Institute of Health Science

Faculty of Public Health

Department of Environmental Health Science and Technology

Knowledge, practice level and associated factors of COVID-19 prevention among the rural community in Semen Bench district, southwestern Ethiopia

By

Sisay Ketema (BSc)

Research Submitted to Faculty of Public Health, Department of Environmental Health Sciences and Technology, Jimma University; in Partial fulfillment for the requirements for Degree of Masters in Environmental Health

August 2020

Jimma, Ethiopia

Knowledge, practice level and associated factors of COVID-19 prevention among the rural community in Semen Bench district, southwestern Ethiopia

BY

Sisay Ketema (BSc)

Advisor: Prof. Dr. Argaw Ambelu

Mr. Wondowson Birke (MSc)

Mr. Beuzayehu Alemayehu (PhD candidate)

August 2020

Jimma, Ethiopia

ABSTRACT

Background: COVID-19 is the newly emerged disease in the world. Upon the first confirmed in December 2019 in Wuhan city of China, it becomes the global burden, and attacks both developed and developing countries.

Objectives: To assess the knowledge, practice level, and associated factors of COVID-19 prevention among the rural community in Semen Bench district, southwestern Ethiopia.

Method: Community-based cross-sectional study was conducted, from May 10 to July 25, 2020. A total of 768 study participants were included in this study. Data was collected through face to face interviews with structured questionnaires adapted from different published articles. Data was entered into Epi-data version 4.4, and exported into SPSS version 23 and analyzed using descriptive, binary logistic, and multivariable logistic regression to identify associated factors with p-value < 0.05 on knowledge and practice level toward COVID-19. Finally, the result was presented in texts, graphs, and tables.

Result: Of 720 subjects were participated in the study making response rate 93.8%. Accordingly, the mean knowledge and practice score were 4.81 and 1.83 respectively. More than half of the participants, 398 (55.3%) and 482 (66.9%) had good knowledge and practice to prevent COVID-19 respectively. Good prevention practice (AOR= 2.04, 95% CI: (1.50, 2.83) p=0.000, and those family size >=5 (AOR= 1.61, 95% CI: (1.11, 2.33) p= 0.012 were significantly associated with good knowledge toward COVID-19. Similarly, married participants (AOR= 1.81, 95% CI: (1.22, 2.69) p= 0.003, Secondary education (AOR= 1.78, 95% CI: (1.19, 2.98) p= 0.028, being student (AOR=2.27,95%CI:(1.19,4.36) p=0.014 were significantly associated with good practice toward COVID-19 prevention.

Conclusion: Almost more than fifty percent of the participants had good knowledge and practice toward COVID-19 prevention, but it is not enough to reduce the transmission. Therefore, the Semen Bench district Health department and Health Extension Workers should better to work together on awareness and practices toward COVID-19 prevention for the rural communities.

Key: COVID-19, knowledge and practice, rural community, Ethiopia

ACKNOWLEDGEMENT

I would like to thanks my advisors; Prof. Dr. Argaw Ambelu, Mr. Wondowson Birke (MSc), and Mr. Beuzayehu Alemayehu (Ph.D. candidate) from Jimma University, Institute of Health, Faculty of Public Health, Department of Environmental Health Science and Technology for their vital contribution during Research development.

My thanks go to Mizan Aman Health Science Collage for their MSc sponsorship and Jimma University, Department of Environmental Health Science and Technology provided me the MSc program.

I also thank the Bench Sheko zone health department and district health office for their contribution background information about the study area.

Contents

SUMMARY ..... **Error! Bookmark not defined.**
ACKNOWLEDGEMENT iii
LIST OF FIGURES vi
LIST OF TABLES vii
ACRONYMS viii
CHAPTER ONE 1
INTRODUCTION 1
1.1 Background 1
1.2 Statement of the problems 2
1.3 Significance of study 3
CHAPTER TWO 4
LITERATURE REVIEWS 4
2.1 Overviews of COVID-19 4
2.2 Public Knowledge on COVID 19 and associated factors 4
2.3 Preventive practice of COVID-19 and associated factors 7
CHAPTER THREE 10
OBJECTIVES 10
3.1 General objective: 10
3.2 Specific objectives: 10
CHAPTER FOUR 11
METHOD AND MATERIALS 11
4.1 Study area 11
4.2 Study design and period 12
4.3. Sample population, Sample size determination and sampling techniques 12
4.3.1. Sample Population 12
4.3.2. Sample size determination 12
4.3.3. Sampling techniques 12
4.4. Study Variables 13

4.4.1. Dependent variable 13
4.4.2. Independent variable 13
4.5. Inclusion and exclusion criteria 14
4.5.1. Inclusion criteria 14
4.5.2. Exclusion criteria 14
4.6. Operational definitions 14
4.7. Data collection tools and procedure 14
4.8. Data quality management 15
4.9. Statistical analysis 16
4.10. Ethical consideration 16
4.11. Dissemination plan 16
CHAPTER FIVE 17
RESULTS 17
5.1. Sociodemographic characteristics of respondents 17
5.2. Response on the mode of transmission and Symptoms of COVID-19 18
5.3. Knowledge of the participants on Prevention of COVID-19 19
5.4. Factors associated with the level of knowledge on COVID-19 19
5.5. Prevention practices of the participants toward COVID-19 22
5.6. Factors associated with the level of practice on COVID-19 22
CHAPTER SIX 25
DISCUSSION 25
Limitation of study 28
CHAPTER SEVEN 29
CONCLUSION AND RECOMMENDATION 29
7.1. CONCLUSION 29
7.2. RECOMMENDATION 30
REFERENCE 31
ANNEXES 35

LIST OF FIGURES

Figure 1.Conceptual framework to assess knowledge, practice level, and associated factors toward COVID-19 among the rural community in Semen Bench district, southwestern Ethiopia, 2020 9
Figure 2. Map of Semen Bench district, Southwestern Ethiopia 2020 11
Figure 3. Sampling techniques and procedures used to selected study participants in Semen Bench district, Southwestern Ethiopia, 2020 13
Figure 4. The participant's response on the mode of transmission of COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 18
Figure 5. The participant's response on the symptoms of COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 18
Figure 6. The participant's response on the prevention of COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 19
Figure 7. The prevention practice of the participants toward COVID-19 in Semen Bench district, Southwestern Ethiopia, 2020 22

