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Assessment of Utilization of Personal Protective Measures of COVID-19 and Associated Factors in Addis-Ababa

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Abstract: *Introduction:* Globally, as of May 11, 2021, there have been over 158 million confirmed cases including over 3 million deaths, including the African continent, which is highly impacted. Ethiopia, the second-most populous African country, reported its first case on 13 March 2020 and has now reached over 260,000 confirmed cases and 3,888 deaths. The country has the 4th highest number of COVID-19 confirmed cases on the African continent and has the highest death rate among East African countries. Most of the cases in Ethiopia were from Addis Ababa, the capital city, with a projected population of over four million. *Method:* The study used descriptive, cross-sectional study design using community based approaches as appropriate as possible to address the specific objectives. The quantitative data was collected using interviewer administered structured questionnaire. Using stratified sampling techniques a total of 634 participants were selected from each stratum. In each stratum a systematic random sampling techniques were applied. *Result:* About 74.3% study participants reported daily face mask utilization while 12.2% of the study participants used face masks occasionally. Utilization of face masks is highest (79%) among private employees followed by daily laborers (76%) and unemployed people (72%) while lowest utilization of face masks was observed among Government employees (58.8%). In this study the odds of face mask utilization among participants whose age 30-39 years is 0.446 (AOR=0.446, CI: 0.22, 0.91) times less likely compared to those participants who were in the age range of 60 and above. The odds of face mask utilization among daily laborers is 0.33 (AOR=0.33, CI: 0.16, 0.67) times less likely compared to Government employees. With regard to educational status, the odds of sanitizer utilization among uneducated participants were 4.831 (AOR=CI: 2.18, 10.708) times more likely compared to those participants who are degree holders and above. *Conclusion:* Utilization of face masks is highest (79%) among private employees followed by daily laborers (76%) and unemployed people (72%) while lowest utilization of face masks was observed among Government employees (58.8%).

Keywords: Utilization, COVID-19 Prevention Control Measures, Associated Factors

1. Introduction

Since its emergence in December, 2019, the coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has progressed into a pandemic [1] with over 5.7 million new weekly cases [2]. Globally, as of May 11, 2021, there have been over 158 million confirmed cases including over 3 million deaths, including the African continent, which is highly impacted [2, 3]. Ethiopia, the second-most populous African country, reported its first case on 13 March 2020 [4] and has now reached over 260,000 confirmed cases and 3,888 deaths [5] The country has the 4th highest number of COVID-19 confirmed cases on the African continent and has the highest death rate among East African countries [6]. Most of the cases in Ethiopia are from Addis Ababa, the capital city, with a projected population of over four million [7]. COVID-19 has consistently resulted in a high positivity rate, number of health facility admissions, and deaths in the city. Not only is the city an epi-center of COVID-

19 in the country, epidemiological surveillance data shows a sharp inclining trend in the number of cases and death rate, which might indicate a high community transmission [6]. To control the pandemic, save lives, and put the country's economy back to work, we need to be able to see the spread of COVID-19 in its entirety. Otherwise, we will all suffer the consequences. Besides, uncoordinated governmental responses may lead to disruption in the supply and demand chain of the market system [3]. Several African countries have reacted quickly and decisively to curb the potential influx and spread of the COVID-19 virus very much in line with emerging international experience. As the situation evolves, there are more questions about the suitability and likely effectiveness of some of these measures, such as strict confinement. The large size of the informal sector (89 percent of total employment); the precariousness of most jobs; the limited coverage of pensions and unemployment insurance schemes; and the predominance of micro, small, and medium-size enterprises in business activity (90 percent) all need to be factored in, as they may make aggressive containment measures less effective. Protecting vulnerable groups, ramping up testing, and promoting the wearing of masks may be better options [4]. Hence, the aim of this study was to assess the utilization of personal protective measures of COVID 19 and associated factors in Addis-Ababa, Ethiopia.

2. Materials and Method

2.1. Study Design and Settings

A quantitative study methods was applied to address the objectives of the study. The study used descriptive, cross-sectional study design using community based approaches as appropriate as possible to address the specific objectives. The study was conducted from January 25 to February 31, 2021 in Addis-Ababa city Administration. According to the Central Statistical Agency (CSA 2013), the projected population of the city for 2021 is about 4,234,000. Administratively, it is divided into 11 sub-cities and 116 districts. The city is a rapidly growing and expanding city, with five intercity road networks. Addis-Ababa has 13 public hospitals, 97 health centers, 25 private hospitals and 980 private clinics. There are also about 17,000 different mixes of health professionals of different categories [8].

