

# Risk Perception Towards COVID-19 and Its Associated Factors Among Waiters in Selected Towns of Southwest Ethiopia

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**Background:** Waiters working in hotels, pensions, restaurants, and cafeteria are more susceptible to COVID-19 and easily transmit the virus to others because they interact with almost all individuals who enter those establishments. However, information regarding their risk perception is scarce; hence, this study aimed to assess risk perception regarding COVID-19 and its associated factors among waiters working in the selected towns of southwest Ethiopia.

**Methods:** A cross-sectional study was conducted from June 1 to 15, 2020. The interview-administered structured questionnaire was used to collect data. Data were entered into Epi data manager version 4.0.2 and exported to SPSS version 24 for analysis. Multiple linear regression analysis was done to identify factors associated with risk perception. A p-value of less than 0.05 was used as a level of significance.

**Results:** A total of 416 waiters were interviewed, with a 98.6% response rate. The mean age of respondents was 27.26 (SD=8.35) years. More than half (53.4%) agreed that COVID-19 causes more deaths than other respiratory diseases. Regarding overall risk perception, two hundred twenty-two (53.4%) participants had high-risk perceptions concerning COVID-19. Risk perception was associated with age ( $\beta = 0.10$ ; 95% CI: 0.02, 0.18), knowledge of COVID-19 ( $\beta = 0.50$ , 95% CI: 0.23, 0.76) and preventive behaviors ( $\beta = 0.62$ ; 95% CI: 0.33, 0.90).

**Conclusion:** A higher level of risk perception was found regarding the COVID-19. Proper risk communication to promote protective behaviors is very essential since waiters are more at risk to be infected with COVID-19 and their infection with the virus has important public health implications.

**Keywords:** risk perception, COVID-19, coronavirus, waiters

## Introduction

Coronavirus disease-2019 (COVID-19) is a newly emerged disease caused by a highly infectious novel coronavirus that primarily affects the respiratory system. The first case was reported in the Hubei province of China on 29<sup>th</sup> December 2019.<sup>1</sup> The disease has been recognized as a global public health emergency by the World Health Organization (WHO) on 11 March 2020, after cases had started to be seen outside China in less than two months.<sup>2</sup> On 13 March 2020, the Ethiopia Federal Ministry of Health was confirmed the first case of COVID-19 in Addis Ababa.<sup>3</sup> According to a recent study, the virus spreads between individuals through respiratory droplets, direct contact with an infected individual, or indirect contact with surfaces or objects that have been contaminated with respiratory secretions.<sup>4</sup>

The impacts of the pandemic are multidimensional; health, social, psychological, political, and economic.<sup>5</sup> Hotels, pensions, restaurants, and cafeterias are more

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susceptible to contagion because they are visited by many people who interact among themselves and with employees.<sup>6</sup> In addition, the transmissibility of COVID-19 virus from asymptomatic and symptomatic patients could lead to a higher probability of work-related transmission, as people with mild or no symptoms could continue to work or travel.<sup>7</sup> Thus, waiters are more susceptible to contagion, and can easily spread the infection to guests and to communities where they live. Therefore, they should strictly comply with the basic protective behaviors against the pandemic.<sup>4</sup>

In the absence of effective vaccination or treatment, active case finding and isolation, quarantine, travel restrictions, frequent hand washing, wearing of face masks, respiratory hygiene, avoiding public gatherings, and social distancing are the measures of choice.<sup>8</sup> However, the effectiveness of such measures fundamentally depends on the public willingness to cooperate, which in turn is influenced by public risk perception regarding the pandemic.<sup>9–12</sup>

Different health education and psychological models indicate that risk perception is a key driver of behaviors.<sup>12–15</sup> People who perceive greater risk are more likely to implement protective behaviors, and this influences the probability of infection.<sup>16–18</sup> Thus, sound empirical data on how laypersons perceive the risks of newly emerged COVID-19 is essential to devise proper risk communication strategies. Moreover, though waiters are more at risk of contracting the infection,<sup>15</sup> information regarding their risk perception is scarce. Previous studies mainly focused on the general population.<sup>19–24</sup> However, waiters working in different food and drinking establishments are more vulnerable to contract COVID-19 than the public because of the nature of their work. Thus, they may have different risk perceptions on the disease, and the engagements in preventive behaviors may also not be similar to the public. Hence, data regarding population are important to devise proper risk communication approaches. Therefore, this study aimed to assess risk perception concerning COVID-19 and its associated factors among waiters in selected towns of Bench-Sheko, Sheka, and West-Omo zones, southwest Ethiopia.