LIST OF TABLES

Table 1. Socio-demographic characters of the rural community in Semen Bench district, Southwestern Ethiopia,2020 (n=720). 17
Table 2. Binary logistic regression knowledge level, and associated factors of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 (n=720). 20
Table 3. Associated factors with the knowledge level of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 (n=720). 21
Table 4. Binary logistic regression practice level, and associated factors of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 (n=720) 23
Table 5. Associated factors with practice level of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 (n=720) 24

ACRONYMS

AOR	Adjusted Odd Ratio
CFR	Crude Fatality Rate
COR	Crude Odds Ratio
COVID-19	Coronavirus Diseases 2019
ECDC	European Communicable Disease Control
EHD	Ethiopia Health Data
EPHI	Ethiopia Public Health Institute
KAP	Knowledge Attitude Practice
SD	Standard Deviation
SNNPR	Southern Nation Nationality People Region
MOH	Ministry Of Health
VIF	Variance Inflation Factor
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background

SARS-CoV-2 is the newly emerged viruses in the world, and severely affect human respiratory organs (Ahmad et al., 2020). It was confirmed in December 2019 in Wuhan city of China (Li et al., 2020). In February 2020, the World Health Organization (WHO) called the infection coronavirus disease 2019 (COVID-19) (WHO, 2020c). The virus can persist in all the environments on Soil, Plastic, Coin, Metal, Mobil, Air, etc. (ECDC, 2020b; Murdach & Weiss, 2020). It can be transmitted from the contaminated surface through touching and contact mouth, nose, and eye by unhygienic hand and also, via direct breathing, talks, coughs, or sneezes with an infected person (Murdach & Weiss, 2020). The symptoms look like a common cold, but it identifies as the unique feature of the case such as fever, dry cough, fatigue, myalgia, and dyspnea (Watkins, 2020).

Knowledge and practice levels of the community toward the COVID-19 pandemic had been used as preventive measures to reduce the transmission rate of the disease in the community(Austrian, Pinchoff, Benjamin, & White, 2020; Watkins, 2020). World Health Organization and Communicable Disease Prevention and Control focus on the prevention strategies such as hand washing water with soap and alcohols based sanitizer, face mask, physical distancing, avoiding crowded places, stay at home, and like to protect the global community from COVID-19 (East et al., 2020; WHO, 2020b).

In Ethiopia, the first case of COVID-19 was registered on March 13, 2020. The government and Ministry Of Health (MOH) together promote and take action to reduce the transmission rate by apply prevention measures such as wash hands frequently using soap, maintain social distancing, stay minded and follow the advice given by healthcare providers. Stay at home at all times if you experienced symptoms, and if needed medical advice and call in advance the center assigned for COVID-19 response (Baye, 2020; EHD, 2020).

1.2 Statement of the problems

COVID-19 pandemic becomes the global burden, and around 216 countries were attacked by the virus. As reported by the world health organization on August 16, 2020, around 21,294,845 of the confirmed case and 761,779 death (CFR=3.58%) were registered globally. The highest caseload was observed in the United States of America 5,258,565 confirmed case and 167,201 death (CFR=3.18%), followed by Brazil 3,275,520 confirmed case and 106,523 death(CFR=3.25%) (WHO, 2020a). Studies revealed on the knowledge and practice level of the community toward COVID-19, in China 90% of the participants had good knowledge, and around ninety-eight and ninety-six percent of the participants wear masks and did not visit a crowded place respectively (Li et al., 2020). Similarly in India Community, 80.64% of participants knew COVID-19, and 93.8% were practice to protect their health (Tomar et al., 2020). In Bangladesh, a good knowledge and practice level was 48.3% and 55.2% respectively (Islam, Zannatul, Sikder, Syed, & Vadivia, 2020).

As reported by WHO on August 16, 2020, fifty-six countries in Africa were affected by the COVID-19, and 945,165 confirmed cases and 18,476 death(CFR=1.95%) were registered in Africa. The case burden was high in South Africa 583,653 confirmed case and 11,677 death (CFR=2%) and followed by Egypt 96,336 confirmed case and 5,141 death(CFR=5.33%) (WHO, 2020a). The public information toward COVID-19 prevention revealed in Ghanaian 62.7% of the respondents had good knowledge and significantly associated with the level of education (Serwaa, Lamptey, Baffour, Kumi, & Kyeremeh, 2020)

In Ethiopia, more than one hundred million people live in 10 regions, and two Federal administrative cities. The socio-economy, cultural, educational, lifestyle, in terms of residence rural and urban, and like that makes challenges to control the disease in the region (Kebede, 2020). Additionally, the health conditions of the countries both communicable and non-communicable diseases are one that contributing factor to the case burden (EPHI, 2020). Upon the first case was identified in Addis Ababa on March 13, 2020, and the transmission rate of the virus increase from time to time. As of World health organization reported on August 16, 2020, In Ethiopia, total confirmed case 28,894 and 509 death(CFR=1.76%) were registered (WHO,

2020a). The caseload was highly reported, in Addis Ababa 19,845 case, Oromia 3193, and Tigray 1964 while, the Southern Nation Nationality People of the region (SNNPR) reported 570 cases (EPHI, 2020). Nearly half (49.4 %) of respondents had an knowledge about COVID-19.Sex, education level, religion, symptom, and knowing prevention methods were factors for associated with an understanding of COVID-19 (Mohamed et al., 2020).

Rural communities are the most vulnerable groups for all communicable diseases due to lifestyle and socio-economic status relative to the urban area. Special consideration should be paid to the rural community since the disease becomes community transmission. Moreover, there are limited studies were conducted to assess the knowledge and practice level of the community toward COVID-19 prevention in Southwestern Ethiopia. However, this thesis focused on the knowledge and practice level of COVID-19 prevention among the rural community in Semen Bench district.

1.3 Significance of the study

This thesis provides information on the knowledge and practice of the rural community regarding the COVID-19 pandemic. The levels of community knowledge and practice toward COVID-19 prevention will be used as a baseline for the government and non-governmental organizations to prepare plans and action to combat COVID-19. Similarly, it is used to evaluate the level of knowledge and practice to prevent COVID-19 in the study area.

