Practice of COVID-19 Prevention Measures and Its Associated Factors Among Resident at Tepi Town, Southwest Ethiopia

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Abstract: *Background:* Even though Coronavirus generates social, political, and economic difficulties, people's prevention practices were inadequate. A better understanding of the magnitude and determinants of practices of the COVID-19 preventive measures is required to create appropriate interventions. This study aimed to assess the practices and associated factors of the COVID-19 preventive measures among Tepi town residents. *Methodology:* A community-based cross-sectional study was conducted among residents of Tepi town from November 15th through November 25th, 2020. Residents who live in Tepi town at least for six months were included. To determine the prevalence and determinants of the practice of COVID-19 prevention measures, both descriptive and inferential analyses were used. Chi-square test of association and logistic regression was used to identify factors associated with practice of COVID-19 prevention measures among residents of Tepi town. We used SPSS version 25 for all statistical analyses. *Results:* Overall prevalence of practicing COVID-19 preventative measures amongst Tepi town residents was 38.0%. According to results of multivariable binary logistic regression, being male [AOR=2.103; 95%CI: 1.207-3.663], being over 45 years old [AOR=3.45, 95%CI: 1.808-6.610], being married [AOR=1.44; 95%CI: 1.030-2.050], having a diploma or higher level of education [AOR=2.66; 95%CI: 1.178-6.015], being alcoholic [AOR=0.393; 95%CI: .228- .677], being a smoker [AOR=0.242; 95%CI: 0.114-0.512], having favorable attitude [AOR= 4.952; 95%CI: 2.897-8.464], and having good knowledge about COVID-19 prevention measures [AOR=1.814, 95%CI: 1.853-5.158] were significantly associated with the practice of COVID-19 prevention measures. *Conclusion:* In this study, the prevalence of the practice of COVID-19 prevention measures was found to be low among residences of Tepi town. Being male, being over 45 years old, being married, having a diploma or higher level of education, being an alcoholic, being a smoker, having a favorable attitude, and having good knowledge about COVID-19 prevention measures were all significantly associated with the practice of COVID-19 prevention measures among Tepi town residents. Interventions should be implemented to encourage residents of Tepi town to practice preventive measures.

Keywords: COVID-19, Practice, Prevention Measures, Lockdown

1. Introduction

Coronavirus disease 2019 (COVID-19) is a disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which was originally detected in Wuhan, Hubei Province, China [1]. On December 31, 2019, it was first reported to the World Health Organization (WHO), and

the WHO designated the COVID-19 outbreak a worldwide health emergency on January 30, 2020 [2, 3].

COVID-19 is spread by human contact, typically through droplets from an infected person coughing, sneezing, or speaking. It can also be contracted by contacting a contaminated surface and then touching the eyes, nose, or mouth without washing hands [4]. COVID-19 is more

common in adults over 60 years, those with respiratory or cardiac problems, diabetes, a disorder that compromises the immune system, and babies. COVID-19 causes symptoms such as cough, sneezing, fever to touch, headache, and difficulty breathing throughout the incubation period of 2–14 days [5, 6]. Hand washing, wearing a mask, avoiding crowded areas, keeping a safe distance, ventilating the room, covering the nose and mouth when coughing/sneezing, avoiding close contact with animals, and avoiding consumption and handling of raw meat are all recommended by WHO to prevent the spread of COVID-19 [7-10, 11].

Many countries have devised strategies to prevent and stop the spread of COVID-19, avert outbreaks, and provide optimal treatment for all infected people, including the seriously ill, as well as the impact of COVID-19 on the healthcare system, social services, and financial operations [12]. International specialists and African governments have raised alarm about the development of COVID-19, saying that if no action is taken, over 2 million people will die in Sub-Saharan Africa [3].