## Materials and Methods

### Study Area and Period

This study was conducted among waiters working in hotels, pensions, restaurants and cafeterias found in Mizan-Aman, Tepi and Jemu towns from June 01 to 15/2020. The towns are located in Southern Nations, Nationalities, and People

Regional State in the southwest part of Ethiopia. Mizan-Aman is the capital town of the Bench-Sheko zone and is located at 561 km from Addis Ababa. Jemu is the capital town of the West-Omo zone and is located 625km from Addis Ababa. Tepi is the capital town of Sheka zone and is found at 585 km from Addis Ababa. These towns were selected for the study because they are inhabited by a larger number of people, and there are high social mobilities because they are located in cash crops (coffee) producing areas, which make a conducive condition for the spread of COVID-19 virus.

### Study Design

Cross-sectional study design was employed.

### Population

All waiters working in hotels, pensions, restaurants, and cafeterias found in selected towns were a source population, while randomly selected waiters working in hotels, pensions, restaurants and cafeterias found in the selected towns were the study population. Waiters who were on duty in the selected institutions at the time of data collection were included in the study. All hotels, pensions, restaurants, and cafeterias in the specified towns that were licensed by the towns' trade and tourism offices were selected for the study.

### Sample Size Determination and Sampling Procedure

The sample size was calculated using a single population proportion formula based on the assumptions of a 95% confidence level, 5% margin of error, and 50% of proportion of high-risk perception. A prevalence of 50% was taken because there was no similar study done in Ethiopia previously. After adding a 10% contingency for non-response, the final sample size became 422 waiters. Regarding the sampling procedure, based on the total number of establishments in each town, the sample size was proportionally allocated to the towns. Then, simple random sampling was employed to select 422 establishments. Finally, one waiter from each selected establishment was randomly recruited using the lottery method for the interview.

### Data Collection Tool and Procedure

A structured questionnaire was developed from related studies.<sup>12,18–20</sup> The questionnaire has five parts: socio-demographic characteristics, knowledge of COVID-19,

preventive behaviors, risk perception, and self-efficacy to practice COVID-19 prevention measures. The questionnaire was prepared in English and translated to the local language “Amharic” and back to English to ensure consistency. The tool was pretested on 10% of the sample size in a town that was not selected for the actual study and modified accordingly. The reliability (internal consistency) of the questionnaire was calculated based on data from the pretest.

The data were collected through face-to-face interviews. We chose face-to-face interview technique than online or telephone surveys due to most waiters in study areas had no access to the internet or telephone. The data collectors used appropriate personal protective equipment (PPE) during data collection to prevent the transmission of COVID-19 virus to data collectors and study participants during the interview. Data were collected by health professionals (BSc) who had experience of data collection under supervision.

## Measurements

Knowledge of COVID-19 (etiology, mode of transmission, symptoms, and prevention methods) was measured using 15 items. The questions were answered on yes, no or I do not know responses. During analysis, the correct answer was coded with “1” and the incorrect, or I do not know coded with “0”. Then sum score was calculated (range 0–15) and categorized. Participants who answered  $\leq 60\%$  of the knowledge questions correctly were considered as having poor knowledge; whereas, those who mentioned 61–75% and  $>75\%$  of the questions correctly were classified as having fair and good knowledge, respectively.

Risk perception regarding COVID-19 was measured using 12 items which answered on five Likert scales: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The respondents rated their levels of agreement with different statements. Six items were used to measure the perceived susceptibility dimension of risk perception and the left six items used to measure the perceived severity dimension. The items were stated in a way higher value indicates higher risk perception. The cumulative risk perception score (range 12–60) was computed.<sup>25</sup> Based on the mean score, the risk perception categorized as high if scored above mean, and low if scored mean or below. The internal consistency of the items was evaluated on data from pretest, and Cronbach’s alphas for perceived susceptibility was 0.717; whereas, it was 0.684 for perceived severity dimension. Respondents’ level of concern regarding COVID-19 was compared with different diseases that are common in the study areas. The respondents rate their level of concern if they contracted those

diseases on five scale items: not at all serious (1), not serious (2), not serious-slight serious (3), serious (4), and very serious (5). The Cronbach’s alpha for these items was 0.685.