Furthermore, the result of the study will be used as one of the evidence for further exploring information about the knowledge and practice of the rural community toward COVID-19 prevention.

Lastly, the results of the study will be communicated with the concerned body to support the prevention intervention program globally and the national level to protect the study communities and other similar areas. Moreover, it is used as a baseline for the researcher as well as program planners.

CHAPTER TWO

LITERATURE REVIEWS

2.1 Overviews of COVID-19

The community knowledge and practice level regarding COVID-19 prevention have a great contribution to develop prevention strategies and reduce the case burden in the country. Different Media and volunteer groups also promoting the transmission and prevention of ways of the virus to address the large majority of the world community (Baye, 2020; Bikbov & Bikbov, 2020; ECDC, 2020a). Despite many Media, Health professionals, and other volunteers promote the prevention measures against COVID-19, people had different levels of knowledge, and practice throughout the world, this might be due to many factors such as; lifestyle, residence(urban& rural), marital status, educational status, occupational status, age, income, and like. Here is below reviewed literature that was studied on Knowledge, practice associated factors of people had toward COVID-19 prevention.

2.2 Public Knowledge on COVID 19 and associated factors

A cross-sectional survey was conducted in China from 6910 study participants. The mean COVID-19 knowledge of the participants was 10.8 (SD: 1.6, range: 0-12), and 90% of the overall participants were correct rate on this knowledge test. The knowledge scores significantly differ across genders, age-groups, categories of marital status, education levels, and residence places ($P<0.001$). Multiple linear regression analysis showed that male gender (vs. female, β: -0.284, $P<0.001$), age-group of 16-29 years (vs. 30-49 years, β: -0.302, $P<0.001$), marital status of never-married(vs. married), education of bachelor's degree or lower (vs. master's degree and above, and occupations of unemployment (β: -0.158, $P=0.040$) and students were significantly associated with lower knowledge scores (Li et al., 2020).

Another study conducted in India community through an online survey, around 7,978 participants were involved to gather the information regarding COVID-19. The result of the survey on the level of knowledge, the mean was 11.36 ± 1.2 (range 0-13) suggesting an overall 80.64% correct rate of knowledge. Univariate analysis with knowledge level significantly varies across age, gender, education, and occupation. Higher education ($\beta=0.029$:$p<0.001$), the gender

of males (β=0.036: occupation (β=0.002:p=0.05) have associated significantly with high knowledge score (Tomar et al., 2020).

An online cross-sectional survey was conducted in Bangladesh from 2045 participants. Among 2045 respondents, 54·87% of respondents kept good knowledge. The knowledge significantly diverged across age, gender, education levels, residences, income groups, and marital status. Almost half of the respondents 54.87% of them have good knowledge (Haque et al., 2020). Similarly, the study showed in Bangladesh a good knowledge score was 48.3% and 55.2% of the respondents had good practice to prevent COVID-19 pandemic (Islam et al., 2020).

A cross-sectional study was conducted in Malaysia from 4,850 participants, the average knowledge score for participants was 10.5 (SD = 1.4, range 0–13). The overall correct answer rate of the knowledge questionnaire was 80.5% (10.5/13*100) while the range of correct answer rates for all participants was between 46.2 to 100%. Only 43.3% of participants answered correctly when asked if the virus was airborne (Mohamad, Anis, Rezal, Jen, & Hadi, 2020). Studies were conducted in the Philippines among income-poor households. The knowledge level of the participants on the symptoms of COVID-19, coughing, and sneezing was answered by 89.5% of the participants as transmission route of the virus, similarly, 72% of respondents hand contact contribute as the vehicle to transmit the virus. Around 89.9% of the participants responded that practicing hand washing as a means of prevention method of the COVID-19 (Leehang et al., 2020).

A cross-sectional study was done in Riyadh, Saudi Arabia from 1769 participants 58% of the participant had a moderate level of awareness. The gender of the participants was the only common characteristic significantly associated with knowledge. About (60%) of males had the level of knowledge compared to female participants 57% (Alotaibi, Alahdal, & Basingab, 2020). Another study revealed in Saudi Arabia from 3,388 participants, the mean COVID-19 knowledge score was 17.96 (SD = 2.24, range: 3–22), the overall accuracy rate for the knowledge test was 81.64%,which indicates a high level of knowledge, However, men are less Knowledge ($\beta = -0.018$; $p < 0.001$) compare to women. There is no difference in KAP along with the marital status of the respondents toward COVID-19 (Al-hanawi, 2020). Good knowledge was less likely to practice preventive measurement throughout the community (Rios-gonzález, 2020)

A cross-sectional study was conducted in Egypt from 559 public participants. The total knowledge score ranged from 7 to 22, with a mean of 16.39 ± 2.63. It was significantly lower among older, less educated, lower-income participants, and rural residents (Samir et al., 2020).

A cross-sectional study showed in Gahanna the public knowledge regarding COVID-19, a total of 350 participants were recruited into the analysis of which 56% were males, with the majority of the study population aged between 18-30 years 61.4%, and 95.1% were attained tertiary education. Regarding COVID-19, 62.7% had “good” knowledge about the outbreak (Serwaa et al., 2020). In Uganda, 83.9% of the participants had good knowledge score (Ssebuufu et al., 2020).

A study conducted in Cameroon on 545 studies participants on the level of Knowledge who consented, 21.9% had correct knowledge of COVID-19, 43.8% had intermediate knowledge, 34.4% had poor knowledge and 11.93% did not know (Nicholas et al., 2020). A cross-sectional study was conducted in Tanzania from four hundred (400) residents with completed a survey. The mean age of study participants was 32 years, and females were the highest participants in study 216 (54.0%). There was no significant variation in demographic variables ($p>0.3$). Those, who held a degree or above (60.3%) had a more knowledge, Overall, (84.4%) of participants had good knowledge and significantly associated with education level ($p=0.001$) (Rugarabamu, Ibrahim, & Byanaku, 2020). A study showed in Kenya Nairobi 2,009 individuals (63% female) participated. Most of the participant's responded fever and cough as symptoms of COVID-19, but only 42% listed difficulty breathing. Around (83%) knew anyone could be infected; younger participants had lower perceived risk. High-risk groups were correctly identified (the elderly - 64%; those with weak immune systems - 40%) however, 20% incorrectly stated children (Austrian et al., 2020). A study reviled in Sudanese 90% of the participants had good knowledge and it was associated with education level (Mohamed et al., 2020).