2.2. Population and Eligibility Criteria

The source population for this study was people living in slum dominated sub-cities of Addis-Ababa city Administration. The study populations for this study were drawn from slum area dominated woreda's of Arada, Lideta, and Addis-Ketema and Kirkos sub cities and the study participants were house hold heads who have been randomly selected from slum dominated woreda's. House hold heads whose age 18 years and above and who were able to talk and listen were interviewed.

2.3. Sample Size and Sampling Strategy

Since there is no previous study conducted on the magnitude of PPE in Ethiopia, the sample size calculation was made based on a 50% estimate of outcome variable of interest at 95% of confidence level, 5% precision, a design effect of 1.5 (Since slum dominated sub-cities are going to be selected and stratified) and 10% non-response rate, to get about 634 sample size for the corresponding objectives. The households were selected systematically from slum dominated wereda's of Addis-Ketema sub city woreda 7, Arada sub city woreda 10, Kirkos sub city 10, and Lideta sub-city woreda 5 of the households were interviewed accordingly.

$$N = \frac{(Z\alpha/2)^2 P(1-P)}{D^2} = \frac{(1.96)^2 0.5(1-0.5)}{0.5^2} = 384$$

Adding 10% none response rate 384+ (384*0.1) =422.

With a design effect of 1.5 the total sample size will be 422*1.5=634 households.

Table 1. *Proportion of study participants for each selected woreda within each sub cites.*

Name of the sub-cities	Name of the Woreda within the sub-cities	Total Population of woreda	Study participants
Addis-Ketema	Worda 7	34323	182
Arada	Woreda 10	28556	151
Kirkos	Worda 10	29745	157
Lideta	Woreda 5	27140	144
Total		119764	634

2.4. Variables

1) Dependent variables: Utilization of PPE.

2) Independent variables:

Age, sex, occupation, marital status, average monthly income, educational status, religion, smoking, alcohol drinking.

2.5. Operational Definition

Coping mechanisms: These are the measures that study participants would take when they are incapable of adhering COVID-19 prevention and control measures.

Occasionally: infrequent or uncommonly practiced.

2.6. Data Collection Tools and Quality Control

The quantitative data used structured closed ended questionnaires. The data collection instrument had four sections namely, Utilization of PPE, socio-demographic characteristics, life style, socio economic implications and coping mechanism.. All data collection tools were prepared in English and translated into Amharic by experienced researchers. The tools were reviewed by group of experts

selected from Addis- Ababa Health Bureau, St. Paul Mellenium Medical College and Yekatit 12 Hospital Medical Colleges. And based on the findings of the pre-testing, appropriate amendments were made before the final administration of the instruments.

2.7. Data Management and Analysis

All data were checked and entered into Epi-data Software and imported into SPSS version 20 for cleaning and analysis. Descriptive analysis using frequency, percentages, cross-tabulations and figures was performed to summarize and present the data. Binary logistic regression analysis was used to identify variables that are significant with the outcome variable at p value ≤ 0.20 and those variables will be considered for the final model. Finally, multiple logistic analyses were carried out to identify the predictors of utilization of COVID-19 prevention and control methods. Backward stepwise regression method was used to test the model's fitness. Those variables with p value ≤ 0.05 with adjusted odds ratio and 95% confidence interval were considered as statistically significant. In this study, the dependent variable was dichotomized, with 1 being yes and 0 being no. In the regression model, goodness-of-fit tests were conducted, namely the Hosmer-Lemeshow goodness-of-fit test, which was based on the chi-square test. In testing the fitness of the logistic model, if the Hosmer-Lemeshow goodness-of-fit was greater than 0.05, the model was considered a well-fitting model.

2.8. Ethical Considerations

The study protocol was reviewed and approved by the Institutional Review Board (IRB) of Yekatit-12 Hospital Medical College and Ethiopian Public Health Association. Permission to undertake this study will be obtained from Addis-Ababa Health Bureau, Arada, Lideta, Kirkos, Addis-Ketema sub-cities. Official letters from AAHB will be written to sub-cities and woreda health offices, to facilitate the study.