With the aid of the World Health Organization and other partners, Ethiopia, Africa's second-most populous country, is imposing COVID-19 preventive and treatment approaches. Surveillance, diagnosis, infection prevention and control, pandemic response coordination, and community health education are all priorities for the country's health authorities in order to swiftly detect cases and limit the disease's spread. The travel ban imposed by COVID-19 has had a substantial impact on the economy and has hampered efforts to achieve the Sustainable Development Goals (SDGs) in SSA, especially Ethiopia, which is reliant on foreign funding [13]. There is an inadequate capability for tracing, testing, confirmation, isolation, and treatment of persons affected in Ethiopia due to poor public health systems, deprived public health sectors, and an insufficient number of specialized hospitals [13]. In Ethiopia, cases of coronavirus disease 2019 (COVID-19) and consequent mortality are on the rise [7, 14]. Despite the use of various types of media to raise awareness, COVID-19 preventative practice was poor, with only nearly half of participants practicing social distance, handwashing, and wearing masks [15].

According to a study conducted in Southwest Ethiopia, the current state of knowledge and desirable practices regarding COVID-19 preventative strategies are insufficient to tackle this rapidly spreading virus [16]. As a result, the goal of this study was to evaluate the practice of COVID-19 preventive methods and associated factors in Tepi town, southwest Ethiopia.

2. Methods

2.1. Study Sample and Setting

A community-based cross-sectional study was conducted between November 15th through November 25th, 2020 at Tepi town, Southwestern Ethiopia. Residents who live in Tepi town at least for six months were included. For this study, the self-administered questionnaire was developed and data from 424 residents were obtained.

2.2. Sampling Procedure

The sample size was calculated using a single population proportion formula, and a simple random sampling technique, using the following assumptions [17].

$$n_o = \frac{\left(Z_{\frac{\alpha}{2}}\right)^2 p(1-p)}{d^2} \tag{1}$$

Assuming a 95% level of confidence, $Z_{\frac{\alpha}{2}}$ =1.96. Moreover, considering maximum sample side, p = 50% was used, and d = margin of error = 5%. Therefore: $n_o = \frac{(1.96)^2\, 0.5(1-0.5)}{0.05^2} = 384.15 \approx 385$ Then by considering the 10% none respondent rate, the size yields $385 + 38.5 \approx 423.5 \approx 424$

2.3. Data Collection Tools and Measurements

A structured interview-based questionnaire was used to obtain information of the study participants related to sociodemographic characteristics. In addition to this, knowledge, attitude, and practice (KAP), toward COVID-19, which were used in different studies [18, 19].

Seven questions assessed the knowledge of the COVID-19 prevention measure. The questionnaire assessing knowledge toward COVID-19 was answered on a "Yes", "No", or "Don't know" basis. The prevention knowledge assigning one point for each correct answer (yes), and zero otherwise. The total knowledge score ranged from 0 to 7 and using Bloom's cutoff point, as good if the score was between 80 and 100% (i.e. ≥ 5 points), and poor, if the score was less than 80% (< 5 points).

Six questions assessed the practice of COVID-19 prevention measure and each scored 0 and 1 (0 = No, 1 = Yes). Practice score ranged from 0 to 6 and using Bloom's cutoff point, as good if the score was between 80 and 100% (≥4 points), and poor, if the score was less than 80%, (<4 points).

The question regarding attitude [7], was nine (with a minimum score of 9 and a maximum score of 45). The score was based on 5 points Likert scale, in which a score of 1 to 5 was given from strongly disagree to strongly agree. A sum score, ≥ 28 (answering strongly agree or agree) was carried out as a favorable (positive) attitude and a score of 9 to 27 (answering strongly disagree or disagree or neutral) indicated an unfavorable (negative) attitude. A similar measurement was used in previous studies by [19, 20].

2.4. The Study Variables

The outcome variable was the practice of COVID-19 prevention measures, which was dichotomized as ("good" and "poor" practice).

The explanatory variables were: the socio-demographic factors (gender, age (in years), education status, religion, source of income), COVID-related factors (knowledge, and attitude towards prevention measures).

2.5. Statistical Data Analysis

We performed all statistical analyses using (IBM) SPSS version 20. To highlight descriptive results, we used frequency distribution and percentages. In the current study, the logistic regression model was used to identify predictors associated with the practice of COVID-19 prevention measures. From multivariable binary logistic regression, two-sided statistical tests were judged statistically significant with a p-value < 0.05.