A study conducted in Ethiopia residents via the social platform with the author's network about 90% of the participants had good knowledge (Bekele et al., 2020). A study done in Amhara region on college Students knowledge was associated with family size, those who have family size more than five members had 56% less likely to be knowledgeable upon COVID-19 pandemic than those with small family size (Woday, Melese, Eshetie, Chanie, & Ali, 2020). A study done in Debre Berhan on undergraduate students 73.8% of the study participants had knowledgeable (Asmare, Yirag, Gebresellassie, Tadesse, & Shibabaw, 2020). A study conducted in Arbaminch town, marital status subcategory married respondents had less likely to had knowledge on coronavirus than single participants(Nassir, 2020).

2.3 Preventive practice of COVID-19 and associated factors

A cross-sectional study conducted in China on 6910 participants to assess the level of practice to protect health from coronavirus almost 98.0% and 96.4% of them wore masks and did not visit a crowded place (Li et al., 2020). Similarly, Study conducted in Iran from 8591 participants almost 89% of the participants were a good practice of preventive measures on COVID-19 (Shahriarirad, Erfani, Ranjbar, Mirahmadizadeh, & Moghadami, 2020). Another study conducted in India the practice around 90.7% of males and 97.1% of females take the proper measurement as advised by health professionals. The multivariable regression result reviled as male (β=0.093:p<0.001), old age (β=0.030:p<0.001), single (β=0.113:p<0.001), lower level of education (β=-0.007:p=0.007) were associated significantly with good practice (Tomar et al., 2020). A quick cross-sectional survey conducted in Paraguayan on 3141 participants practice of preventive measures such as not going crowded place and wore face mask 88.35 & 74.31 % respectively (Rios-gonzález, 2020).

Another Study conduct at the Malaysian public from 4,850 participants, most of the participants were taking precautions such as avoiding crowds (83.4%) and practicing proper hand hygiene (87.8%). However, the wearing of face masks was less common (51.2%) (Mohamad et al., 2020). A cross-sectional online survey conducted in Bangladesh people from 2017 studies participants almost 55.1% had more frequent practices for COVID-19 prevention, and (93.8%) good practicing of washing hands with soap and water. From study participants (98.7%) of them wore a face mask in the crowded place (Islam et al., 2020). The Bangladesh study showed as 95.45% of participants wash their hands and also 75.55% of respondents wore masks when going outside the home (Haque et al., 2020). A cross-sectional study conducted in Riyadh Saudi Arabia from 1767 participants, 80% of the participants had good practice against COVID-19, but the female were had slightly incremental practice than men 82% and 80% respectively (Alotaibi et al., 2020).

A study done in Ghanaian 62.7% of the respondents had good knowledge and significantly associated with the level of education(Serwaa et al., 2020). Similarly, Uganda 85.3% of the participants practice preventing COVID-19. In the prevention practice, 14.7% of the participants did not practice social distancing. Those married participants had 80% less likely to preventive practice than single AOR 0.8 p< 0.000. Students had 2 times more likely to use preventive practice than farmers toward COVID-19 (Ssebuufu et al., 2020). Level of knowledge on the

mode of transmission study showed in Cameron, hand washing 59.2%, not handshake 46.05, physical distance 31.7%, and face mask 55.8%. The knowledge on transmission of COVID -19 was answered as sneezing or cough(51.9%), contact with infected person 74.6%. The symptoms of an infected person such as fever 53.1%, cough 76.5% were answered by respondents. Around 93.5% of the respondents used face masks as prevention practices to prevent COVID-19 (Nicholas et al., 2020).

An online cross-sectional study conducted on Tanzania residents, the majority of the respondents (77%) did not go to a crowded place and wore masks when going out (80.0%) to protect their health against COVID-19 (Rugarabamu et al., 2020). A cross-sectional study conducted in Kenya on 2009 participants there were around 37% of participants wash hand and use hand sanitizer as prevention measurements, and social distancing around 61% of them apply to protect their health from COVID-19 pandemic disease (Austrian et al., 2020). A study showed in Sudanese the Prevention practice of the participants toward the novel COVID-19 was 89.8% (Mohamed et al., 2020). A study conducted in Sudan citizen 60.9% of the respondents had not visited any crowded area. but, only 49.3% of participants wore masks when going outside the home. Married participants more likely go to crowded place than unmarried (single) (Nasr et al., 2020)

In Ethiopia residents, the practice of social distancing and hand washing was 61% and 84% respectively. 83.9% of the respondent's answers wearing a mask can prevent COVID-19. Similarly, 93% of the response social distancing and 90% of them answers hand washing can protect from getting an infection of COVID-19. On Prevention practice COVID-19 around 40% of respondents still going to a crowded place, 76% not wearing a face mask, 61.1% kept social distancing in the public place, 84.5% of the respondents were washed hand and 20.8% of the participants practice handshaking during greeting (Bekele et al., 2020).

Similarly, a study conducted Southern Ethiopia from 585 residents on prevention measurements 80% of the participants had bad practice against the COVID-19, 93.3% of the respondents never used facemask, around 58% were practice hand washing, 43.3% of the participants practice handshake, and only 10% of the participants practice social distancing. Multivariate logistic regression results reveal that secondary school participants had 7 times more likely preventive practice than no formal education(AOR=6.903 (2.094– 22.756)$p<0.003$ (Mola et al., 2020). A study done in the Amhara region in Ethiopia on college students 69.6% and 65% of the respondents has good knowledge and practice respectively. The mode of transmission of

COVID-19 part responded by the participant 67.6% responses air droplets from an infected person, similarly, the respondents answer the symptoms of COVID-19 as fever 91.9%, dry cough 84.1%, and 79.4% shortness of breathing. 82.8% of the participants experience handwashing with water and soap. Single students were 2.3 times more likely to have good knowledge compare to married students AOR=2.3 95% CI:(1.09,5.55), students prevention practice on COVID-19 pandemic 65% have a good level of preventive practice regarding COVID-19 pandemic (Woday et al., 2020). A study reviled in Debre Berhan almost 91.4% had not visited the crowded place. 74% were washing their hand and 56% of respondents did not maintain social distancing (Asmare et al., 2020).