An informed consent form was made available to all participants of the study. The informed consent included essential information such as statements of potential risk, benefits, likely breaches of confidentiality and how these will be curtailed. The consent form will be in line with the ethical principle of autonomy, Beneficence and maleficence by including statements that give participants the right to decline participation in the study and made it clear that their decision to participate or not to participate will have no effect on their ability and right to receive health and non-health services.

3. Result

3.1. Socio-Demographic Characteristics of Respondents

About 634 participants were enrolled in the study with a response rate of 98.9%. Nearly 62% of the participants were in the age range of 28 to 47 years. The mean age of the respondents was 42 years with standard deviation of nearly 13 years. About 442 (70%) of the respondents were females and 193 (30%) of them were males. With regard to the marital status of the participants, majority 395 (60.5%) of them were married ones.

Table 2. *Socio –demographic characteristics of respondents.*

Socio demographic Characteristic	Frequency	Percent
Age		
18-29	105	16.7
30-39	197	31.3
40-49	172	27.3
50-59	73	11.6
>=60	80	12.7
Total	627	100
Sex		
Male	193	30
Female	442	70
Marital status		
Married	395	62.7
Never married	99	15.7
Divorced/separated/widowed	119	18.9
Missed	17	
Occupation		
Government employee	68	11
Private employees	96	15.5
Daily laborers/petty traders	159	25.6
Unemployed/jobless	237	38.2
Others	60	9.7
Educational Status		
No education	157	24.7
Primary education	250	39.4
High school completed	129	20.3
Technical certificate	27	4.2
Degree and above	72	11.3
Religion		
Orthodox Christian	461	73
Muslim	124	19.7
Protestant	38	6
Catholic	5	0.8
Ethnicity		
Amhara	192	33.7
Oromo	164	29
Gurage	146	25.6
Tigray	65	11.4
Somali	2	0.3
Total	569	100
Income		
<=5000EB	591	94
>5000EB	39	6.2

*Others: imply participants out of the listed occupation.

3.2. Behavioral Aspects of Study Participants

In this study the life styles of the respondents including smoking cigarettes and drinking alcohols are presented. A total of 634 respondents were enrolled in the study, out of these, 573 (90.3%) of them didn't have history of smoking cigarettes while 52 (8.2%) of the respondents have reported about smoking cigarettes. On the other hand 9 (1.6%) of respondents were former smokers. (See Table 2).

Table 3. *Behavioral aspect of study participants in Addis-Ababa.*

Type of Behavior	Frequency	Percent
Smoking		
Current smoker	52	8.2
Former smoker	9	1.4
No smoker	573	90.4
Alcohol		
Current drinker	14	2.2
Former drinker	132	20.8
No drinker	488	77

3.3. Utilization of Personal Protective Equipment Among Study Participants, Addis-Ababa, Ethiopia

3.3.1. Study Participants

With regard to utilization of Personal protective measures, 474 (74.3%) of respondents used face masks daily and 78 (12.2%) of the study participants used face masks occasionally. Nearly 27% of respondents used hand sanitizers daily while 35.5% of respondents used hand sanitizer when they had contacts with surfaces. However 2.4% of study participants didn't use sanitizer to protect themselves from COVID-19.

Table 4. *Utilization of personal protective equipment among study participants, Addis-Ababa, 2021.*

Utilization for PPE		
Frequency of face make utilization	**Frequency**	**Percent**
Daily	474	74.3
At least weekly	63	9.9
Occasionally	78	12.2
Never used	15	2.4
Others	8	1.3
Sanitizer/disinfectant		
Daily	171	26.6
When I have contact with surfaces	225	35.3
Occasionally	169	26.5
Never used	69	10.8
Others*	4	0.6

*Others include: every six months, yearly etc.

3.3.2 Utilization of Personal Protective Equipment vs. Socio-Demographic Characteristics

(i). Utilization of PPE of Respondents by Their Level of Income

About 530 (88.8%) respondents whose monthly income <=5000ETB, covered their mouth and noses with face masks/cloth daily and 21 (87.5%) of the respondents whose monthly income >5000EB used face masks. Nearly 67% of the respondents whose income <=5000ETB have reported about use of disinfectants to protect themselves from COVID-19 While 11% of the respondents didn't use any form of disinfectants.