The practice of COVID-19 prevention methods was measured using 10 questions. The respondents rated how often they were following the preventive methods that recommended by WHO on five scales: none (1), rarely (2), sometimes (3), frequently (4), and always (5). Finally, the cumulative practice score was computed (range 10–50). The Cronbach’s alpha for practice items was 0.703.

Perceived self-efficacy to practice prevention measures was measured using 4 items which responded on five scales: certainly not (1), probably not (2), perhaps not – perhaps yes (3), probably yes (4), and most certainly (5). The items were stated in a way that the higher value indicates more perceived self-efficacy to practice the measures. The sum and mean scores were computed. Based on the finding of the pretest, the items were internally consistent (Cronbach’s alpha= 0.764).

## Data Quality Control

To assure the quality of the data, training was given for data collectors and supervisors on the data collection tool, how to approach the interviewees, details of interview techniques, the need for respecting the right of participants, and how to maintain confidentiality. Also, a pretest was conducted and necessary corrections were made accordingly. The data collection process was closely overseen by trained supervisors. Finally, the data entry was carefully done using Epi-data manager software to minimize errors.

## Data Processing and Analysis

The data were entered into Epi data manager version 4.0.2 and exported to SPSS version 24 statistical packages for analysis. Descriptive statistics were done for different variables as supposed necessary. Linear regression analysis was done to identify factors associated with risk perception by treating the cumulative score of risk perception as a continuous variable. The variables were selected using bivariate analysis and dropped from further inclusion in the multivariate model if their p-values were greater than 0.25. Finally, the multivariable linear regression model was fitted using a backward stepwise elimination method, and variables with a p-value less than 0.05 in the final model were considered as significant predictors of risk perception regarding COVID-19. Unstandardized  $\beta$  with 95% CI was used to measure the amount by which dependent variable changes if we change independent variable by one unit keeping other independent

variables constant. Multicollinearity was checked using the variance inflation factor (VIF) and found to be within a tolerable range for all variables included in the model.

## Results

### Socio-Demographic Characteristics

A total of 416 respondents participated in the study, with a response rate of 98.6%. The mean age of study participants was 27.26 (SD=8.35) years. Of the total respondents, 350 (84.1%) were single marital status, and 183 (44%) and 154 (37%) had attended primary and secondary or above education, respectively. Three hundred thirty (79.3%) study participants were living with one or more persons in the house (Table 1).

### Knowledge of COVID-19

All respondents had heard about new coronavirus/COVID-19 disease. Of the 416 respondents, 84.4% correctly answered the cause of the pandemic. A significant proportion of participants knew the mode of spread of the virus: inhalation of droplets from infected people (78.8%), direct contact with infected people (84.4%), contaminated animals (72.8%), and contaminated object/surfaces (60.6%). The mean of the sum score of knowledge items was 10.32 (SD=2.37) with minimum and maximum scores of 3 and 15, respectively (Table 2). Regarding overall knowledge status, out of 416 respondents, 30.8% had poor knowledge, while the rest 27.6% had fair and good knowledge concerning COVID 19, respectively.

### Risk Perception Regarding COVID-19

More than half (53.4%) of the study participants agreed that COVID-19 causes more deaths than other respiratory diseases. About two-thirds (66.6%) respondents agreed that people stigmatize them if they get sick due to coronavirus. About one-fourth (25.5%) of waiters strongly agreed that their work exposes them more to COVID-19 more. The mean cumulative score of risk perception was 40.7 (SD=6.65) (Table 3). Two hundred twenty-two (53.4%) participants had high-risk perceptions concerning COVID-19. The highest proportion of respondents was very seriously concerned if they contracted COVID-19 than other diseases (Figure 1).

