ORIGINAL RESEARCH

Knowledge, Attitudes, and Practices Toward Covid-19 and Associated Factors Among University Students in Mizan Tepi University, 2020

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Background: A coronavirus pandemic has reached all over the world. It is a highly contagious virus spreading from human to human by respiratory droplet infection and close contact. Applying preventive measures is very important in tackling the spread of the disease since there is no curative antiviral drug. The pandemic of the virus has impacted different institutions including the university. To overcome the impact, students are resuming face to face education by applying preventive measures of Covid-19. This study is undertaken to assess KAP in Mizan Tepi University, 2020.

Materials and Methods: A cross-sectional study was conducted among 402 randomly selected participants. A structured questionnaire was used to collect the data from December 1–10/2020. Data were entered into Epidata 3.1 and exported to SPSS version 21 for analysis. Bivariate and multivariate logistic regressions were used for analyses. A p-value of less than 0.05 was used to identify significant variables in multivariate logistic regression analysis.

Results: In this study, 47%, 54%, and 42.8% of the students had good knowledge, positive attitude, and good practice towards Covid-19, respectively. Being from health sciences (AOR= 2.983, 95% CI (1.869, 4.763)) was significantly associated with good knowledge. Being from health sciences (AOR= 1.86, 95% CI (1.169, 2.970)), female sex (AOR=0.628, 95% CI (0.405, 0.975)), at least one parent having diploma or degree (AOR= 0.455, 95% CI (0.236, 0.878)), and 1000–1500 ETB monthly income (AOR= 0.403, 95% CI (0.189, 0.856)) were significantly associated with students' attitude. Being rural residence (AOR = 1.740, 95% CI (1.136, 2.663)), positive knowledge (AOR=1.893, 95% CI (1.2322.909)), and positive attitude ((AOR=2.676, 95% CI (1.745, 4.105)) were positively associated with the students practice.

Conclusion: The KAP of the students towards the Covid-19 was low. Being a health sciences student was an explanatory variable for better knowledge. Sex, being a health science college student, parents' educational status, and monthly income were predictors of students' attitude. Residency, knowledge, and attitude were independent predictors of practice. Awareness creation on preventive behaviors among the students is highly recommended.

Keywords: Covid-19, knowledge, attitude, practice, Mizan Tepi University

Introduction

A coronavirus is a highly contagious virus causing severe acute respiratory diseases in human beings. It is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is a highly pathogenic virus.[1] The virus has emerged in China, Wuhan state in December 2019.[2] Following the report from China to the world health organization (WHO), WHO declared the diseases as a public health

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emergency on January 30.[3] Since its emergence, it becomes a global concern causing 46 million mortality and 1.2 million deaths globally.[4]

Developing countries are also suffering from the Covid-19 pandemics. In Ethiopia, the first case of Covid-19 is confirmed on 13 March 2020. After the confirmation of the first case, to mitigate the spread and to safeguard the population, Ethiopia declared a state emergency. In addition to many prohibitions, one of the actions taken by the government was banning the students from face-to-face education and discharging the university students to their home by the closing school.[5] Currently, according to world meter report in-country, there were a total of 121,880 mortality and 1,897 death caused by Covid-19.[6]

The virus is spread by small droplets discharged from cases during coughing, sneezing, and talking. It is also transmittable by contaminating the nose and mouth with contaminated hands contaminated surfaces containing the virus. The virus has an incubation period that may range from 2 to 14 days with the main clinical manifestations of fever, cough, and shortness of breath. The virus has no curing antiviral treatment and applying the measures to reduce the transmission remains the mainstay of prevention.[7–9]

Knowledge, attitude, and practices (KAP) are important in controlling the spread of the disease. Knowing the cause of the disease, signs/symptoms, and the possible methods of prevention can facilitate the proactive application of preventive measures.[10]

Students are now being in return to their institutions to continue the banned education with serious application of preventive measures. These groups are at risk, and the existence of a single case can cause pandemics among students. And applying essential preventive measures to reduce such risk in this group is important. But there is a shortage of findings in Ethiopia that identified the KAP among students towards Covid-19. Therefore, this study is undertaken to determine the KAP of students towards Covid-19 in Mizan Tepi University, southern Ethiopia, 2020.