Table 5. *Utilization of PPE by their level of income (N=621), Addis-Ababa, 2021.*

Cove mouth and nose with face mask /cloth (N=621)	Level of Income			
	<=5000ETB		>5000EB	
	Frequency	percent	Frequency	Percent
Yes	530	88.8	21	87.5
No	67	11.2	3	12.5
Total	597	100	24	100
Use of Disinfectant (Sanitizer), N=619				
Yes	400	67.2	20	77
No	195	32.8	6	23
Total	595	100	26	100
Physical Distancing (N=630)				
Yes	281	47.5	20	51
No	310	52.4	19	48.7
Total	591	100	39	100
Frequent hand Washing with water and soap (N=620)				
Yes	495	83	18	75
No	101	17	6	25
Total	596	100	24	100

(ii). Utilization of PPE Among Respondents by Their Level of Occupation

Utilization of face masks is highest (41.8%) among unemployed ones followed by daily laborers (29.9%) and Private employee (18.6%) respectively while lowest utilization of face masks was observed among government employees (9.8%). With regard to the utilization of disinfectants and frequent hand washings, the proportion is highest for unemployed people and lowest for government employee.

Table 6. *Utilization of PPE among respondents by their level of occupation Addis Ababa, Ethiopia, 2021.*

Cover mouth and nose with face masks (N=560)	Occupation								Total
	Government employee		Private employee		Daily Laborers		Unemployed		
	Frequency	%	Frequency	P	Frequency	%	Frequency	%	
Yes	40	9.8	76	18.6	122	29.9	170	41.8	408
No	28	18.4	20	13.2	37	24	67	44	152
Use of disinfectants (n=560)									
Yes	62	17	71	19.5	93	25.6	137	37.7	363
NO	6	3	25	12.6	66	33.5	100	50.7	197
Frequent hand washing with water and soap (N=626)									
Yes	63	12.1	71	13.6	131	25.2	255	49	520
No	6	5.6	25	23.6	29	27.3	46	43.4	106
Physical Distancing (N=560)									
Yes	42	15	50	17.8	79	28.2	109	39	280
No	26	9.3	46	16.4	80	28.6	128	45.7	280

3.4. Perception of Study Participants Towards Effectiveness of COVID-19 Preventive and Control Measures

Nearly 564 (89%) of study participants claimed that wearing face masks is to be the most effective method of preventive and control measure of COVID-19 while staying at home is identified as the least effective for prevention and control of COVID-19 among 274 (43%) study participants. About 527 (83%) study participants agreed that frequent hand washing with soap and water is to be the most effective method of preventive and control measure of COVID-19.

Table 7. *Perception of study participants towards effectiveness of COVID-19 Preventive and control measures.*

Preventive Measures	Effectiveness of COVID-19 preventive and control measures				Total
	Yes		No		
	Frequency	Percent	Frequency	Percent	
Stay at home	274	43	362	57	636
Physical distancing	497	78	140	22	637
Avoiding close contact with surfaces	374	59	257	40.7	631
Wearing face masks	564	88.5	73	11.4	637
Frequent hand washing	527	83	109	17	636
Using disinfectant	430	68	204	32	634

