iacus, S. M., Natale, F., Santamaria, C., Spyrtatos, S., Vespe, M., (2020), "Estimating and projecting air passenger traffic during the COVID-19 coronavirus outbreak and its socio-economic impact", *Saf. Sci.* 104791.
- [13] Kebede, Y., Yitayih, Y., Birhanu, Z., Mekonen, S., Ambelu, A., (2020), "Knowledge, perceptions and preventive practices towards COVID-19 early in the outbreak among Jimma university medical center visitors, Southwest Ethiopia", *PLoS One* 15, e0233744.
- [14] Millán-Oñate, J., Rodríguez-Morales, A. J., Camacho-Moreno, G., Mendoza-Ramírez, H., Rodríguez-Sabogal, I. A., Álvarez-Moreno, C., (2020), "A new emerging zoonotic virus of concern: the 2019 novel Coronavirus (SARS CoV-2)", *Infectio* 24, 187-192.
- [15] Morens, D. M., Breman, J. G., Calisher, C. H., Doherty, P. C., Hahn, B. H., Keusch, G. T., Kramer, L. D., Leduc, J. W., Monath, T. P., Taubenberger, J. K., (2020), "The Origin of COVID-19 and Why It Matters", *A. j. trop med and hygiene*, 103, 955-959.
- [16] Mushi, V., (2020), "The holistic way of tackling the COVID-19 pandemic: the one health approach", *Trop Med and Health*, 48, 1-2.
- [17] Ngwewondo, A., Nkengazong, L., Ambe, L. A., Thierry, J., Id, E., Medou, F., Id, M., Oumarou, H., Id, G., Nyuna, N., Ngonde, C., Oyono, J. E., (2020), "Knowledge, attitudes, practices of / towards COVID 19 preventive measures and symptoms: A cross-sectional study during the exponential rise of the outbreak in Cameroon", *PLoS neglected trop diseases*, 14-e0008700.
- [18] Romei, V., Burn-Murdoch, J., (2020), "Real-Time Data Show Virus Hit to Global Economic Activity", *Financ. times*, available <https://www.ft.com/content/d184fa0a-6904-11ea-800d-da70cff6e4d3> (accessed 30 April 2020).
- [19] Shereen, M. A., Khan, S., Kazmi, A., Bashir, N., Siddique, R., (2020), "COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses", *J. Adv. Res.* 24, 91-98.
- [20] Siche, R., (2020), "Scientia Agropecuaria What is the impact of COVID-19 disease on agriculture?", *Scientia Agropecuaria*, 11-3-611.
- [21] Yonas A, Birhanu A, M. D. M., (2020), "Knowledge, Attitude and Practice Towards COVID-19 Among Chronic Disease Patients at Addis Zemen Hospital, Northwest Ethiopia", *Infection and drug resistance*, 13, 1949-1960.
- [22] Zhong, B.-L., Luo, W., Li, H.-M., Zhang, Q.-Q., Liu, X.-G., Li, W.-T., Li, Y., (2020), "Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey", *Int. J. Biol. Sci.* 16: 1745.