

Magnitude and associated factors for attitude and practice of Southern Ethiopian residents toward COVID-19 and its preventions: A community based cross sectional study

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Research Article

Keywords: COVID-19, Attitude, Practice, Associated factors, Southern Ethiopia

Posted Date: June 22nd, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-36120/v1>

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Abstract

Background: COVID-19 first broke out in china, Hubei province on December 29, 2019. Since then it took more than hundred thousand lives worldwide. Although all countries are taking varying degree of measures to curb the dissemination, the virus is still spreading rapidly in all part of the world. Adherence of peoples for COVID-19 precautions measures is one of the most important factors which determine the effectiveness of curbing the spread. However without having good attitude adherence of people toward precaution measures could be challenging. Therefore the aim of this study is to assess the attitude, practice and associated factors of southern Ethiopian residents toward COVID-19 and its prevention.

Methods: A community based cross sectional study was conducted among 585 Southern Ethiopian residents. Bivariate and multivariate binary logistic regression was used to determine association between dependent and independent variables. Adjusted odds ratio with their 95% CI was used show the strength of association. P-value < 0.05 was used to decide statistically significant association.

Result: Most of the study participants (90.3%) have good attitude toward COVID-19 and its prevention. Being younger age group, having chronic medical illness, using television as a source of information and having good knowledge were significantly associated with good attitude toward COVID-19. On other hand; only 20% of the study participants have good practice toward COVID-19 prevention. Educational status, occupation and having chronic medical illness, uses of religious teaching as information sources are associated factors for good practice against COVID-19 infection.

Conclusion: We conclude that despite the presence good attitude in majority of respondents much work needed to improve rare practice of COVID-19 preventive measures.

Background

The coronavirus disease 19 (COVID-19) is an extremely contagious viral infection caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) and first broke out in china, Hubei province, on December 29, 2019[1][2].

To date, June 7, 2020, about 7 million confirmed cases and 400, 000 deaths have been reported worldwide [3]. Yet the number of positive cases and deaths continues to rise rapidly. Difficulty of isolating suspected cases due to long incubation period and its rapid contagiousness makes the diseases challenging to control. The virus can also present in some peoples with few or no symptoms, which makes the spreading quicker and silent[1]. Consequently even developed nations like USA, Italy, Spain, France and China are severely affected by the outbreak [3].

So far African continent has reported relatively lesser number of cases (131, 324) and deaths (3, 148) [4]. There is a debate on the reason for lower number of cases and deaths. Some of speculations are

relatively lower testing rates, poor reporting habits and lower number of passengers coming to continents [5–8]. However nothing can spare Africa from casualty but preparation and on time response. In addition there is a concern from world health organization (WHO) that the disease could spread rapidly and causes devastating casualties in most African countries where it is difficult to exercise COVID-19 precaution measures[8].

Since the start of the outbreak, Ethiopian government has been taking different measures to tackle the spread based on WHO recommendations, starting from surveillance of people coming from aboard at the airport or border line[9] to varying levels of contact tracing and isolation and quarantine of suspected cases; Awareness creations are also being given by different means such as television, radio, telecommunication and social media in order to encourage peoples for hand washing, respiratory hygiene, social distancing and avoid hand shaking and public gathering[10].

Resources are also being mobilized from the citizens and foreign donors besides preparation of health systems for possible upcoming overwhelms of hospitals by severely ill patients who require isolation, oxygen, and mechanical ventilation[11].

In addition to government effort, people's adherence for preventive measures is vital to accomplish a success against the ongoing fight of COVID-19 pandemics. However, in the absence of good attitude in a community toward COVID-19, adherence for prevention measures could be challenging. Therefore the aim of this study is to assess the attitude, practice and associated factors of southern Ethiopian residents toward COVID-19 and its prevention.

Methods

A community based cross sectional study was conducted on between March 27 to 31, 2020 to assess attitude, practice and associated factors of southern Ethiopia residents towards COVID-19 and its preventions. Face to face interview was conducted among 585 Southern Ethiopian adult's residents. Sample size was calculated based on the fact that no similar study had conducted during the study period, so p and q were considered as 0.5 and margin of error 0.4 with 95% confidence interval. By using single proportion formula sample size were determined to be 600.

There were about 9 (nine) attitude questions. All nine questions use likert scale measurement. Each questions scored out of 5, making the total maximum score 45 and the minimum 9. Those participants who scored below 25 points on all nine questions were considered as they have poor attitude and those who scored 25 and above were considered as they have good attitude.

Practice assessed by 8 questions in likert scale and each scored up to 2 (0 = disagree, 1 = neutral, 2 = agree) and the overall maximum score being 16 and the minimum score 0. Overall Score below 8 was considered as poor practice and, 8 and above as good practice.