Another study conducted in Jimma university medical care center, knowledge levels of the visitors on COVID-19, around 95.1% knew the transmission of the virus through respiratory droplets from an infected person, 61% of the respondents thought children and young adult have to involved on the prevention practice. From the participants, 41.3% of visitors knew, and most of the participants practice prevention measurements like hand washing 77.3%, avoiding shaking hands 53.8%. Almost 95.5% of the respondents knew hand washing water with soap and avoiding crowded places as prevention measurements toward coronavirus (Kebede et al., 2020).

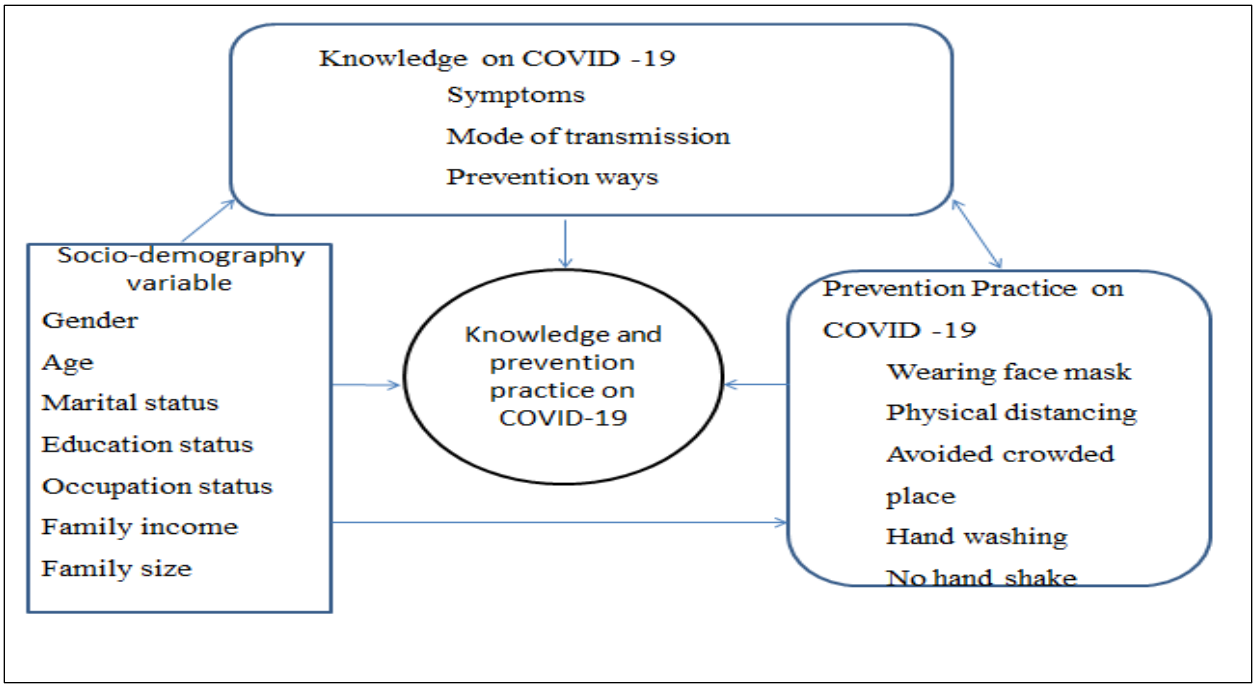

Figure 1.Conceptual framework to assess knowledge, practice level, and associated factors toward COVID-19 prevention in Semen Bench district, southwestern Ethiopia, 2020.

CHAPTER THREE

OBJECTIVES

3.1 General objective:

To assess the knowledge, practice level and associated factors of COVID-19 prevention among the rural community in Semen Bench district, Southwestern Ethiopia from May 10 to July 25, 2020

3.2 Specific objectives:

To assess the knowledge level regarding COVID-19 prevention

To assess the practice level toward COVID-19 prevention

To assess factors associated with the knowledge and practice level toward COVID-19 prevention

.

CHAPTER FOUR

METHOD AND MATERIALS

4.1 Study area

The study was conducted in the district of Semen Bench, Bench shako, Southwest Ethiopia, which is located 550 km from the capital city of Addis Ababa. The population estimated is 122, 585, of which 55,361 men and 67,224 women. The district has 24 kebeles with 29,610 households with on average family size of 4.14 (source: Bench Sheko information and communication office, 2020)