2.6. Statistical Models

2.6.1. Binary Logistic Regression

Binary logistic regression is the form of regression that is used when the dependent variable is dichotomous and the independent variables are of any type. It is applicable only when we have a binary variable, which has two possible values, such as the presence or absence of a particular event. The Bernoulli distribution for Bernoulli trial specifies probabilities P (Y =1) = π and P(Y=0) =1- π, for which E (Y) = π.

The general model for binary logistic regression is as follows:

$$logit(\pi(x_i)) = \log\left(\frac{\pi(x_i)}{1-\pi(x_i)}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k \quad (2)$$

Where: x_i is an independent variable in the model, π: the probability of success, 1-π: the Probability of failure, β_o is constant terms, β_i is the coefficients/slope of the independent variable in the model.

2.6.2. Parameter Estimation

The maximum likelihood and Wald test were used for parameter estimation methods in fitting the logistic regression model [21].

The maximum likelihood estimates of the parameters could be obtained by maximizing the log-likelihood function from is given by

$$\pi(x_i) = \frac{\exp(\beta o + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_K X_k)}{1 + \exp(\beta o + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_K X_k)} \quad (3)$$

Since observing values of Y say, $Y_i's$ $(i = 1, 2 \dots n)$ are independently distributed as Bernoulli, the maximum likelihood function of Y is given by:

$$L(\beta / y) = \prod_{i=1}^{n} P(y_i / x_i) = \prod_{i=1}^{n} \left[\frac{e^{x_i\beta_i}}{1 + e^{x_i\beta_i}}\right]^{y_i} = \left[\frac{1}{1 + e^{x_i\beta_i}}\right]^{(1-y_i)} \quad (4)$$

2.6.3. The Wald Test Statistic

The Wald test is a way of testing the significance of particular explanatory variables in a statistical model [22]. Wald χ^2 statistics are used to test the significance of individual coefficients in the model and are calculated as follows:

$$W = \left(\frac{\beta}{se(\beta)}\right)^2 \sim \chi^2_{(1)} \quad (5)$$

Where se (β) is the standard error of regression coefficient β. W assumes chi-square distribution with one degree of freedom.

2.7. Model Adequacy Checking

The Hosmer and Lemeshow test is commonly used to test for assessing the goodness of fit of the model and allows for any number of explanatory variables [22]. The receiver operating characteristic curve has been considered as a statistical tool to evaluate the performance of model adequacy and it is a common technique for judging the accuracy of the fitted binary logistic regression model [23].

2.8. Ethical Approval and Considerations

The research review committee of Mizan Tepi University, College of Natural and Computational Science, approved this study. The investigators informed the study participants about the overall goal of the research and their responses would be kept anonymous to guarantee the confidentiality of the information they gave. Therefore, every respondent's consent for participation was informed before proceeding to fill the questionnaire. Furthermore, the study was conducted as the declaration of Helsinki.

3. Results

Of all 424 participants who took place in this study, 263 (62.0%) had a poor practice of COVID-19 prevention measures, while 16138.0%) had a good practice. Of all study participants who took place in this study, more than half 223 (52.6%) were males, of which 64 (28.7%) had good practice of COVID-19 prevention measures and 159 (71.3%) had poor practice.

Only 110 (25.9%) of participants were aged above 46 years; however, a relatively large percentage, of them (60.9%)

had good practice of COVID-19 prevention measures.

Regarding education status, of 424 study participants, 70 (16.5%), 150 (35.4%), and 204 (48.1%) had no formal education, primary/secondary, diploma, and above respectively. The result also showed that 179 (42.2%) of the participants were single, of which more than half (58.1%) had poor practice, while 166 (39.2%) were married of which about two-thirds (64.5%) had a poor practice of COVID-19 prevention measures.

Furthermore, about half 215 (50.7%) of respondents had a family size of between three and five among this, 131 (60.9%), had a poor practice of COVID-19 prevention methods. About two-thirds, 260 (61.3%) of participants had monthly income 1001- 4000 ETB. Regarding the religion of respondents, 175 (41.5), 84 (19.9), 98 (23.2), and 65 (15.4) were orthodox, protestant, Muslim, and others respectively. (*Table 1*).