Questions were prepared in English and translated to local languages 'Amharic' and 'gedeu'ffa'. Questionnaires were filled by trained data collectors. Socio-demographic factors such as age, gender, marital status, education, occupation, religion, residence, sources of information, household size ...etc were collected as independent variables.

Data were coded and entered in to Epi-data 3.1 and were exported into SPSS version 25 for cleaning and analysis. Frequency tables, and descriptive summaries were used to describe the study variables. Bivariate binary logistic regression analysis was used to see the crude association between dependent and independent variables. All explanatory variables which had association in bivariate analysis at p-value less than or equal to 0.25 were entered into multivariable binary logistic regression model. Multi-collinearity was checked by variance inflation factor and tolerance level. Adjusted odds ratio with their 95% CI was used to show the strength association. P-value < 0.05 was used to declare statistical significance of independent predictors.

Result

Socio-demographic characteristics of respondents

From a total of 600 eligible respondents, 585 were analyzed and the rest of 15 were excluded due to lack of cleanness and incompleteness of the data. The mean age of the respondents was 33.7 with a standard deviation of ± 11 . About 41.9% of the study participants were female and 12.5% have no any formal education. Majority (74.4%) of study participants were married and nearly half (54.4%) of the respondents live in rural area. The socio-demographic characteristics of respondent were shown in Table1.

Table 1
Sociodemographic characteristics

Variables		Frequency	Percentage (%)
Age	18–45	493	84.3
	45–60	81	13.8
	>= 60	11	1.9
Gender	Male	340	58.1
	Female	245	41.9
Education	No formal education	73	12.5
	Primary school (1–8)	208	35.6
	Secondary (9–12)	176	30.1
	Above	128	21.9
Marital status	Married	435	74.4
	Not married	121	20.7
	Divorced	17	2.9
	Widowed	12	2.0
Residence	Urban	266	45.5
	Rural	319	54.5
Family size	> 5	313	53.5
	<= 5	272	46.5
Religion	Orthodox	208	35.6
	Catholic	19	3.2
	Protestant	296	50.6
	Muslim	62	10.6
Occupation	Farmer	73	12.5
	Merchant	155	26.5
	Government employee	116	19.8
	Daily laborer	47	8
	House wife	111	19.0

Variables	Frequency	Percentage (%)
Other ¹	83	14.2

Attitude toward covid-19 and its prevention

Nine questions, each question possesses five points, were used to assess the attitude of respondents. The mean score of respondents was 34.45 (\pm SD 5.5) and eighteen and forty five were the minimum and maximum scores respectively. By using 25 point as a cut point, only 9.7% of the respondents scored below 25 points but majority of participants (90.3) have favorable attitude toward covid-19 and its prevention. From all respondents 67% of participants strongly or very strongly believe that covid-19 is curse and about quarter (23.9%) of participants strongly or very strongly believe that the virus could not be transmitted in hot climate. Only 5% respondent not worried at all about COVID-19 and 2% consider it as common cold and the rest 93% are worried moderately, very worried or most worried about covid-19 infection.

Practice toward covid-19 and its prevention

Majority of respondent (80%) have bad practice toward covid-19 prevention. Almost all respondent (93.3%) never used surgical mask. However more than halve of respondents (58.3%) had been practicing hand washing using soap more than 3 times a day and 38.1% one or two times a day the rest not practiced hand washing using soap in a day. About 43.1% participants were practicing hand shaking and only 10% of participants were practicing social distancing but the rest 61.4% and 28.3% were never practiced social distancing or sometimes practiced social distancing respectively.

Associated factors for attitude toward covid-19 and its preventions

On multivariate analysis we found that the being age group between 18-44.9 years (AOR: 3.82: 95% CI (1.764–19.068)), having chronic medical illness [AOR: 2.73: 95% CI (1.01–7.44)], use of television as a source of information [AOR: 2.65: 95% CI (1.27–5.54)] and having good knowledge about COVID-19 [AOR:2.05: 95% CI (1.05-4.00)] have significant association with good attitude(shown on Table 2) .