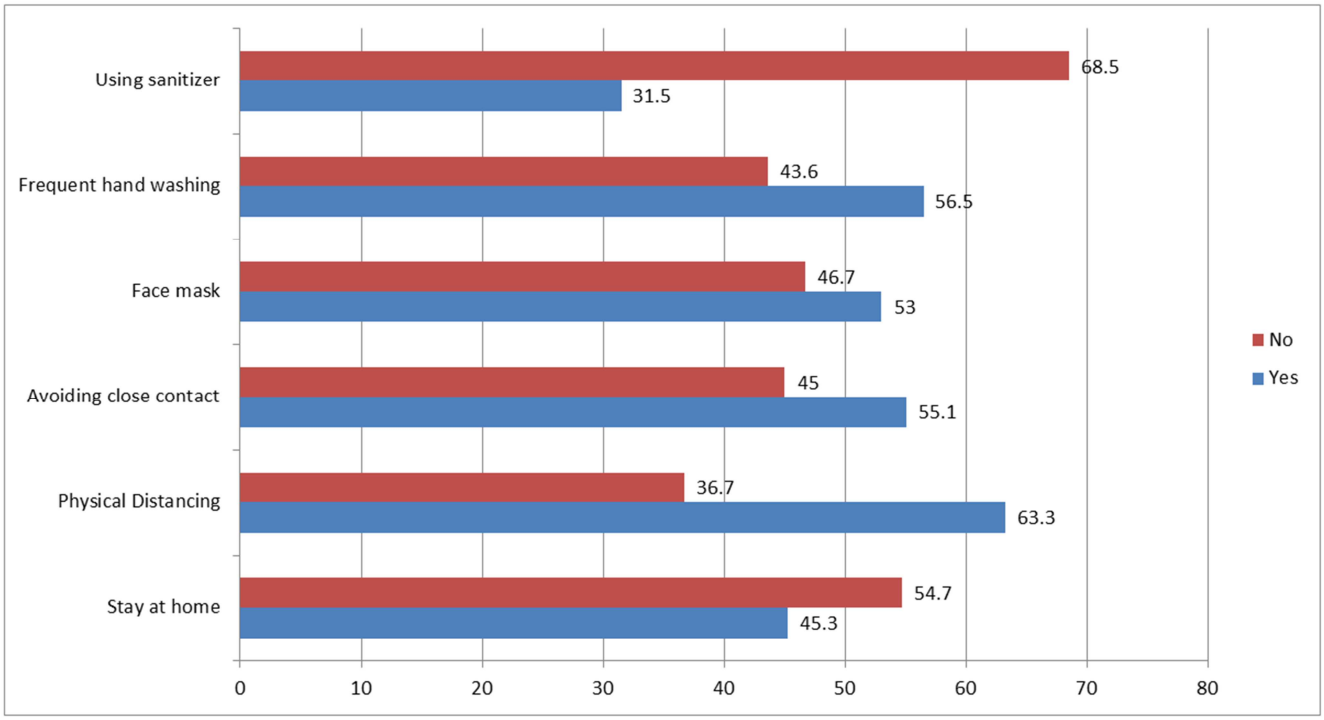

Figure 1. *Perception of study participants towards cost efficiency of COVID-19 preventive and control measures.*

Among the COVID-19 preventive and control measures, about 402 (63%) of respondents reported physical (social distancing), 356 (56.5%) frequent hand washing, 347 (55.1%) avoiding close contacts, 336 (53%) wearing face masks and 288 (45.3%) staying at home respectively as cost efficient measures while more than 68% of respondents reported using disinfectants to be the least cost efficient measure compared to other preventive measures.

3.5. Factors Influencing Utilization of Personal Protective Measures

In this study the odds of face mask utilization among participants whose age 30-39 years is 0.446 (AOR=0.446, CI: 0.22, 0.91) times less likely to use face masks compared to those participants who were in the age range of 60 and above. Similarly the odds of face mask utilization among study participants who were in the age range of 40-49 years were 0.458 (AOR=0.458, CI: 0.224, 0.93) times less likely to use face masks compared to those participants in the range of 60 and above.

A significant negative association was also observed between face mask utilization and occupation. In this study, the odds of face mask utilization among daily laborers is 0.33 (AOR=0.33, CI: 0.16, 0.67) times less likely compared to Government employees. Similarly, a negative association was observed between face mask utilization and private employee and unemployed people.

In this study, the odds of face mask utilization among uneducated participants was 2.56 (AOR=2.56, CI: 1.031, 6.39) times more likely compared to degree holders.

Table 8. *Binary logistic regression models identifying factors associated with Face mask utilization Addis-Ababa, Ethiopia, March 2021 N=206.*

Variable	Face mask utilization		COR 95% (CI)	AOR 95%(CI)	P-Value (Sig.)
	Yes	No			
Age					
18-29	65	40	1.14 (0.62, 2.09)	1.43 (0.65, 3.14)	0.368
30-39	160	37	0.43 (0.24, 0.77)	0.446 (0.22, 0.91)	0.026*
40-49	142	30	0.399 (0.21, 0.72)	0.458 (0.224, 0.937)	0.032*
50-59	50	23	0.854 (0.43, 1.677)	1.01 (0.475, 2.16)	0.973
>=60	52	28	1	1	
Occupation					
Governmental	68	0	1	1	
Private	76	20	0.263 (0.13, 0.53)	0.317 (0.137, 0.734)	0.007*
Daily laborer	122	37	0.303 (0.162, 0.567)	0.33 (0.16, 0.67)	0.002*
Unemployed	170	67	0.3949 (0.221, 0.70)	0.484 (0.248, 0.942)	0.033*
Educational status					
No education	94	60	5.1 (2.52, 10.34)	2.56 (1.031, 6.39)	0.043*
Primary education	181	67	2.96 (1.49, 5.88)	1.75 (0.725, 4.231)	0.213
High school completed	106	21	1.58 (0.72, 3.46)	1.080 (0.431, 2.706)	0.869
Degree and above	88	11	1	1	

Selection criteria in binary logistic regression (bivariate analysis) at $p \leq 0.2$ and $*$at $p \leq 0.05$ are considered as statistically significant in multivariate analysis. OR: odds ratio.