Materials and Methods
Study Setting and Design
The study was conducted in Mizan Tepi University. Mizan Tepi University, Mizan campus is a governmental higher institution located at 568.4 km from Addis Ababa in southern direction. The campus has a total of 2054 graduating students. This institutional-based quantitative cross-sectional study design was conducted from December 1–10/2020.

Source Population
All regular graduating class of the Mizan Tepi University, Mizan Campus.

Study Participants
Sampled graduating students during the time of data collection were the study participants.

Inclusion and Exclusion Criteria
All undergraduate students during the time of data collection were included in the study. Students who were severely ill and unwilling to participate in the study were excluded from the study.

Sample Size and Sampling Technique
The sample size was determined by using a single population proportion formula. Based on the assumption of a 95% confidence interval, 5% margin of error, the proportion of knowledge, attitude and practice towards Covid-19 among students to be 50% and 10% non-response rate; a total sample of 422 was needed.

First, 10 departments were randomly selected by the lottery method from a total of 24 departments. The proportional allocation was made to 10 departments based on their numbers to get 422 samples. Students list was obtained from their respective departments and a simple random method was used to select the study participants by lottery method.

Data Collection Tool, Quality Control, and Procedure
The questionnaire for this study purpose was developed and designed for local context after reviewing relevant studies which were used to assess the similar purpose.[11,12] This structured questionnaire had four essential components related to participants' socio-demographic characteristics, knowledge-related questions, attitude related questions, and practice-related questions about Covid-19. One day orientation on data collection was given to five data collector lectures. Before actual data collection, pretesting was done on 21 students who did not participate in the study. Based on that, necessary corrections were made. Questionnaires were self-administered and all data

collectors and supervisors strictly adhered to the WHO and Ethiopian ministry of health guidelines. Based on that, the data collectors have had gloved hand, worn mask, maintained social distancing, and used hand sanitizers between each questionnaire administration.

Thirteen items were used to assess the knowledge of students about Covid-19. The items assess the knowledge regarding the etiology, transmission route, incubation period, susceptibility, clinical manifestations, and methods of prevention. All questions have one correct answer and participants' responses were scored by giving one point to correct answers and 0 for incorrect answers including the "I don't know" response. All responses were summed up and it has a possible value of 0 to 13. To classify the respondents as having good and poor knowledge, the mean knowledge score was computed and participants having greater or equal to mean knowledge score were considered as having good knowledge.

Similarly, seven items were used to assess the attitude of the students. The item was having rating responses and for each item, 2 points were given if the response is positive, 1 for a neutral response, and 0 for negative responses. Based on that, the participants may have a possible value from 0 to 14. The mean attitude score was computed and participants who scored greater or equal to the mean were considered as having a positive attitude.

Practice was measured by 8 items assessing the adherence to preventive measures like wearing mask, washing hands in regular manner with soap, water and disinfectants, practice of proper methods of coughing, limiting of presence in people gathered areas, maintaining social distancing, actions to be taken if contact with confirmed case, actions to be taken if cured cases wanted to contact and actions to be taken if they develop signs and symptoms of Covid-19. Participants' response was scored by giving 1 for possible response "often or more" and 0 for "rarely or less". Similarly 1 was given for questions requiring proactive measures to be taken and 0 for responses like "I don't know what to do". The mean of practice score was computed and participants practice status is dichotomized to good practice and poor practice. In such way that individuals were considered as having a good practice if they score greater or equal to the mean practice score.

Data Processing and Analysis

Data were entered into Epidata 3.1 version after a manual check for completeness, skip patterns, and wrong coding which was corrected in the study site. The entered data were exported to SPSS version 21 for analysis. Descriptive statistics using a table of frequency distribution were used to summarize the results such as socio-demographic characteristics, knowledge, attitude, and practice. Then, the data were presented by using sentences, graphs, tables, frequencies, percentages. Both bivariate and multivariate logistic regressions were used to identify the independent predictors of knowledge, attitude, and practice. Crude odds ratio (COR) was used to identify an association between factors and dependent variable at p < 0.25 in bivariate logistics, and to select candidate variables for multivariate logistic regression. An adjusted odds ratio (AOR) was used to describe the strength of association between the factors and dependent variables in multivariate logistics at p < 0.05.

Ethical Considerations

The study was conducted in accordance with the declaration of Helsinki, and a formal letter was obtained to conduct the study from nursing department, Mizan Tepi University. Confidentiality of the respondents was secured by excluding respondent identifiers like a name. Informed written consent was obtained from the respondents before conducting the study. All of the data collectors were strictly adhered to WHO and the ministry of health Ethiopia guidelines for Covid-19 prevention.