Table 2
Associated factors for level of attitude

Variables	Attitude levels		COR(95%CI)	AOR(95%CI)
	Poor (%)	Good (%)		
Age	8.2	91.8	1	3.82 (1.764–19.068)□
18-44.9	16.1	83.9	0.46 (0.24–0.88)	1.21 (0.232–6.28)
45-59.99	18.8	81.3	0.387(0.106–1.41)	1
≥ 60				
Education	19.2	80.8	1	1
No formal education	7.7	92.3	2.85(1.31–6.17)	2.94 (1.21–7.14)
Primary school (1–8)	9.1	90.9	2.37(1.11–5.16)	2.17 (0.83–5.71)
Secondary school (9–12)	8.6	91.4	2.52(1.08–5.90)	2.53(0.85–7.50)
Diploma and above				
Marital status	8.3	91.7	1	1
Married	14.0	86.0	0.551(0.30–1.02)	0.33 (0.15–0.73)
Unmarried	7.7	92.3	1.08(0.13–8.54)	1.55(0.157–15.42)
Divorced	25.0	75.0	0.27(0.03–2.67)	0.39 (0.027–5.68)
Widowed	18.2	81.8	0.405(0.09–1.95)	0.597(0.11–3.19)
Residence	10.4	89.6	0.863(0.5–1.49)	0.89(0.47–1.67)
Urban	9.1	90.9	1	1
Rural				
Chronic illness	5.9	94.1	1.89(0.78–4.53)	2.73(1.01–7.44)□
Yes	10.6	89.4	1	1
No				
Internet as information sources	10.1	89.9	0.953(0.48–1.90)	0.81 (0.34–1.94)
Yes	9.7	90.3	1	1
No				

□ p value < 0.05 (statically significant)

Variables	Attitude levels		COR(95%CI)	AOR(95%CI)
	Poor	Good		
	(%)	(%)		
Television/Radio as information sources	8.0	92.0	2.97(1.59–5.549)	2.65(1.27–5.54)¶
Yes	20.5	79.5	1	1
No				
Telecommunication as sources of information	9.5	90.5	1.00(0.62–1.86)	0.657(0.34–1.28)
Yes	10.1	89.9	1	1
No				
Religious teaching as sources of information	15.2	84.8	0.57(0.24–1.34)	0.544(0.21–1.40)
Yes	9.3	90.7	1	1
No				

¶ p value < 0.05 (statically significant)

Associated factors for practice toward covid-19 and its preventions

The presences of chronic illness, occupation and uses of religious places as a source of information and educational status have association with practice toward covid-19 prevention. As shown on Table 3, peoples who have chronic medical illness are 1.88 times more likely to have good practices [AOR = 1.883, 95% CI: 1.044–3.395]. Being merchant or government employees increases the likelihood of good practice compared to farmers by 3 and 2 times respectively. Those persons who have above secondary school educational level are around 7 times more likely [AOR = 6.903, 95% CI: 2.094–22.756] to have good practice than persons who have no formal education.

Table 3
Associated factors for level of practice

Variables		Practice		AOR (95% C.I.)	P-value
		Poor	Good		
Age	18–45	79.4%	20.6%	1	0.157
	45–60	86.0%	14.0%	0.871(0.422–1.799)	
	>= 60	62.5%	37.5%	3.611(0.891–14.632)	
Educational status	No formal education	87.7%	12.3%	1	0.003
	Primary school (1–8)	87.5%	12.5%	1.764 (0.658–4.730)	
	Secondary (9–12)	75.0%	25.0%	3.976 (1.386–11.402)	
	Above	70.3%	29.7%	6.903 (2.094–22.756)	
Religion	Orthodox	71.6%	28.4%	1	0.146
	Catholic	94.7%	5.3%	0.210 (0.026–1.705)	
	Protestant	86.1%	13.9%	0.588 (0.356–0.970)	
	Muslim	73.8%	26.2%	1.101 (0.533–2.275)	
	Other	100.0%	0	0.0 (0.0–0.0)	
Occupation	Farmer	94.5%	5.5%	1	0.015
	Merchant	81.9%	18.1%	3.006 (0.862–10.479)	
	Government employee	75.9%	24.1%	2.248 (0.596–8.476)	
	Daily laborer	95.7%	4.3%	0.796 (0.126–5.045)	
	House wife	73.0%	27.0%	5.548 (1.644–18.720)	
Statically significant if P value < 0.05					

Variables		Practice		AOR (95% C.I.)	P-value
	Other ¹	69.9%	30.1%	3.539 (0.930-13.463)	
Marital status	Married	81.7%	18.3%	1	0.937
	Not married	70.2%	29.8%	1.125 (0.583-2.172)	
	Divorced	100.0%	0.0	0.0 (0.00-0.00)	
	Widowed	90.9%	9.1%	0.405 (0.046-3.561)	
Travel history	Yes	72.5%	27.5%	1.255 (0.741-2.124)	0.398
	No	82.4%	17.6%	1	
Residence	Urban	81.7%	18.3%	0.680 (0.411-1.126)	0.134
	Rural	78.1%	21.9%	1	
Chronic illness	Yes	67.6%	32.4%	1.883 (1.044-3.395)	0.035
	No	82.6%	17.4%	1	
Internet source of information	Yes	69.7%	30.3%	1.216 (0.668-2.214)	0.522
	No	82.4%	17.6%	1	
Television source of information	Yes	79.1%	20.9%	1.108 (0.516-2.377)	0.792
	No	85.5%	14.5%	1	
Telecommunication source of information	Yes	83.8%	16.2%	0.20 (0.316-1.857)	0.101
	No	75.1%	24.9%	1	
Religious teaching as a source of information	Yes	91.3%	8.7%	0.256 (0.082-0.799)	0.019
	No	79.0%	21.0%	1	
Statically significant if P value < 0.05					

Discussion

This study was conducted 2 weeks after the first confirmed covid-19 case (March 13) in Ethiopia. At the time of data collection there were 16 confirmed covid-19 cases but no death[12]. We investigated the attitude, practice and associated factors of southern Ethiopian residents toward covid-19 and its preventions.