Out of the total, 152 (35.8), 125 (29.5), and 110 (25.9) had alcohol, Khat, and smoking habit respectively.

Table 1. *Descriptive Result of Socio-Demographic Variables.*

Variable	Categories	N (%)	Practice of COVID-19 PM		P-value[1]
			Poor	Good	
			N (%)	N (%)	
Sex	Male	223 (52.6)	159 (71.3)	64 (28.7)	<.001
	Female	201 (47.4)	104 (51.7)	97 (48.3)	
Age (in years)	18-30	150 (35.4)	99 (66.0)	51 (34.0)	
	31-45	164 (38.7)	121 (73.8)	43 (26.2)	<.001
	46 And Above	110 (25.9)	43 (39.1)	67 (60.9)	
Marital status	Single	179 (42.2)	104 (58.1)	75 (41.9)	
	Married	166 (39.2)	107 (64.5)	59 (35.5)	0.022
	Divorced	63 (14.9)	43 (68.3)	20 (31.7)	
	Widowed	16 (3.8)	9 (56.2)	7 (43.8)	
Religion	Orthodox	175 (41.5)	118 (67.4)	57 (32.6)	
	Protestant	84 (19.9)	51 (60.7)	33 (39.3)	0.334
	Muslim	98 (23.2)	58 (59.2)	40 (40.8)	
	Other	65 (15.4)	36 (55.4)	29 (44.6)	
Education status	No formal education	70 (16.5)	41 (58.6)	29 (41.4)	
	Primary/Secondary	150 (35.4)	105 (70.0)	45 (30.0)	0.012
	Diploma And Above	204 (48.1)	117 (57.4)	87 (42.6)	
Average monthly income	≤ 1000	45 (10.6)	23 (51.1)	22 (48.9)	
	1001- 4000	260 (61.3)	156 (60.0)	104 (40.0)	0.005
	≥ 4001	119 (28.1)	84 (70.6)	35 (29.4)	
Family size	Below 2	107 (25.2)	67 (62.6)	40 (37.4)	
	3-5	215 (50.7)	131 (60.9)	84 (39.1)	0.044
	Above 6	102 (24.1)	65 (63.7)	37 (36.3)	
Alcohol habit	No	272 (64.2)	151 (55.3)	121 (44.7)	<.001
	Yes	152 (35.8)	105 (68.9)	47 (31.1)	
Khat chewing habit	No	299 (70.5)	186 (62.3)	113 (37.7)	0.003
	Yes	125 (29.5)	77 (61.7)	48 (38.3)	
Smoking Habit	No	314 (74.1)	84 (26.7)	230 (73.3)	<.001
	Yes	110 (25.9)	61 (55.0)	49 (45.0)	
Occupation	Government Employee	88 (20.8)	55 (62.5)	33 (37.5)	
	Private Worker	103 (24.3)	66 (64.1)	37 (35.9)	
	Merchant	98 (23.1)	58 (59.2)	40 (40.8)	0.048
	Student	93 (21.9)	58 (62.4)	35 (37.6)	
	Other	42 (9.9)	26 (61.9)	16 (38.1)	
Total			62.0%	38.0%	

[1]Pearson chi-square p-value.

Regarding occupation of the participants, 88 (20.8%), 103 (24.3%), 98 (23.1%), 93 (21.9%), and 42 (9.9%) were government employees, private workers, merchant, student, and other respectively. (*Table 1*).

Table 2. *Knowledge and Attitude towards COVID-19 Prevention Measures.*

Variable	Categories	N (%)	Practice of COVID-19 PM		P-value[1]
			Poor	Good	
			N (%)	N (%)	
Attitude	Unfavorable	245 (57.8)	187 (76.3)	58 (23.7)	<.001
	Favorable	179 (42.2)	76 (42.5)	103 (57.5)	
Knowledge	Poor	253 (59.7)	178 (70.4)	75 (29.6)	<.001
	Good	171 (40.3)	85 (49.7)	86 (50.3)	

[1]Pearson chi-square p-value.