Results
Socio-Demographic Characteristics of the Students

Out of 422 participants, 402 were involved in the study and made a response rate of 95.3%. The mean age of the participants was 23.1 ± 1.7 years with a minimum of 19 years and a maximum of 30 years old, respectively. The majority (65.2%) of study participants were male, while 336 (83.6%) were single and 232 (57.7%) of the study subjects were from the rural origin. Two hundred eighty (69.7%) of the study subjects were from none health sciences college, almost half of participants mother or father has neither degree nor diploma educational award and 362 (90.0%) were none smokers (Table 1).

Awareness of Students About the Covid-19

All of the study subjects have heard about Covid-19. Two hundred thirty (57.2%) have gained information about Covid-19 from mass media, mainly radio or television and only 20 (5%) heard information from family (Figure 1).

Table 1 Socio-Demographic Characteristics of the Students in Mizan Tepi University, Southwest Ethiopia 2020, n =402

Characterics		Frequency	Percentage
Gender	Male	262	65.2
	Female	140	34.8
Marital status	Single	336	83.6
	Married	37	9.2
	Widowed	3	0.7
	Divorced	26	6.5
Students residence	Urban	170	42.3
	Rural	232	57.7
Parents completed diploma or higher education	None	207	51.5
	One of them	132	32.8
	Both of them	63	15.7
Religion	Orthodox	293	72.9
	Protestant	50	12.4
	Muslim	56	13.9
	Wakfeta	3	0.7
Monthly income in ETB	<1000	249	61.9
	1000–1500	108	26.9
	≥1500	45	11.2
College of students	Health sciences	122	30.3
	None health sciences	280	69.7
Smoking	Yes	40	10.0
	No	362	90.0

Knowledge of Students Toward Covid-19

Three hundred fifteen (78.4%) of the students mentioned the causes of Covid-19 as a virus, 306 (76.1%) stated respiratory droplet and close contact as the method of transmission, the majority (58.2%) identified the correct incubation period and only 153 (38.1%) knew that generally, people are susceptible for Covid-19.

Two hundred fifty-seven (63.9%) of the study subjects mentioned fever and dry cough as the main clinical manifestation of the Covid-19, 171 (42.5%) considered that all persons infected with Covid-19 show clinical manifestation, while 244 (60.7%) responded that application of non-pharmacological methods are important for prevention and, and majority (74.4%) knew that wearing face masks can reduce transmission.

One hundred seventy-three (43.0%) considered that eating garlic or onions cannot prevent the disease, 162 (40.3%) answered that taking antibiotics is optimal treatment for Covid-19, 205 (51.0%) responded that there is curing or protective vaccine and effective treatment of Covid-19, while 154 (38.3%) considered that global

mortality rate from Covid-19 is below 5% and majority (71.4%) knew that Covid-19 can be transmitted by contaminating the eye, nose, or mouth from contaminated surfaces by Covid-19 (Table 2). One hundred eighty-nine (47.0%) of the study subjects had scored the knowledge score above than the mean knowledge score (7.1) and had good knowledge about Covid-19 (Figure 2).

Attitude of the Students Towards Covid-19

About half of the students agreed that they are worried for might getting Covid-19, 182 (45.3%) agree for preventive measures should be only applied by risk groups and older adults. Two hundred sixty eight (66.7%) agree for visiting the health facility when they develop symptoms, 275 (68.4%) agreed that limit of movement by individuals decreases the disease transmission, and 158 (39.3%) agreed that students living in the campus are vulnerable for Covid-19. Two hundred five (51.0%) agreed that the outbreak has impacted their study, and 184 (45.8%) had agreed that eating raw vegetables and wild animals do not