### Preventive Behaviors

About, 36.3% and 22.1% of respondents reported that they were maintaining social distancing frequently, and always,

**Table 1** Sociodemographic Characteristics of Study Participants, Southwest Ethiopia, 2020

| Variables                           | Categories                    | Frequency | Percent |
|-------------------------------------|-------------------------------|-----------|---------|
| Age group                           | 18–25                         | 218       | 52.4    |
|                                     | 26–35                         | 142       | 34.1    |
|                                     | >35                           | 56        | 13.5    |
| Sex                                 | Male                          | 191       | 45.9    |
|                                     | Female                        | 225       | 54.1    |
| Marital status                      | Single                        | 350       | 84.1    |
|                                     | Married                       | 24        | 5.8     |
|                                     | Divorced/<br>Widowed          | 42        | 10.1    |
|                                     |                               |           |         |
| Religion                            | Orthodox                      | 283       | 68.0    |
|                                     | Muslim                        | 61        | 14.7    |
|                                     | Protestant                    | 72        | 17.3    |
| Educational status                  | No education                  | 79        | 19.0    |
|                                     | Primary                       | 183       | 44.0    |
|                                     | Secondary/<br>Above           | 154       | 37.0    |
|                                     |                               |           |         |
| Ethnic                              | Kafa                          | 165       | 39.7    |
|                                     | Amhara                        | 110       | 26.4    |
|                                     | Gurage                        | 36        | 8.7     |
|                                     | Bench                         | 34        | 8.2     |
|                                     | Tigre                         | 18        | 4.3     |
|                                     | Oromo                         | 18        | 4.3     |
|                                     | Sheko                         | 10        | 2.4     |
|                                     | Meinit                        | 9         | 2.2     |
|                                     | Others                        | 9         | 2.2     |
| How many people live in your house? | Live alone                    | 86        | 20.7    |
|                                     | Live with one or more persons | 330       | 79.3    |

respectively. Very few respondents were wearing facemask at work or outside the home always (6.0%), and frequently (11.5%). Out of the total respondents, 45.4% did not wear a glove at all; while, 17.3% wear rarely, 26.4% wear sometimes, 6.7% wear frequently and 4.1% wear always (Table 4).

### Perceived Self-Efficacy to Implement COVID-19 Prevention Measures

Out of the 416 respondents, only 20.9% were almost certain that they can wash their hands with water and soap or with sanitizers. About 6.0% of the respondents reported they certainly did not manage to use facemasks. The mean of the cumulative score of self-efficacy items was 13.40 (Table 5).

**Table 2** Knowledge of COVID-19 Among Waiters Working Food and Drinking Establishments Southwest Ethiopia, 2020. (n=416)

| Questions   | Response     | Frequency | Percent |
|---|--------------|-----------|---------|
| Have you heard about the new coronavirus/ corona/COVID-19 disease?<br>What causes corona disease? | Yes          | 416       | 100     |
|   | Correct      | 351       | 84.4    |
|   | Incorrect    | 65        | 15.6    |
| Can COVID-19 have transmitted through the following routes?<br>Droplets from infected people      | Yes          | 250       | 60.1    |
|   | No           | 136       | 32.7    |
|   | I don't know | 30        | 7.2     |
| Airborne  | Yes          | 191       | 45.9    |
|   | No           | 206       | 49.5    |
|   | I don't know | 19        | 4.6     |
| Direct contact with infected people   | Yes          | 328       | 78.8    |
|   | No           | 78        | 18.8    |
|   | I don't know | 10        | 2.4     |
| Touching contaminated objects/surfaces  | Yes          | 252       | 60.6    |
|   | No           | 126       | 30.3    |
|   | I don't know | 38        | 9.1     |
| Contact with contaminated animals   | Yes          | 304       | 73.1    |
|   | No           | 99        | 23.8    |
|   | I don't know | 13        | 3.1     |
| Mosquito bites  | Yes          | 5         | 1.2     |
|   | No           | 395       | 95.0    |
|   | I don't know | 16        | 3.8     |
| Are the following being symptoms of coronavirus?  |              |           |         |
| Fever   | Yes          | 346       | 83.2    |
|   | No           | 25        | 6.0     |
|   | I don't know | 45        | 10.8    |
| Cough   | Yes          | 361       | 86.8    |
|   | No           | 55        | 13.2    |
| Shortness of breath/breathing difficulties  | Yes          | 200       | 48.1    |
|   | No           | 125       | 30.     |
|   | I don't know | 91        | 21.9    |
| Are the following measures/methods used prevent COVID 19?   |              |           |         |
| Wash your hands regularly using alcohol or soap and water   | Yes          | 344       | 82.7    |
|   | No           | 93        | 9.4     |
|   | I don't know | 33        | 7.9     |
| Avoid close contact with anyone who has a fever and cough   | Yes          | 314       | 75.5    |
|   | No           | 99        | 23.8    |
|   | I don't know | 3         | 0.7     |
| Avoid unprotected direct contact with live animals and surfaces                                   | Yes          | 156       | 37.5    |
|   | No           | 250       | 60.1    |
|   | I don't know | 10        | 2.4     |
| Sleep under the mosquito net  | Yes          | 4         | 1.0     |
|   | No           | 397       | 95.4    |