3.1. Knowledge and Attitude Towards COVID-19 Prevention Measures

Of all 424 study participants, more than half 245 (57.8%) had an unfavorable attitude of which about three fourth 187 (76.3%) had poor practice, while 179 (42.2%) had a favorable attitude towards COVID-19 prevention measures. Results also showed that 253 (59.7%) had poor knowledge of which 178 (70.4%) had poor practice, while 171 (40.3%) had good knowledge about COVID-19 prevention measures. (*Table 2*).

3.2. Univariable Analysis

In the Univariable analysis, covariates with a p-value less than or equal to 25% were considered for multivariable analysis. From the Univariable analysis, we observed that the covariate sex, age, monthly income, alcohol habit, Khat chewing habit, smoking habit, education status, family size, attitude, and practice of COVID-19 were significant. However, religion and occupation were not a significant at 25% level of significance. Therefore, based on this result, it is better to ignore these covariates and shall do our multivariable analysis using the significant factors. Hence, the effects of these significant covariates shall better be interpreted using the multivariable analysis.

3.3. Multivariable Binary Logistic Regression Results

According to the result of the multivariable binary logistic regression model, gender (being male), age (above 45), marital status (married), education status (diploma and above), alcohol habit, smoking habit, attitude, and knowledge about COVID-19 prevention measures were significantly associated with the practice.

Table 3. Multivariable Binary Logistic Regression Results.

Variables	Categories	B	S.E.	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Gender (Ref: Male)	Female	.743	.283	.009	2.103	1.207	3.663
Age (in years) (Ref: 18-30 years)	31-45	-.577	.309	.062	.562	.307	1.028
	Above 45	1.240	.331	<0.001	3.457	1.808	6.610
Education (no formal education)	Primary/secondary	-.586	.394	.137	.556	.257	1.204
	Diploma and above	.979	.416	.019	2.66	1.178	6.015
Marital status (Ref: Single)	Married	.371	0.175	0.011	1.44	1.030	2.050
	Divorced	-.392	.409	.338	.676	.303	1.506
	Widowed	.110	.656	.867	1.116	.309	4.038
Family size (Ref: less than 2)	3-5	-.081	.310	.794	.922	.502	1.693
	Above 6	-.114	.368	.756	.892	.433	1.836
Average monthly income (Ref: below 1000)	1001- 4000	-.442	.431	.305	.643	.276	1.495
	≥ 4001	-.547	.475	.249	.578	.228	1.466
Alcohol consumption (Ref: No)	Yes	-.935	.278	0.001	.393	.228	.677
Chewing Khat (Ref: No)	Yes	.034	.258	.894	1.035	.624	1.716
Smoking habit (Ref: No)	Yes	-1.42	.383	<0.001	0.242	0.114	0.512
Attitude (Ref: unfavorable)	Favorable	1.600	.273	<0.001	4.952	2.897	8.464
Knowledge (Ref: Poor)	Good	1.129	.261	<0.001	3.092	1.853	5.158
Nagelkerke's R Square	0.735						
Hosmer and Lemeshow Test	0.074						

B: Coefficient, S.E.: Standard error, Sig.: p-value, Exp (B): Odds ratio, C.I.: 95% confidence interval for odds ratio.

3.4. Sociodemographic Characteristics

Females were 2.103 [AOR=2.103; 95%CI: 1.207-3.663] time more likely to practice COVID-19 prevention measures as compared to males. Our study revealed that age was significantly associated with the practice of COVID-19 prevention measures. Participants aged above 45 years were 3.45 [OR=3.45, 95%CI: 1.808-6.610] times more likely to practice COVID-19 prevention measures as compared to participants aged below 20 years.

The study result suggested that marital status (married) was 1.44 [AOR=1.44; 95%CI: 1.030-2.050] times more likely to practice COVID-19 prevention measures as compared to single.

Odds of practicing COVID-19 prevention measures for participants who had education status of diploma and above were 2.66 [AOR=2.66; 95%CI: 1.178-6.015] time higher than those who have no formal education (*Table 3*).