Source of information about Covid-19 for students
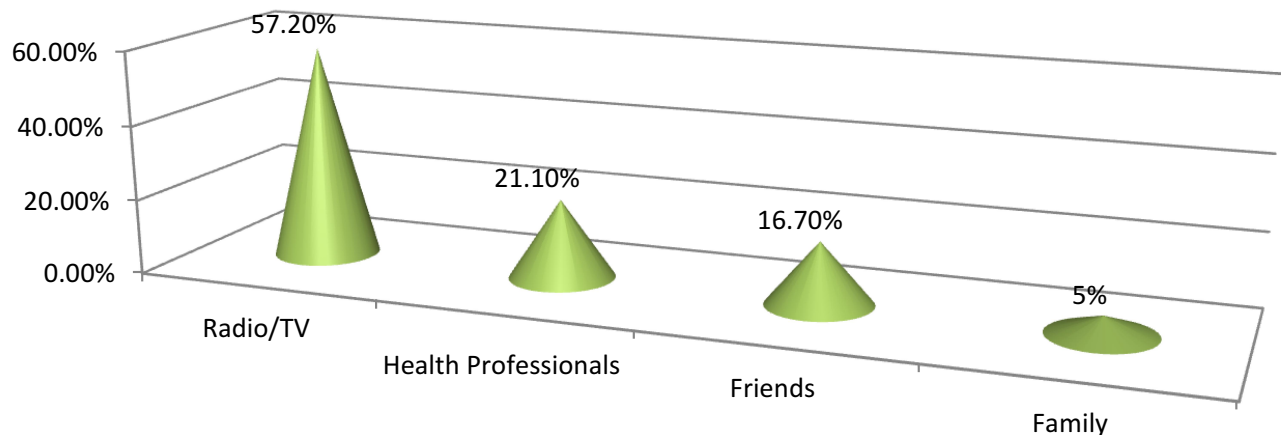
Figure 1 Source of information about Covid-19 to students in Mizan Tepi University, southwest Ethiopia, 2020, n= 402.

impact the transmission (Table 3). Overall 217 (54.0%) of the study participants had scored attitude score greater than the mean attitude score (7.4) and had a positive attitude towards Covid-19 prevention (Figure 3).

Practice of the Students in Covid-19 Prevention

Two hundred fifty-eight (64.2%) of the students committed to washing hands regularly, 224 (55.7%) practiced proper method of coughing, while 221 (55.0%) did not wear face mask, and 246 (61.4%) did not gather in areas where the mass of people presented. The majority (60.6%) did not maintain social distancing, 209 (52.0%) of the study subjects did not take proactive measure when contacting the active Covid-19 case, while 265 (65.9%) avoided meeting with cured Covid-19 patients and 206 (51.2%) answered to take proactive measures when developing signs and symptoms of Covid-19 (Table 4). Overall 230 (57.2%) of the respondents scored practice below the mean practice score (4.18) and were having a poor practice of Covid-19 prevention (Figure 4).

Factors Associated with Knowledge, Attitude and Practice Towards Covid-19 Among Students

In bivariate analysis sex, being from health science, college or not, income status and parents educational status were significantly associated with students' knowledge at

p < 0.25. Likewise, sex, college of the students, income, smoking, and parents' educational status were significantly associated with students' attitudes in a bivariate analysis at p <0.25. Smoking habit, the attitude of the students, knowledge, and residence were significantly associated with the practice towards Covid-19 prevention in a bivariate analysis at p < 0.25 (Table 5).
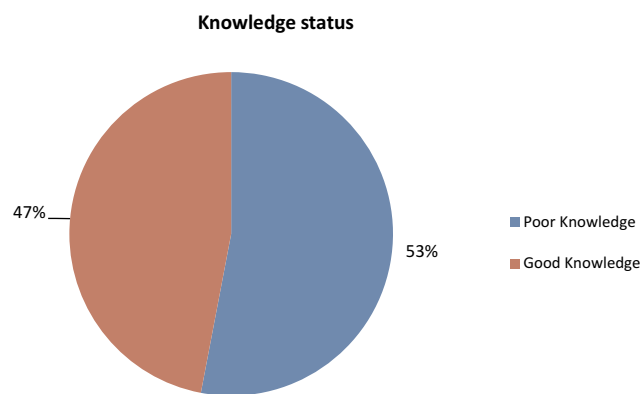
Multivariate logistic regression analysis revealed that the odds of knowing about Covid-19 health sciences college students were almost 3 times more compared to those none health sciences students (AOR= 2.983, 95% CI (1.869, 4.763)). Except for the students learning college, none of the other variables are associated with knowledge in this study during multiple logistics regression analysis.