3.6. Factors Associated with Sanitizer / Disinfectant Utilization

It was observed in this study that the odds of sanitizer utilization is 0.107 (AOR=0.107, CI: 0.37, 0.309) times less likely compared to Government employees. A negative association was also between sanitizer utilization and being daily laborers. With regard to educational status, the odds of sanitizer utilization among uneducated participants were 4.831 (AOR=CI: 2.18, 10.708) times more likely compared to those participants who are degree holders and above. There is also a significant association between sanitizer utilization and primary education, the odds of sanitizer utilization among participants with primary education are 3.697 (AOR=3.697, CI: 1.742, 7.846) time more likely compared to those participants who owned degree and above.

Table 9. *Binary logistic regression models identifying factors associated with sanitizer utilization Addis-Ababa, Ethiopia, March 2021.*

Variable	PPE utilization		COR 95% (CI)	AOR 95%(CI)	P-Value (Sig.)
	Yes	No			
Age					
18-29	58	47	0.990 (0.552, 1.777)	1.634 (0.794, 3.360)	0.18
30-39	129	68	0.644 (0.379, 1.094)	0.920 (0.498, 1.702)	0.791
40-49	115	57	0.606 (0.352, 1.043)	0.801 (0.432, 1.484)	0.48
50-59	45	28	0.760 (0.399, 1.450)	0.747 (0.373, 1.500)	0.413
>=60	44	36	1	1	
Occupation					
Governmental	62	6	1	1	
Private	71	25	0.069 (0.026, 0.185)	0.107 (0.37, 0.309)	0.000*
Daily laborer	93	66	0.252 (0.127, 0.500)	0.37590.174, 0.812)	0.013*

Variable	PPE utilization		COR 95% (CI)	AOR 95%(CI)	P-Value (Sig.)
	Yes	No			
Unemployed	137	100	0.507 (0.278, 0.928)	0.561 (0.290, 1.086)	0.086
Educational status					
No education	76	78	6.231 (3.261, 11.907)	4.831 (2.18, 10.708)	0.000*
Primary education	143	105	4.458 (2.401, 8.278)	3.697 (1.742, 7.846)	0.001*
High school completed	89	38	2.592 (1.312, 5.122)	2.301 (1.065, 4.972)	0.034*
Degree and above	85	14	1	1	

Selection criteria in binary logistic regression (bivariate analysis) at $p \leq 0.2$ and ∗at $p \leq 0.05$ are considered as statistically significant in multivariate analysis. OR: odds ratio.

3.7. Factors Influencing Physical Distancing

The odds of applying social /physical distancing among unemployed participants was 0.375 (AOR=0.375, 0.186, 0.756) less likely compared to Government employees and the odds of applying physical distancing among daily laborers is 0.387 (AOR=0.387, CI: 0.178, 0.840) times less likely compared to Government employees. A similar negative association was also observed between applying physical distancing and being private employees with (AOR=0.3559, CI; 0.151, 0.824).

Significant positive associations were observed between applying physical distancing and educational status of the participants. For example, the odds of applying physical distancing among uneducated participants is 2.414 (AOR=2.414, CI: 1.2494, 4.665) times more likely compared to degree holders.

Table 10. *Binary logistic regression models identifying factors associated with physical distancing utilization Addis-Ababa, Ethiopia, March.*