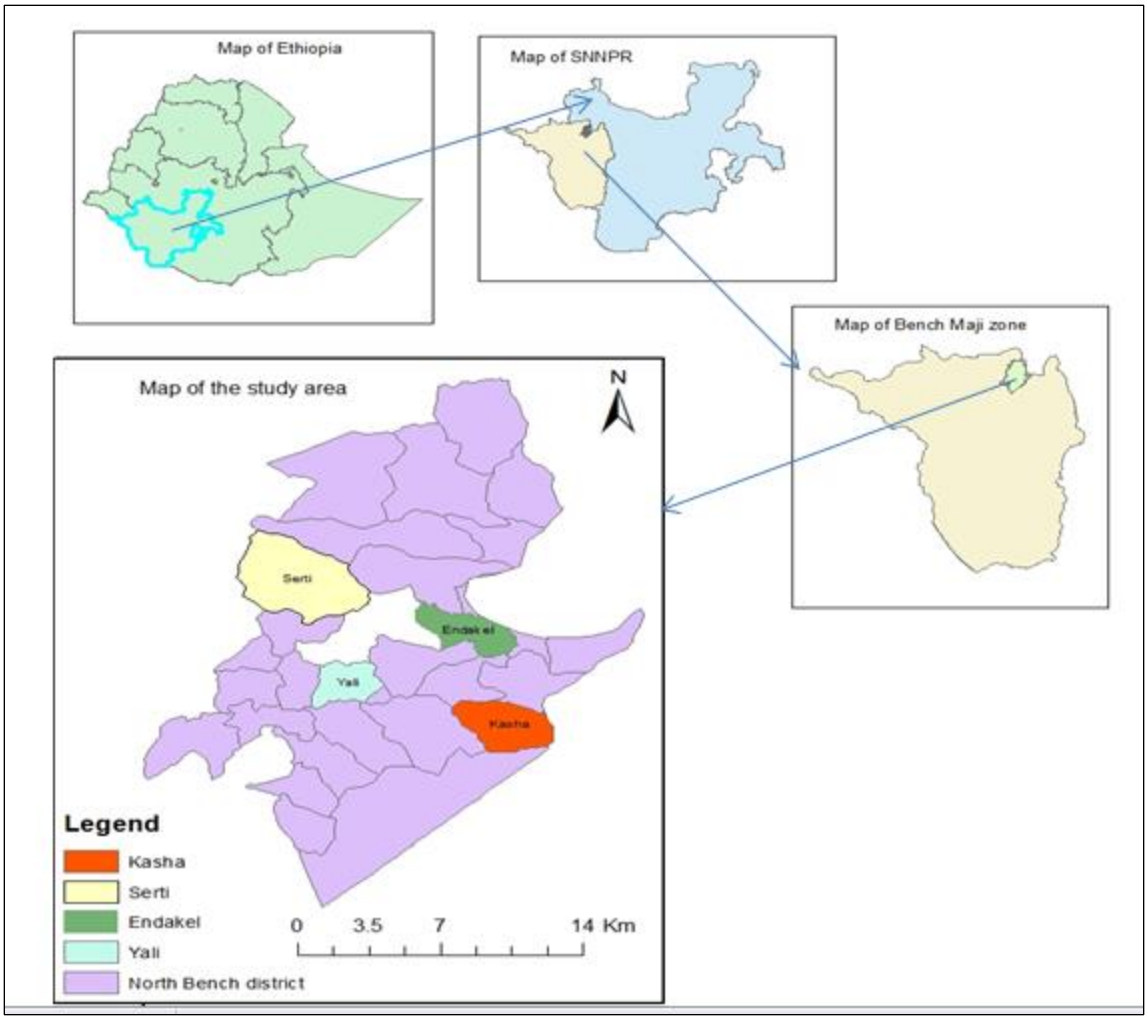

Figure 2. Map of Semen Bench district, Southwestern Ethiopia, 2020

4.2 Study design and period

A community-based cross-sectional study was conducted from May 10 to July 25, 2020, to gather information regarding COVID-19 prevention.

4.3. Sample population, Sample size determination, and sampling techniques

4.3.1. Sample Population

The sample populations of the study were every individual aged 18 years and above belong in the randomly selected four kebeles of the district. Study participants were all 18 years of age and older individuals, who were randomly, selected from the eligible individual in the selected household.

4.3.2. Sample size determination

The sample size was determined using single population proportion formula by considering the following assumption; The proportion of good knowledge & practice level in the rural community taken as 50% due to there is no similar studies were found regarding this topic, d=margin of error tolerated=5%, z=1.96 at 95% confidence level (at 5% type 1 error($p<0.05$), and (Charan & Biswas, 2013), and $n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}$ =384 samples.

Simple random sampling techniques were used at kebele and household levels to select an eligible individual in the study area. By considering sample selection error used 2 design effects to minimized sampling bias., and then the final sample size becomes 768.

4.3.3. Sampling techniques

After finalized the sample size calculation, four Kebeles were selected from twenty-four kebeles by lottery method, and then proportionally allocated the final samples of 768 based on the total household in each kebeles (Charan & Biswas, 2013). The households were selected by random number generator using the household number at the health post, which was previously registered on the family folder. Finally, individual study participants were selected randomly by a lottery method from identified households during data collection and continue until the allocated sample size was completed.