In this study, the odds of having a positive attitude towards Covid-19 prevention among health sciences students were almost 2 times more than none health sciences students (AOR= 1.86, 95% CI (1.169, 2.970)). Students having at least one parent who had a diploma or degree were almost 55% times less likely to have a positive attitude about Covid-19 prevention than students having both parents with diploma or degree education (AOR= 0.455, 95% CI (0.236,0.878)). Students having monthly income between 1000 and 1500 Ethiopian Birr were almost 60% times less likely to have positive attitude about Covid-19 prevention than students having more than 1500 Ethiopian Birr as monthly income (AOR= 0.403, 95% CI (0.189, 0.856)). Similarly, the odds of having a positive attitude towards Covid-19 among female

Table 2 Participants' Knowledge About Covid-19 in Mizan Tepi University, Southwest Ethiopia, 2020, n = 402

Variables	Category	Frequency	Percentage
What type of infectious is Covid-19?	Bacterial	18	4.5
	Viral	315	78.4
	I do not know	69	17.2
The main transmission method	Respiratory droplet and close contact	306	76.1
	Water	24	6.0
	Food	29	7.2
	I do not know	43	10.7
Incubation period of Covid-19	1–14 days	234	58.2
	5–9 days	36	9.0
	More than 14 days	106	26.4
	I do not know	26	6.5
Who is susceptible for Covid-19?	The old	113	28.1
	People are generally susceptible	153	38.1
	Young adults	11	2.7
	People with pre-existing disease	94	23.4
	I do not know	31	7.7
Main clinical manifestations of Covid-19	Fever and dry cough	257	63.9
	Fatigue	38	9.5
	Stuffy and runny nose	42	10.4
	Back pain	8	2.0
	Diarrhea	12	3.0
	I do not know	45	11.2
All infected individuals with Covid-19 develop sign and symptoms.	Yes	171	42.5
	No	165	41.0
	I do not know	66	16.4
None pharmacological method of prevention is important for Covid-19.	Yes	244	60.7
	No	89	22.1
	I do not know	69	17.2
Wearing mask can prevent transmission	Yes	299	74.4
	No	69	17.2
	I do not know	34	8.5
Eating garlic and onions can prevent transmission.	Yes	156	38.8
	No	173	43.0
	I do not know	73	18.2
Taking anti-biotic is optimal method of Covid-19 treatment and prevention.	Yes	162	40.3
	No	167	41.5
	I do not know	73	18.2
There is effective curing and protecting vaccine and treatment modalities for Covid-19.	Yes	205	51.0
	No	127	31.6
	I do not know	70	17.4
Globally mortality rate from Covid-19 is below 5%.	Yes	154	38.3
	No	148	36.8
	I do not know	100	24.9
Does Covid-19 transmitted with contact of contaminated surfaces?	Yes	287	71.4
	No	53	13.2
	I do not know	62	15.4

Knowledge status

47%

53%

■ Poor Knowledge

■ Good Knowledge

Figure 2 Knowledge status of the students to Covid-19 in Mizan Tepi University, southwest Ethiopia, 2020, n=402.

students were 37% times less likely compared to male students (AOR=0.628, 95% CI (0.405, 0.975)).

Multiple logistics regression analysis showed that students who had positive attitude were almost 3 times more likely to have a good practice of Covid-19 prevention than students having negative attitudes (AOR=2.676, 95 CI (1.745, 4.105)). Students who had good knowledge were almost 2 times more likely to have a good practice of Covid-19 prevention than students having poor knowledge

(AOR=1.893, 95 CI (1.232, 2.909)). Also the odds of having a good practice in Covid-19 prevention among students who stayed in rural areas were almost 2 times more likely compared to those stayed in urban area (AOR = 1.740, 95% CI (1.136,2.663)) (Table 5).

Discussion

The study aimed to assess knowledge, attitude, and practice of the students towards Covid-19 in Mizan Tepi University. In this study, all of the students had heard about the Covid-19, with the majority (57.2%) gained information from mass media mainly radio and television. This finding was in line with studies done in India, where 99.6% of the study participants were heard about the Covid-19.[12]

The study revealed that 78.4% of the study participants replied about the cause of Covid-19 was a virus. This finding is much lower than the study of China, in which 97.3% stated the cause as a virus.[11] The possible reason for this variation may be due to the variation of sample size where larger sample size was used in the china study. Another possible reason may be due to variation of enabling factors of awareness about the exact cause of

Table 3 Attitude of the Students Towards Covid-19, in Mizan Tepi University, Southwest Ethiopia, 2020, n=402