3.5. Substance Use

Moreover, alcohol consumption was another factor associated with the practice of COVID-19 prevention measures among residents. Those who had alcohol habits were .393 [AOR=0.393; 95%CI: .228- .677] times less likely to practice COVID-19 prevention measures. Smokers were 0.242 [AOR=0.242; 95%CI: 0.114-0.512] times less likely to practice COVID-19 prevention measures as compared to non-smokers. (*Table 3*).

3.6. Attitude and Knowledge of Participants Toward COVID-9 Prevention Measures

Attitude towards COVID-19 prevention measures was significantly associated with practices of COVID-19

prevention measures among residences of Tepi town. Those who have a favorable attitude towards COVID-19 prevention measures were 4.952 [AOR= 4.952; 95%CI: 2.897-8.464] time more likely to practice prevention measures.

Furthermore, having good knowledge about COVID-19 prevention measures was 3.092 [AOR=1.814, 95%CI: 1.853-5.158] times more likely to practice COVID-19 prevention measures as compared to those who had poor knowledge. (*Table 3*).

3.7. Model Adequacy Checking

Hosmer and Lemeshow Test with (p-value = 0.074) indicate that the model fits data well. Furthermore, Nagelkerke's R= 0.735, suggested that 73.5% of the variation among response variable were explained by existed explanatory variables in the model while remaining 26.5% were accounted by error terms and unseen factors (*Table 3*).

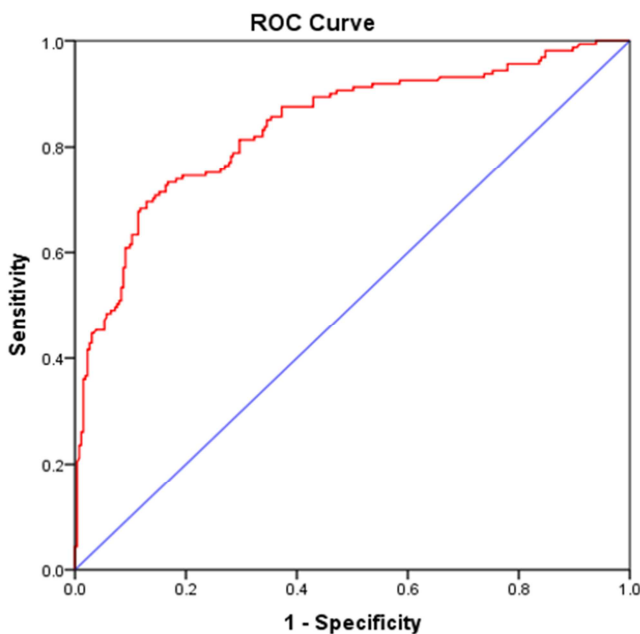### 3.8. Receiver Operating Characteristic Curve

Figure 1. Receiver operating characteristic curve for the fitted model.

It has been considered as a statistical tool to evaluate the performance of model adequacy and it is a common technique for judging the accuracy of the fitted binary logistic regression model. It indicates the likelihood for a whole range of possible cut-points to recognize true signal (sensitivity) and false signal (1 specificity). The area under the ROC curve indicates how good the test is. The ideal curve has an area of 1, the worst-case scenario is 0.5, with the most practical test giving values of somewhere in between. In this study, for the given model (*Table 3*), a plot of sensitivity versus 1-specificity over all possible cut points is shown in (*Figure 1*). The curve generated by these points is called the ROC curve and the area under this curve is determined by the Mann-Whitney U statistic and is 0.839. Accuracy is measured by the area under the ROC curve. If

the area lies $0.8 \leq ROC < 0.9$, it is considered the model performance is excellent. Therefore, based on the area under the curve indicates our model performance is excellent.

4. Discussion

The goal of this study was to analyze practices of COVID-19 disease prevention measures and associated factors among residences of Tepi town, Southwest Ethiopia. According to current findings, 62.0% of Tepi town residents had a poor practice of COVID-19 disease prevention methods, whereas the remaining 38.0% had good practice with the pandemic preventive strategies. This finding is lower than several studies conducted in Syria (73.8%), Pakistan (80.5%), Sudan (89.9%), China (87.9%), Uganda (85.3%), and Northeastern Ethiopia 71.4% [24-29]. This variation could be attributable to socioeconomic position and infrastructure availability as well as the data collection methods.