(Continued)

**Table 2** (Continued).

| Questions  | Response     | Frequency | Percent |
|--|--------------|-----------|---------|
|  | I don't know | 15        | 3.6     |
| Currently is no treatment or vaccine for the COVID 19. | Yes          | 299       | 71.9    |
|  | No           | 104       | 25.0    |
|  | I don't know | 13        | 3.1     |

## Factors Associated with Risk Perception Towards COVID-19

In the final multivariable linear regression model, the age of respondents, preventive behaviors, and knowledge of COVID-19 were significantly associated with risk perception regarding COVID-19 ( $p$ -value  $<0.05$ ). As the age increase by one year, the risk perception score will increase by 0.10 if the effects of other variables keep constant ( $\beta=0.10$ ; 95% CI: 0.02, 0.18). For a unit increase in the knowledge score, the risk perception score will increase by half if the effects of other factors keep constant ( $\beta=0.50$ ; 95% CI: 0.23, 0.76). Furthermore, if the score of practicing of COVID-19 prevention measures increased by one unit, the risk perception will increase by 0.62 keeping other factors constant ( $\beta=0.62$ ; 95% CI: 0.33, 0.90) (Table 6).

## Discussion

Risk perception is central to many health behaviors.<sup>13,26</sup> Its role in shaping protective health behaviors could be positive, negative or none.<sup>14</sup> This study intended to assess risk perception toward COVID-19 and its associated factors among waiters working in food and drinking establishments in selected towns of southwest Ethiopia. It was recognized that a significant proportion of study participants perceived that COVID-19 virus causes more deaths than other respiratory diseases. Likewise, another study done in Iran showed that the majority of people thought that COVID-19 disease was very severe.<sup>27</sup> The highest proportion of respondents was very seriously concerned if they contracted COVID-19. This finding agrees with a study done in Wuhan,