Variables	Categories	Frequency	Percentage
Are you worried that you might get Covid-19?	Agree Do not agree Neutral	202 136 64	50.2 33.8 15.9
Do you think that Covid-19 prevention measures should only be applied by older adults and age groups most risk?	Agree Do not agree Neutral	182 170 50	45.3 42.3 12.4
In the event that i develop symptoms of Covid-19, I will seek to visit health facility.	Agree Do not agree Neutral	268 98 36	66.7 24.4 9.0
Do you think that limit of the movement decreases the transmission?	Agree Do not agree Neutral	275 97 30	68.4 24.1 7.5
Do you think that students in campus are invincible for Covid-19?	Agree Do not agree Neutral	158 132 112	39.3 32.8 27.9
Do you think that outbreak has impacted your study?	Agree Do not agree Neutral	205 133 64	51.0 33.1 15.9
Do you think that consumptions of raw vegetables and wild animal products have no role in transmissions of Covid-19?	Agree Do not agree Neutral	184 153 65	45.8 38.1 16.2
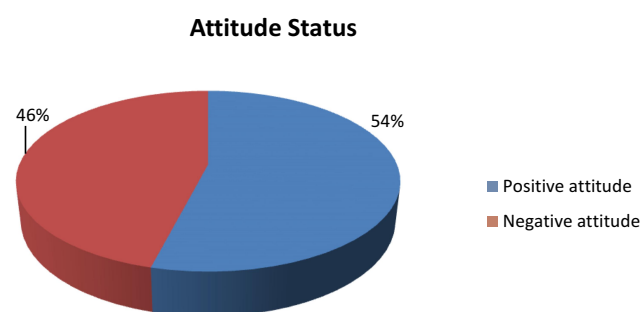
Attitude Status

Figure 3 Students' attitude status to Covid-19 in Mizan Tepi University, southwest Ethiopia, 2020, n = 402.

the disease which may be influenced by the socio-economic and educational status. This is in fact that socio-economic status can impact awareness.[13,14] The finding is however much better than a study from Indonesia, which depicted that only 39% knew that virus causes the disease.[15]

The study depicted that 76.1% have known the correct mode of transmission. This finding is almost in line with studies from Indonesia (78.99%) and Palestine (78.5%) of the undergraduate students knew the correct mode of the transmission.[15,16] This finding is better than a study from India in which 68% knew the correct methods of transmission.[12] However, this finding from the current

study is much lower than a study from china that 98.9% knew the correct methods of transmission. The study also showed that more than half (58.2%) of the students knew the correct incubation period of the disease. This finding is much lower than study from Palestine (95.8%)[16] and lowers than study from China (66.4%).[11] The possible suggestions for such variations may be due to variations of sample characteristics, in which the numbers of students from health sciences related field involved in the study from Palestine and China are more than this study.

The study also pointed out that 63.9% of students knew the correct sign and symptoms of the disease by stating fever and dry cough. This finding is lower than studies from Indonesia (89.71%),[15] China (98.6%),[11] and India (86.7%).[17] The possible reason for the variations may be due to difference in sample size in comparing with Indonesia and China studies. But the variations compared with Indian study is that, only medical students were involved in India, while both medical and none medical involved in that of the current study. Knowing the sign and symptoms of the Covid-19 is very important for early quarantine to prevent the possible spread among the student community.

The study showed that (47.0%) of the students had good knowledge about the Covid-19. This finding is better

Table 4 Students' Practice Towards Covid-19 Prevention in Mizan Tepi University, Southwest Ethiopia, 2020, n=402

Variables	Categories	Frequency	Percentage
Were you committed to hand wash?	Often or more Rarely or less	258 144	64.2 35.8
Did you practice the proper methods of coughing and sneezing etiquette?	Often or more Rarely or less	224 178	55.7 44.3
Did you wear face mask regularly?	Often or more Rarely or less	181 221	45.0 55.0
Were you in areas of many people gathered like in bar and restaurants?	Often or more Rarely or less	155 247	38.6 61.4
Did you maintain safe distance between you and individual?	Often or more Rarely or less	158 244	39.3 60.6
What would you do if you had close contact with confirmed case?	Pro-actively report to the institution and I isolate my self I do not know what to do	193 209	48.0 52.0
What would you do if someone cured from Covid-19 wants to meet you?	I will meet and show kind ness I will excuse him and avoid contact	137 265	34.1 65.9
What would you do if you had fever and dry cough?	I will analyze the situation rationally and report to nearby health facility I do not know what to do	206 196	51.2 48.8