On the present study, most of the study participant (90.3%) have good attitude toward covid-19 and its prevention. This finding is consistent with study done in Iran though it is by far higher compared to the study done in Thailand[13] which showed 61.5% of populations have good attitude toward COVID-19 and its prevention. The difference could be due to the fact that our study conducted later than the study of Thailand. In between period of two studies so many fatality and crises happened around the world which can change the perception and attitude of mankind toward COVID-19 and its prevention.

This study also reveals that being younger age, having chronic medical illness, using television as a source of information and having good knowledge about COVID-19 were associated factors which increase the likelihood to have good attitude. Similarly study done in Thailand[13] showed peoples who have medical illness were more likely to have good attitude. Surprisingly in our study elder population have relatively poor attitude despite being more vulnerable for complications of COVID-19 infection. In contrast A. Erfani et al. [14]demonstrated that older age groups have higher likelihood to have good attitude. The difference could be due to elders in our country see such kind of events either traditionally or spiritually perspectives.

Practicing preventive measures like frequent hand washing using soap, uses of sanitizer, avoidance of hand shaking and public gathering and use of face mask are paramount important for mitigating the spread of COVID-19 infection[15]. However, our result showed that only 20% of the populations are practicing prevention measures favorably. For example only 6.3% of participants had worn face mask when leaving home. Comparing with the reports of Peeradone et al, in Taiwan,[10] and Azlan A.A. et al. in Malaysia[16] in which there was 98% and 51% practice of using face mask ; our respondents have by far lower experience of using face mask. This huge variation can be explained primarily by scarcity of protective equipment at national level. In addition peoples in our country were discouraged to use medical face mask so that it can be saved to be used by health care providers.

In addition to lower rate face mask user, social distancing had practiced by only 10% participants which was much lower than the finding of a study conducted by John M Clements et al, USA, which was 70% peoples avoid mass gathering[17]. The difference might be due two major reasons; firstly, the variation of number of reported cases and fatality in two nations at a time of data collection; secondly, difference of two country's peoples in capacity to cop up economic burden of social distancing. On other hand majority of our participants avoid hand shaking (56%) and frequently practicing hand washing using soap (58.6%). These two practices relatively received better acceptance by the community. This might be due to they are relatively cheaper tasks to exercise. However, in a comparison to other developing nations like Bangladesh[18] in which there is 98.6% hand washing practice our finding revealed a huge gap in the study area.

Educational status (p-value = 0.003), occupation (p-value = 0.015), presence of chronic illness (p-value = 0.035) were associated with practice against covid-19 infection. This is finding partly in line with the study conducted by Peeradone Srichan et al who showed age, gender, educational status, annual income as a factors for good practice. The type of analysis method used, Multivariate Vs. Bivariate, might be a reason for such difference[10].we found that educational level positively affect the practice of our respondents though Azlan AA et al.[16] Showed no effect. This difference could be due to variation in educational status categories.

Conclusion

We conclude that majority of responders have good attitude toward COVID-19 and its preventions. However, preventive measures of COVID-19 were practiced by only fewer respondents. Age, chronic medical illness, use of television as a source of information and level of knowledge are associated factors for level of attitude. Level of practice of preventive measures associated with educational status, occupation, presence of chronic medical illness and use of religious teaching as sources of information.

Declarations

Ethical Approval and Consent to participate

Ethical approval was received from Dilla University College of medicine and health science ethical review board

Consent for publication

Not applicable

Availability of data and materials

The datasets used or analyzed during the current study are available from the corresponding author on reasonable request

Competing interest

There is no competing interest to declare

Funding

Dilla University has funded the research project

Author's contributions

Simeneh mola, Zemedu aweke, Bedru jemaal and Robel Hussien contribute to study conception, design, data collection, and performed statistical analysis. Sileshi hailu, Derartu neme, Ababayehu zemedkun, Hailemariam Mulugeta contributed for interpretation of the result, writing up and prepared manuscript. All the authors read the manuscript and approved the final submission.

Acknowledgements

We would like to thank Dilla University College of Medicine and Health Science for funding this research.

Abbreviations

AOR	Adjusted odd ratio
COVID-19	Corona Virus 2019
SARS-CoV-2	Severe acute respiratory syndrome corona virus 2
SPSS	Statistical Package for Social Science
USA	united States of America
WHO	World health organization

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