**Table 3** Risk Perception Toward COVID-19 Diseases Among Waiters in Southwest Ethiopia 2020 (n=416)

| Statements  | Strongly Disagree | Disagree  | Neutral   | Agree     | Strongly Agree | Mean and SD of the Sum Score |
|---|-------------------|-----------|-----------|-----------|----------------|------------------------------|
|   | N (%)             | N (%)     | N (%)     | N (%)     | N (%)          |                              |
| Getting sick with the coronavirus can be serious  | 26(6.3)           | 33(7.9)   | 188(45.2) | 34(8.2)   | 135(32.5)      | 40.70<br>(SD=6.65)           |
| My health will be severely damaged if I contract coronavirus  | 96(23.1)          | 33(7.9)   | 20 (4.8)  | 194(46.6) | 73(17.5)       |                              |
| It is not possible to recover from coronavirus disease  | 69(16.6)          | 156(37.5) | 11(2.6)   | 143(34.4) | 37(8.9)        |                              |
| Coronavirus causes deaths more than other respiratory diseases  | 105(25.2)         | 26(6.3)   | 0(0.0)    | 222(53.4) | 63(15.1)       |                              |
| If I caught with coronavirus, I cannot manage my daily activities                                       | 18(4.3)           | 50(12.0)  | 8(1.9)    | 287(69.0) | 53(12.7)       |                              |
| People may stigmatize me if get sick due to coronavirus   | 32(7.7)           | 30(7.2)   | 17(4.1)   | 277(66.6) | 60(14.4)       |                              |
| I think that I will contract coronavirus if you do not take any preventive measure                      | 30(7.2)           | 42(10.1)  | 6(1.4)    | 301(72.4) | 37(8.9)        |                              |
| I think that I will contract coronavirus if you take preventive measure                                 | 26(6.3)           | 172(41.3) | 37(8.9)   | 132(31.7) | 49(11.8)       |                              |
| I think that I will contract coronavirus if I come into contact with a coronavirus patient.             | 18(4.3)           | 56(13.5)  | 15(3.6)   | 264(63.5) | 63(15.1)       |                              |
| I think that I will contract coronavirus even if I do not come into contact with a coronavirus patient. | 18(4.3)           | 115(27.6) | 26(6.3)   | 217(52.2) | 40(9.6)        |                              |
| The coronavirus will NOT affect very many people in the area I am currently living                      | 36(8.7)           | 214(51.4) | 21(5.0)   | 107(25.7) | 38(9.1)        |                              |
| My work exposes me more to coronavirus than another person  | 15(3.6)           | 54(13.0)  | 12(2.9)   | 229(55.0) | 106(25.5)      |                              |



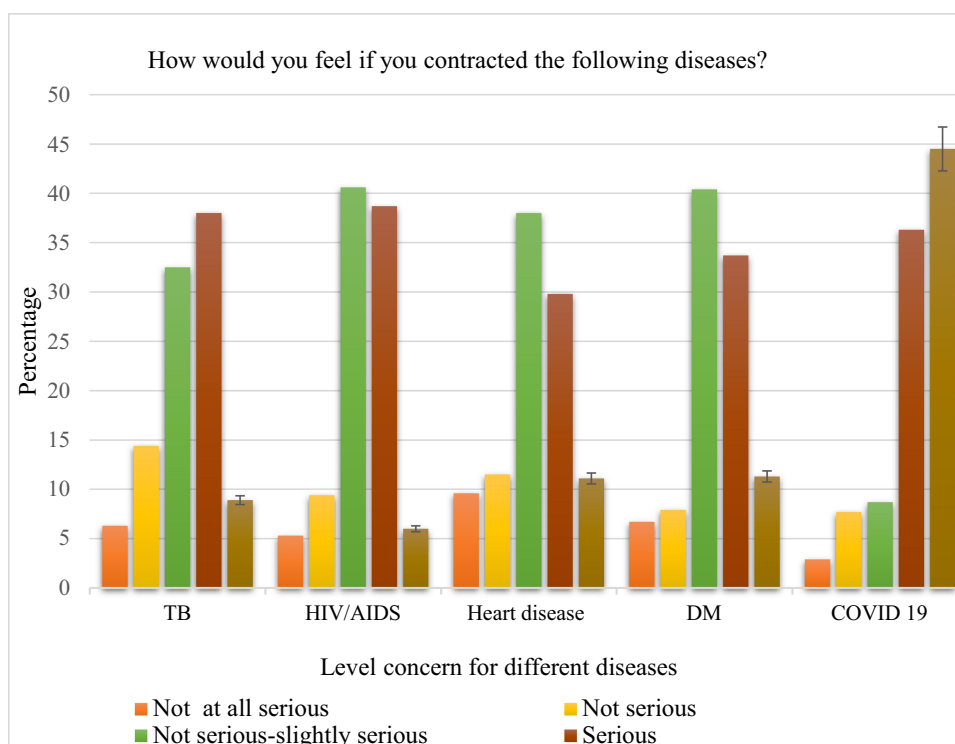


Figure 1 Level concern about seriousness COVID-19 in comparison with different diseases, 2020. (n=416).

China.<sup>19</sup> In addition, most waiters perceived that their work exposes them more to the virus than other persons.