Practice status

42.80%

57.20%

■ Poor practice
■ Good Practice
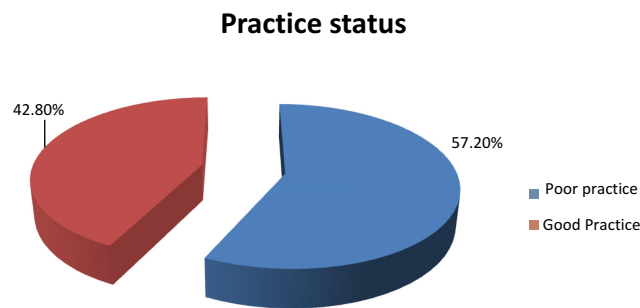
Figure 4 Practice status among students toward Covid-19 in Mizan Tepi University, southwest Ethiopia, 2020, n=402.

than studies done in Beret (41.4%)[16] and India (40%).[12] This difference could be due to difference in methods of categorizations to good and poor knowledge, in which the late Indian study used arbitrary cutoff 70% and that of the current study used the mean knowledge score as the cutoff value to dichotomize poor and good knowledge. However, the finding is much lower than a study from China (82.3%).[11] Having knowledge about a given disease very important in applying appropriate effective preventive measures.[17] When doing this, the spread of the disease can be easily tackled, but in this study the knowledge level of the students is low. In the present study college of the students is only the factor associated with the students' level of knowledge and the odds of knowing about Covid-19 among health sciences college students was almost 3 times more compared to those none health sciences students (AOR= 2.983, 95% CI (1.869, 4.763)). This finding is supported by a study from China,[11] in which the odds of good knowledge in medical students were more significant than none of the medical students. This is because medical students can get information about the disease from their education.

The study revealed that 50.2% of students agreed that they are worried about being infected by the virus. This finding is inconsistent with the study from China.[11] The possible reason for such variation may be due to the gap in awareness of effective self-protective measures. This can influence the students' preventive behavior in preventing the disease. Two hundred seventy five (68.4%) of the study subjects agreed that the limit of the movement decreases the transmission. This is lower than the study done in India (100%).[12] Overall, 54% of the students have a positive attitude. This finding is lower than the study done in China (73.81%).[11] In this study, student's attitude about the Covid-19 was predicted by variables like being

from health science college (AOR= 1.86, 95% CI (1.169, 2.970)), parent having at least diploma or degree (AOR= 0.455, 95% CI (0.236,0.878)), monthly income between 1000 and 1500 ETB (AOR= 0.403, 95% CI (0.189, 0.856)) and being female sex (AOR=0.628, 95% CI (0.405, 0.975)). This finding is supported by a study from Japan, where male sex is positively associated with attitude.[18] But it is opposed by a study from China.[11] None of the studies opposes or supports the rest of the predictors.

In the present study, 64.2% washed hands in a regular manner. This is inconsistent with a study from India in which all of the students adhered to regular hand washing.[12] Regular hand washing is one of the effective WHO recommendations for tackling the virus spread. The study also identified that only 45% practiced regular wearing of the face mask. This finding is much lower than the Indian study (91%).[19]

Overall, only 42.8% had good practice about Covid-19 prevention methods and taken proactive measures. This is not in line with a study from China (87.9%).[11] The possible suggestion for such variation may be due to the difference in tools used to assess the practice of the students. In this study, factors identified for the poor practice were knowledge, attitude, and residence. In the present study, good knowledge is positively associated with practicing Covid-19 prevention (AOR=1.893, 95 CI (1.232, 2.909)). This finding is supported by a study from China[11] in which students with higher grades showed to practice more. A positive attitude is positively associated with the prevention of Covid-19 in this study (AOR=2.676, 95 CI (1.745, 4.105)). Also being a rural residency is positively associated with the practice (AOR= 1.740, 95% CI (1.136, 2.663)). This contradicting with a study from Japan, where the odd of practices among students from the capital area are more likely than the counterpart.[18] This finding from the current study is suggesting that dissemination of information about Covid-19 has not brought the difference in implementation of prevention, as it is expected that living in rural is easy to access information about prevention than those living in rural.