Variable	Physical distancing		COR 95% (CI)	AOR 95%(CI)	P-Value (Sig.)
	Yes	No			
Age					
18-29	48	57	0.751 (0.416, 1.367)	0.826 (0.407, 1.677)	0.597
30-39	103	94	0.577 (0.340, 0.981)	0.607 (0.329, 1.119)	0.110
40-49	86	86	0.633 (0.369, 1.088)	0.627 (0.34, 1.1570	0.135
50-59	31	42	0.857 (0.449, 1.636)	0.807 (0.406, 1.603)	0.540
>=60	31	49	1	1	
Occupation					
Governmental	42	26	1	1	
Private	50	46	0.206 (0.096, 0.442)	0.35590.151, 0.824)	0.016
Daily laborer	79	80	0.307 (0.151, 0.623)	0.387 (0.178, 0.840)	0.016
Unemployed	109	128	0.338 (0.174, 0.654)	0.375 (0.186, 0.756)	0.006*
Educational status					
No education	64	90	2.688 (1.592, 4.541)	2.414 (1.2494, 4.665)	0.009*
Primary education	109	139	2.438 (1.501, 3.959)	2.345 (1.294, 4.25)	0.005*
High school completed	62	65	2.004 (1.166, 3.444)	2.06 (1.12, 3.78)	0.020*
Degree and above	65	34	1	1	

Selection criteria in binary logistic regression (bivariate analysis) at $p \leq 0.2$ and ∗at $p \leq 0.05$ are considered as statistically significant in multivariate analysis. OR: odds ratio.

4. Discussion

Utilization of Personal Protective Measures:

The overall utilization of face masks in this study is about 74.3%. This is much lower than the face mask utilization in Hubei China which was about 98% [9]. The unprecedented measures adopted by the Chinese Government to control the rapid spread of the ongoing COVID-19 epidemic may have contributed a lot to have highest utilization of face masks. With regard to practicing social (physical) distancing, in this study about 47.8% of the respondents apply physical distancing daily. A study conducted in South Korea revealed that 92.3% of the study participants reported practicing physical distancing [10]. It was indicated in many literatures that practicing transmission-reducing behaviors in Korea and China were also common activities even during MERS-CoV. This may be one of the reasons for the low practicing of physical distancing in Ethiopia and for having big discrepancies between the two studies.

In this study nearly 83% of participants reported they frequently washed their hands with soap and water. A similar study conducted among students in Kampala, Uganda revealed that only 41% of the students always wash their hands with soap and running water [11]. The discrepancy between the two studies may occur as a result of variations in sampling, study settings and preferences in study participants. The proportion of study participants who frequently rub their hands with sanitizer in Addis –Ababa and Kampala are 26.6 and 22% respectively. Hence, remarkable difference is not observed between the two studies.

In this study, social distancing reported as the most cost efficient measure to halt the progress of COVID-19. A study conducted. A systematic review conducted in India indicated

that Social distancing, specifically lockdown, was the most commonly modeled intervention strategy [12].

Our study revealed that the odds of face mask utilization among study participants who were in the age range of 40-49 years were 0.458 (AOR=0.458, CI: 0.224, 0.93) times less likely to use face masks compared to those participants in the range of 60 and above. A similar study conducted in Hong Kong, China indicated that women of age 50-59 group, and married respondents were more likely to wear facemasks compared to women with other age groups [13].

5. Conclusion

Utilization of face masks is highest (79%) among private employees followed by daily laborers (76%) and unemployed people (72%) while lowest utilization of face masks was observed among Government employees (58.8%). More than half of them 338 (53.3%) reported socio-economic challenges as a result of adherence to CCOVID-19 prevention and Control measures. In this study the odds of face mask utilization among participants whose age 30-39 years is 0.446 (AOR=0.446, CI: 0.22, 0.91) times less likely to use face masks compared to those participants who were in the age range of 60 and above. The odds of face mask utilization among daily laborers is 0.33 (AOR=0.33, CI: 0.16, 0.67) times less likely compared to Government employees. With regard to educational status, the odds of sanitizer utilization among uneducated participants were 4.831 (AOR=CI: 2.18, 10.708) times more likely compared to those participants who are degree holders and above.

Declarations

Authors Contribution

GW hypothesized and developed objective, managed database development & analysis and revised the manuscript. EM was responsible for assisting in data analysis and revised the manuscript revision. AY and AK assisted in training data collectors, and data analysis, and revising the manuscript.

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Availability of Data and Materials

The datasets used and/or analyzed during the current study are not publicly available, but are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

Ethical clearance was obtained from Ethiopian Public Health Association, and ARV of Yekatit 12 hospital medical college. A formal letter obtained from Addis Ababa city health bureau was submitted to the respective administration levels of the Hospitals. The purpose of study was well explained to the study participants and informed consent was obtained. The confidentiality of the information and respondents were well respected.

Competing Interest

The authors declare that they have no competing interests.

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