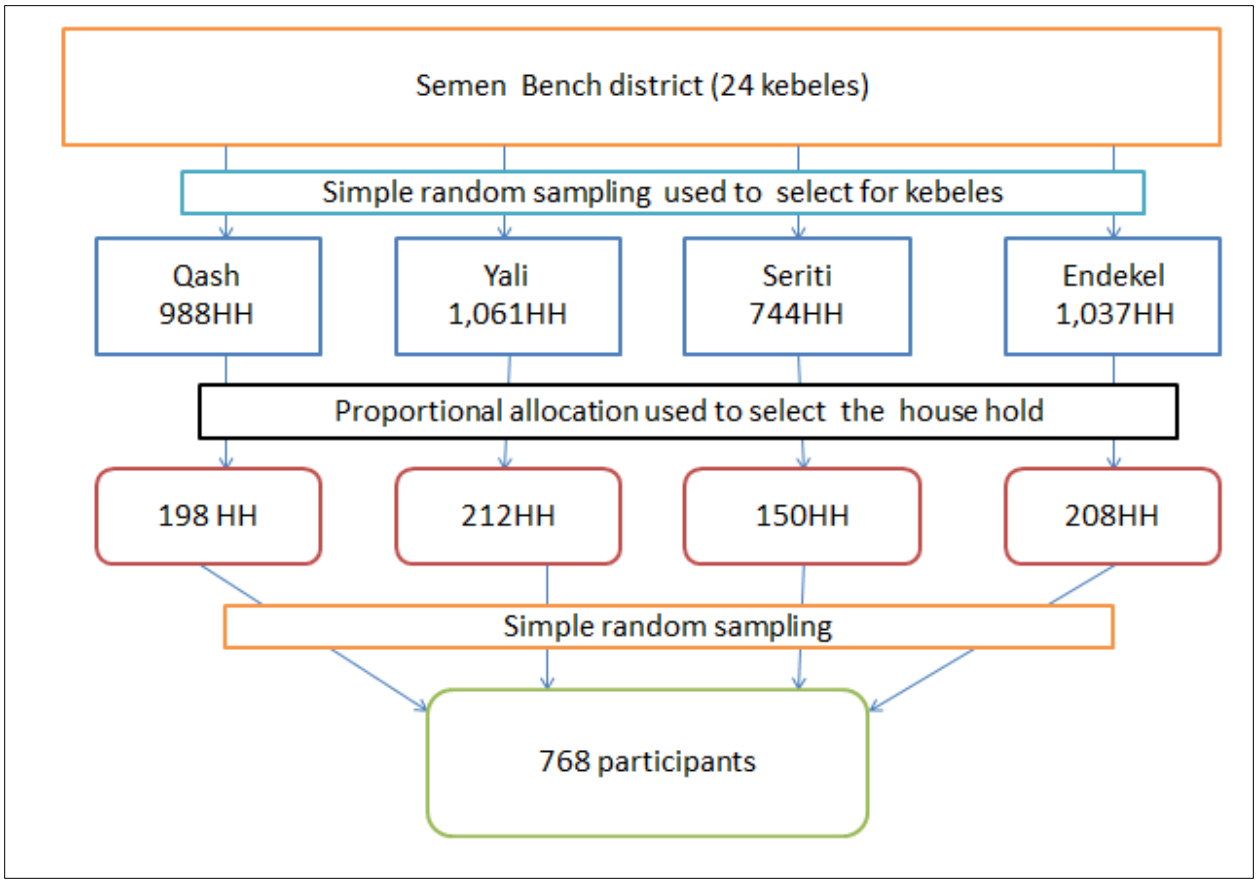

Figure 3. Sampling techniques and procedures used to selected study participants in Semen Bench district, Southwestern Ethiopia, 2020

4.4. Study Variables

4.4.1. Dependent variable

Level of knowledge

Level of practices

4.4.2. Independent variable

Age of respondents

Gender of respondents

Marital status

Education status

Monthly income

Occupation

Family size

4.5. Inclusion and exclusion criteria

4.5.1. Inclusion criteria

Family member

Age at least greater than 18

Not typically ill at the time of data collection

Psychologically and socially not disturbed

Volunteer to answer the question provided

4.5.2. Exclusion criteria

Typically ill at the time of data collection

Psychologically and socially disturbed

4.6. Operational definitions

Knowledge level: Those were correctly answered mean value greater than 4.82 (4.82*100) were considered as a good knowledge level, while those who answered below 4.82 of the knowledge questions were considered as having poor knowledge.

Practice level: Those who were correctly answered, and the mean value greater than 1.83 (1.83*100) were considered as good practice level, while those who correctly answered below 1.83 of the practice questions were considered as poor practice.

Physical contact: simply means that touching the inanimate objects with hand and touch the mouth, nose, and eyes with unhygienic hand, or unwashed hand.

Handshake: people contact their hand during greeting each other's.

4.7. Data collection tools and procedure

The survey instrument consisted of demographic characteristics, 11 items on knowledge, and 5 items on practices, adapted from previous studies on COVID-19 prevention with required modification based on the outcome variables and predictors. The questionnaire was prepared in English language and then translated into the Amharic language.

To measure knowledge about COVID-19, 11 items included the participant knowledge about symptoms (items 1–5), mode of transmission (items 6–8), and prevention and control (items 9–11) of COVID-19. The participants were asked to respond to the options on the items listed. A

correct response to an item was assigned 1 point, while an incorrect/not sure response was assigned 0 points. The maximum total score ranged from 0–11, with a higher score indicating better knowledge about COVID-19, similarly done for the practice of community on COVID-19 prevention with 1-5 items and maximum total score 0-5.

Before proceeding, to the data collection, 5% (37) samples were conducted pre-test in Shako district, which is 50 km from the study area. The result of the pre-test was checked, and some amendments were undertaken on the questionnaire, and then duplicated for the final data collection. Twelve data collectors (HEWs) from the kebeles and two supervisors from the district health office were selected, and training was given. The training session included on questioner items, techniques and how to approach the respondents as well as safety measures on COVID-19 prevention, which is recommended by Disease Prevention and Control: such as 6 feet away from the respondent, wear a face mask, and used sanitizer at the time of data collection(CDC, 2020). During the training session, a few questions were paraphrased to make more understand the ways, how to record their response on the questioner.

The selected households were arranged based on their respective kebeles and assign three data collectors for each kebeles. During data collection, the participants were selected randomly from the household and asked their willingness with verbal consent and oriented about the objective of the study, why and how they were selected, about confidentiality and voluntary participation, and how to respond to the questionnaire. Similarly, the trained supervisors have monitored the data collectors daily, and give feedback to correct the missed data. The data collection was completed within 14 days.

4.8. Data quality management

The pre-test was conducted to evaluate the consistency of the questioner, and some amendments are undertaken. Two days of training was given on the questionnaire and safety issue regarding COVID-19 prevention. The daily collected data was evaluated by the supervisors and gave feedback immediately. To facilitate the detection of data entry error, the collected data was entered and coded with Epi-data version 4.4, and then exported into SPSS version 23 for further analysis.

4.9. Statistical analysis

Data were analyzed with SPSS version 23. All required variables recording and transformation were done before the final data analysis. Frequency distributions, cross-tabulations, and graphs were used to describe the variables under the study. After assessing normality of distribution of data, the association between outcome variables and the predictor's variables including socio-demography variables, knowledge, and practice score good and poor were analyzed in bivariate logistic regression with each independent variable separately. Predictors' variables with p-values up to 0.25 in bivariate analysis were taken for the final model (multivariate logistic regression. Before conducting the multivariate logistic regression analysis, a preliminary analysis was conducted to ensure no violation of the assumption of multicollinearity. But the result showed as their no multicollinearity between the independent variables, which means the VIF was less than 5 and tolerance greater than 0.2. Multivariable logistic regression was done for all candidate variables. Factors were selected with a backward stepwise method, Hosmer-Lemeshow goodness of fit, and odds ratios (OR) and their 95% confidence intervals (CIs), and statistically significant variables were taken as a p-value less than 0.05 were used to quantify the associations between independent variables, and dependent. Finally, the result was presented in texts, graphs, and tables.

4.10. Ethical consideration

The study protocol, procedures, information sheet, and consent statement was approved by the Ethical review board (ERB) of Jimma University. (ERB000197/20). Participants, included in the study were informed about the study objectives and benefits. Verbal consent was taken from the participants, and who are willing to participate in the survey were asked information regarding COVID-19.

4.11. Dissemination plan

The finding of the thesis will be attached to Jimma university institute of health, Jimma university research coordinated office, Jimma university department of Environmental Health Science and Technology, SNNPR Health Bureau, Zonal Health department, and Woreda Health Office.