Conclusion

The knowledge, attitude, and practice towards Covid-19 among students were found to be low. The odds of good knowledge about Covid-19 among non-health science students were low. Factors associated with students' attitudes about Covid-19 were parents' educational status, sex, students learning college, and monthly income. Good knowledge, positive attitude, and rural residency were positively associated with

Table 5 Bivariate and Multivariate Logistic Regression Analysis Showing Factors Associated with Knowledge, Attitude and Practice of Students Towards Covid-19 in Mizan Taipei University, Southwest Ethiopia, 2020, n=402

Variables	Category	Knowledge		COR (95% CI)	AOR (95% CI)
		Poor Knowledge %	Good Knowledge%		
Sex	Male	146(65.5%)	116(61.3%)	1(ref.)	1(ref.)
	Female	67(34.5%)	73(38.7%)	1.371 (0.909, 2.070)*	1.117 (0.715, 1.744)
College	Health science	41(19.2%)	81(42.9%)	6.752(2.014, 4.915)*	2.983 (1.869, 4.763)**
	None health science	172(80.8%)	108(57.1%)	1(ref.)	1(ref.)
Parents completed diploma or higher education	None of them	129(60.6%)	78(41.3%)	0.550 (0.311, 0.971)*	0.718 (0.390, 1.321)
	One of them	54(25.4%)	78(41.3%)	1.313 (0.718, 2.402)	1.537 (0.810, 2.919)
	Both of them	30(14%)	33(17.4%)	1(ref.)	1(ref.)
Income	< 1000 ETB	135(63.4%)	114(60.3%)	0.617(0.325, 1.173)*	0.591 (0.296, 1.180)
	1000–1500 ETB	59(27.7%)	49(25.9%)	0.607 (0.301, 1.225)*	0.571 (0.270, 1.206)
	≥1500 ETB	19(8.9%)	26(13.8%)	1(ref.)	1(ref.)
Attitude		Negative attitude %	Positive attitude %		
Sex	Male	114(61.6%)	148(68.2%)	1(ref.)	1(ref.)
	Female	71(38.4%)	69(31.8%)	0.749(0.496, 1.130)*	0.628(0.405, 0.975)**
College	Health sciences	46(24.9%)	76(35%)	1.629(1.055, 2.516)*	1.863(1.169, 2.970)**
	None health sciences	139(75.1%)	141(65%)	1(ref.)	1(ref.)
Income	<1000 ETB	110(59.5%)	139(64.1%)	0.632(0.324, 1.233)*	0.657(0.326, 1.326)
	1000–1500 ETB	60(32.4%)	48(22.1%)	0.400(0.193,0.827)*	0.403(0.189, 0.856)**
	≥1500 ETB	15(8.1%)	30(13.8%)	1(ref.)	1(ref.)
Parents completed diploma or higher education	None of them	99 (53.5%)	108 (49.8%)	0.507(0.279, 0.921)*	0.561(0.299, 1.053)
	One of them	66 (35.7%)	66 (30.4%)	0.465(0.248, 0.874)*	0.455(0.236, 0.878)**
	Both of them	20 (11%)	43 (19.8%)	1(ref.)	1(ref.)
Practice		Poor practice %	Good practice %		
Smoking	Yes	17(7.4%)	23(13.4%)	1.934(0.999, 3.745)*	1.161(0.277, 4.861)
	No	213(92.6%)	149(86.6%)	1(ref.)	1(ref.)
Residence	Urban	109(49.4%)	61(35.5%)	1(ref.)	1(ref.)
	Rural	121(50.6%)	111(64.5%)	1.639(1.093, 2.459)*	1.740(1.136, 2.663)**

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Knowledge	Poor knowledge	133(57.8%)	80(46.5%)	1(ref.)	1(ref.)
	Good knowledge	97(42.2%)	92(53.5%)	1.577(1.059, 2.347)*	1.893(1.232, 2.909)**
Attitude	Negative attitude	129(56.1%)	56(32.6%)	1(ref.)	1(ref.)
	Positive attitude	101(43.9%)	116(67.4%)	2.646(1.753, 3.993)*	2.676(1.745, 4.105)**

Notes: *Significantly associated at p < 0.25; **significantly associated at p < 0.05.

having a good practice in Covid-19 prevention among the students. Awareness creation for preventive behaviors among students is highly recommended.

Data Sharing Statement
Not applicable.

Consent for Publication
Not applicable.

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Author Contributions
All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis, and interpretation, or in all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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