Females were almost two times more likely than males in our study to use COVID-19 preventive strategies. This conclusion was supported by research undertaken in Dire Dawa, Ethiopia [7]. This could be because women spend the majority of their time at home and are therefore more likely to wash their hands. In addition, when compared to males, most females are active in childcare, food preparation, and other chores. As a result, females are more inclined to take preventive steps to protect themselves and others from infection.

In this study, participants who had a college or a higher educational level were 2.66 times more likely to practice the disease prevention measures than those who had no formal education. This was supported by research from Ethiopia and Nepal [30-32]. When compared to single individuals, married populations were 1.44 times more likely to use COVID-19 preventive measures. This finding was validated by several studies conducted in Eastern Ethiopia and Malaysia [7-9, 33]. This could be explained by the fact that people who are married have a higher economic income, which leads them to buy disease prevention equipment like the mask and other instruments. In addition, this group may also be responsible for their partner and children.

When compared to their peers, those with good knowledge of COVID-19 were 3.09 times more likely to conduct COVID-19 prevention measures. This discovery is in line with research conducted in China, Dire Dawa city, and the Amhara region in Ethiopia [7, 34, 35]. This could be because knowledge is the most important moderator of positive attitudes toward COVID-19 preventive actions, and these activities are only carried out once the participants have gained awareness and knowledge of the tasks at hand. COVID-19 knowledge reduces the risk of infection by enhancing patients' infection prevention activities. Individuals' knowledge of coronavirus disease (COVID-19) signs and symptoms, transmission, treatment, and how to prevent infection will increase their prevention practice, and they may be implemented. The guideline's key messages include how to choose and wear face masks, proper

handwashing habits, and preventive measures at various locations (e.g., at home, on public transportation, and at the workplace) [7, 36].

When compared to non-smokers, those who smoke were 0.242 times less likely to perform COVID-19 prevention. This could be due to the fact that smokers are more prone to go out and buy cigarettes in groups, making keeping a safe distance more difficult. When compared to those who had an unfavorable attitude toward COVID-19 prevention, those who had a favorable attitude were 4.95 times more likely to exercise COVID-19 prevention methods. A study conducted in Dire Dawa city and the Amhara region supports this conclusion. [7, 35]. This could be because having a positive attitude makes people more aware of COVID-19 preventative strategies and encourages them to utilize them.

Based on this study findings, respondents aged 45 and above were 3.46 times more likely to practice the preventions methods than those aged 18 to 30 years (AOR: 3.46; 95% CI: [1.81, 6.61]). This finding is consistent with studies undertaken in India, Egypt, Gondar, and the Dire Dawa City Administration and Peri-Urban Areas in Northeastern Ethiopia [7, 24, 37-39]. This might be due to the elderly had a higher risk of getting diseases and having consequences from them, they employed more effective prevention measures.

5. Limitations and Strengths of Study

The goal of the study was to determine the risk factors that were linked to residents' failure to perform COVID-19 prevention measures. The study's significant weakness was that study participants might be worried about being penalized if they did not disclose the correct information since they did not follow COVID-19 prevention regulations and protocols. The questionnaires in the survey were based on many previous questionnaires created by experts, which had a high level of reliability, which was one of the study's strengths.

6. Conclusion

The current study contributes to the investigation of the determinant factors linked to residents' failure to apply COVID-19 prevention strategies. Younger people, males, smokers, alcoholics, and those with less education level showed a lower level of adherence to preventive measures. More intervention should be used by either communicating with or reaching out to these populations to practice the disease's preventive measures. The government and other stakeholders should have taken enormous steps to halt the disease's spread and educate all segments of the population about it.

Data Availability Statement

Data used in the current is available on reasonable request to the corresponding author.

Conflicts of Interest

The authors declare that they have no competing interest.

Abbreviation

COVID-19	Corona Virus Disease 2019
ROC	Operating Characteristic Curve
WHO	World Health Organization

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