The study showed that a very small proportion of study participants were following the recommended protective behaviors. For instance, only 6% and 4.1% of the respondents were wearing facemask and gloves always at work, respectively. These findings are lower compared to a study done in Iran.<sup>27</sup> This variation could be due to difference in study populations, awareness, availability of protective equipment, and effect of the pandemic across study

settings. Also, the low facemask use in our study could be due to the controversies on the importance of facemask to prevent the transmission of the virus during the earlier phase of the pandemic.

The study also showed that the higher the perceived risk regarding COVID-19, the more likely practicing protective behaviors. This finding is consistent with other studies.<sup>11,12,14,23</sup> This implies proper risk communication that addresses susceptibility to the virus and the severity of the disease could enhance protective behaviors such as

Table 4 Practice COVID-19 Prevention Methods Among Waiters in Southwest Ethiopia, 2020 (n=416)

| Questions   | None      | Rarely   | Sometimes | Frequently | Always   |
|---|-----------|----------|-----------|------------|----------|
|   | N (%)     | N (%)    | N (%)     | N (%)      | N (%)    |
| How often are you maintain physical distance?   | 22(5.3)   | 39(9.4)  | 112(26.9) | 151(36.3)  | 92(22.1) |
| How often are you avoiding larger gatherings?   | 57(13.7)  | 58(13.9) | 94(22.6)  | 110(26.4)  | 97(23.3) |
| How often are you avoiding touching your face, eyes, mouth, and nose?                         | 73(17.5)  | 78(18.8) | 122(29.3) | 68(16.3)   | 75(18)   |
| How often are you washing your hands with water and soap or sanitizers?                       | 111(26.7) | 45(10.8) | 78(18.8)  | 102(24.5)  | 80(19.2) |
| How often are you avoiding contact with people who had fever and cough?                       | 110(26.4) | 38(9.1)  | 60(14.4)  | 110(26.4)  | 98(23.6) |
| How often are you wearing facemask when you are at work or outside the home                   | 161(38.7) | 74(17.8) | 108(26.0) | 48(11.5)   | 25(6.0)  |
| How often are you avoiding using public transportation?                                       | 118(28.4) | 67(16.1) | 124(29.8) | 46(11.1)   | 61(14.7) |
| How often are you avoiding unprotected contacting (touching) of frequently contacted surfaces | 68(16.3)  | 65(15.6) | 126(30.3) | 99(23.8)   | 58(13.9) |
| How often are you staying home to prevent COVID-19 infection?                                 | 178(42.8) | 57(13.7) | 74(17.8)  | 42(10.1)   | 65(15.6) |
| How often are you using glove at work?  | 189(45.4) | 72(17.3) | 110(26.4) | 28(6.7)    | 17(4.1)  |

**Table 5** Self-Efficacy to Practice COVID-19 Prevention Methods Among Waiters in Southwest Ethiopia, 2020 (n=416)

| Questions   | Certainly Not | Probably Not | Perhaps Not – Perhaps | Probably Yes | Most Certainly |
|---|---------------|--------------|-----------------------|--------------|----------------|
|   | N (%)         | N (%)        | N (%)                 | N (%)        | N (%)          |
| Do you think that you manage to handwash with water and soap or sanitizer frequently? | 26(6.3)       | 62(14.9)     | 24(5.8)               | 217(52.2)    | 87(20.9)       |
| Do you think that you manage to stay at home?   | 34(8.2)       | 183(44.0)    | 22(5.3)               | 101(24.3)    | 76(18.3)       |
| Do you think that you manage to maintain distancing anywhere?                         | 11(2.6)       | 124(29.8)    | 36(8.7)               | 153(35.8)    | 92(22.1)       |
| Do you think that you manage to use face mask always outside the home /at work?       | 25(6.0)       | 133(32.0)    | 39(9.4)               | 143(34.4)    | 76(18.3)       |

frequent hand washing, wearing of face mask, avoiding public gatherings, and social distancing.

The higher the age, the more perceived risk towards COVID-19. The risk of death from the COVID-19 virus is higher among older people.<sup>28</sup> As a result, older people might have higher perceived severity of the COVID-19 pandemic. On the other hand, during the earlier phase of the pandemic,

it was wrongly perceived older people infected with the virus more than younger. This might also give rise to the perception that older people are highly susceptibility to the virus.

The knowledge about COVID-19 is also positively associated with perceived risk regarding COVID-19. A similar finding was also reported by previous studies.<sup>20,29</sup> This could be due to individuals who had high-perceived risk might

**Table 6** Factors Associated with Risk Perception Towards COVID-19 Disease Among Waiter in Southwest Ethiopia, 2020

| Variables                         | Simple Linear Regression |         | Multiple Linear Regression |         |
|-----------------------------------|--------------------------|---------|----------------------------|---------|
|                                   | $\beta$ (95 % CI)        | P value | $\beta$ (95 % CI)          | P value |
| Age                               | 0.16 (0.09,0.24)         | <0.001  | 0.10 (0.02,0.18)           | 0.012   |
| Sex                               |                          |         |                            |         |
| Male                              | Ref                      |         |                            |         |
| Female                            | 0.15 (-1.14,1.45)        | 0.824   |                            |         |
| Marital status                    |                          |         |                            |         |
| Single                            | Ref                      |         |                            |         |
| Widowed                           | 0.17 (-2.30,1.96)        | 0.874   |                            |         |
| Married                           | -0.35 (-3.10,2.41)       | 0.805   |                            |         |
| Religion                          |                          |         |                            |         |
| Orthodox                          | Ref                      |         |                            |         |
| Muslim                            | 0.06 (-1.75,1.88)        | 0.947   |                            |         |
| Protestant                        | -0.46 (-2.16,1.23)       | 0.592   |                            |         |
| Educational status                |                          |         |                            |         |
| Secondary or above                | Ref                      |         | Ref                        |         |
| Primary                           | 0.78 (-0.52,2.07)        | 0.238   | 1.32 (-0.06, 2.69)         | 0.060   |
| No formal education               | -0.99 (-2.63,0.64)       | 0.234   | 0.52 (-1.23, 2.26)         | 0.557   |
| People live with respondent       |                          |         |                            |         |
| Live alone                        | Ref                      |         | Ref                        |         |
| Live with one or more persons     | 1.29 (-0.28,2.88)        | 0.108   | 1.38 (-0.13, 2.88)         | 0.073   |
| Knowledge of COVID-19 (sum score) | 0.55 (0.29,0.82)         | <0.001  | 0.50 (0.23, 0.76)          | <0.001  |
| Preventive behaviors (sum score)  | 0.75 (0.47,1.02)         | <0.001  | 0.62 (0.33, 0.90)          | <0.001  |
| Self-efficacy (sum score)         | 0.28 (0.11,0.45)         | 0.001   | 0.12 (-0.06, 0.28)         | 0.216   |
| Model intercept                   |                          |         | 26.12 (21.45,30.79)        | <0.001  |



follow the media frequently or read about the pandemic more often. Likewise, people's knowledge of the spread of the virus and case fatality might affect the risk perception regarding the pandemic. However, due to the cross-sectional nature of this study, we cannot confirm the exact temporal relationship between knowledge and risk perception.

## Limitations

Due to the cross-sectional nature of this study, we cannot assess how risk perceptions change over time. Furthermore, the temporal relationship between the outcome and predictor variables cannot be established. Also, there might be the risk of social desirability bias since individual behaviors have public health implications and the data were collected through self-report.

## Conclusions

A higher level of risk perception was found regarding the COVID-19 among waiters working in food and drinking establishments in southwest Ethiopia. The risk perception was positively associated with age, knowledge, and preventive behaviors. Proper risk communication to promote protective behaviors is very essential since waiters are more at risk to be infected with COVID-19 and their infection with the virus has public health implications. The findings from the current study provided the evidence for health policy on the risk perception, and its association with preventive behaviors among waiters during the early stage of the COVID-19 pandemic.

## Data Sharing Statement

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

## Ethical Approval and Consent to Participate

This study was conducted per the Declaration of Helsinki. Ethical clearance was obtained from the Institutional Review Board (IRB) of Mizan-Tepi University. The participants have informed the purpose of the study and gave written consent before the interview. Participation in the study was completely voluntary, and the right to withdraw from the interview was also secured. Confidentiality of the information was ensured throughout the study.

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## Disclosure

The authors declare that they have no competing interests.

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