CHAPTER FIVE

RESULTS

5.1. Socio-demographic characteristics of respondents

The proposed sample size for this study was 768. Of these 720 subjects were participated in the study making a response rate of 93.8%. The study participants included 531(73.8%) females and 189(26.3%) males. The mean ages of the respondents were 29.4 years with SD 5.19 **(Table 1).**

Table 1. Socio-demographic characters of the rural community in Semen Bench district, Southwestern Ethiopia,2020 (n=720).

List of predictors	Categorical Variable	Frequency	%
Age groups **(years)**			
	18-29 yrs	381	52.9
	30-39yrs	302	41.9
	>=40yrs	37	5.1
	Mean (± St.D) of age (in a year)	29.4 ± 5.19	
Gender	Male	189	26.3
	Female	531	73.8
Marital status	Single	170	23.6
	Married	550	76.4
Education level	No formal education	346	48.1
	Primary education	250	34.7
	Secondary education	117	16.3
	More than secondary education	7	1
Occupation	Farmer	130	18.1
	Merchant	113	15.7
	Student	105	14.6
	Gov't employment	45	6.3
	Housewife	327	45.4
Family size	≥5	166	23.1
	<5	554	76.9
Monthly income(ETB)	<1000	443	61.5
	1000-1500	249	34.6
	>1500	28	3.9

ETB: Ethiopia Birr, St.D: Standard Deviation

5.2. Response on the mode of transmission and Symptoms of COVID-19

In this study 337(47.2%), 298(41.4%), and 344(47.8%) of them knew the transmission of the virus through breathing, sneezing, physical contact respectively (Figure 3).

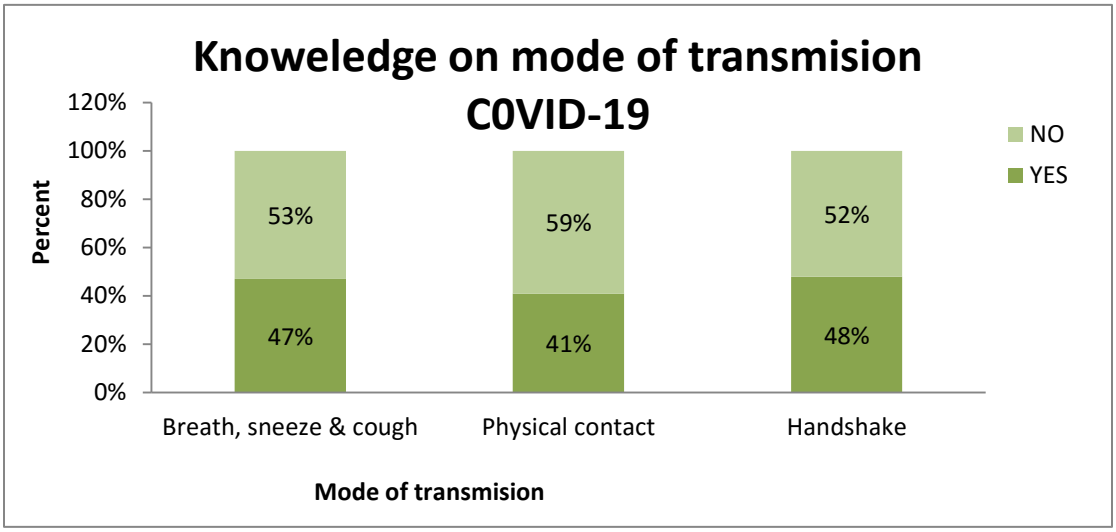

Figure 4. The participant's response on the mode of transmission of COVID-19 in Semen Bench district, Southwestern Ethiopia, 2020

Most of the participants 669(93%) were responded fever as symptoms of COVID-19, similarly, Dry-cough, and breathing difficulty 358(52.9%), 257(35.6%) respectively (Figure 4).

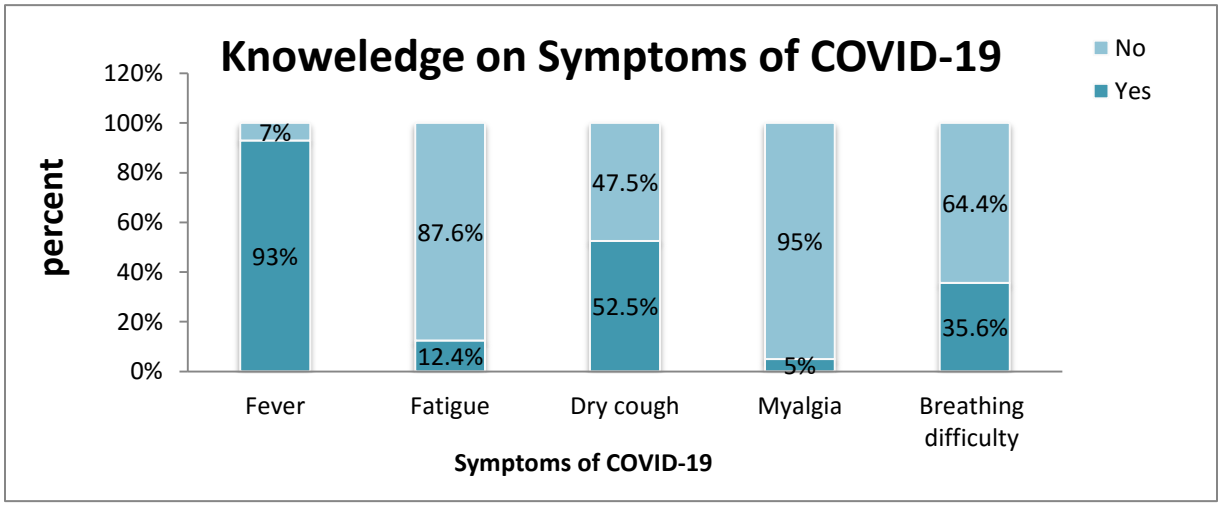

Figure 5. The participant's response on the symptoms of COVID-19 in Semen Bench district, Southwestern Ethiopia, 2020

5.3. Knowledge of the participants on COVID-19 Prevention

Regarding knowledge on the prevention of COVID-19, almost 90% of the participants knew hand washing was used as a prevention measure to prevent COVID-19, whereas avoiding going to a crowded place, and physical distancing was known by 41.5% & 14.1% of the participants respectively.

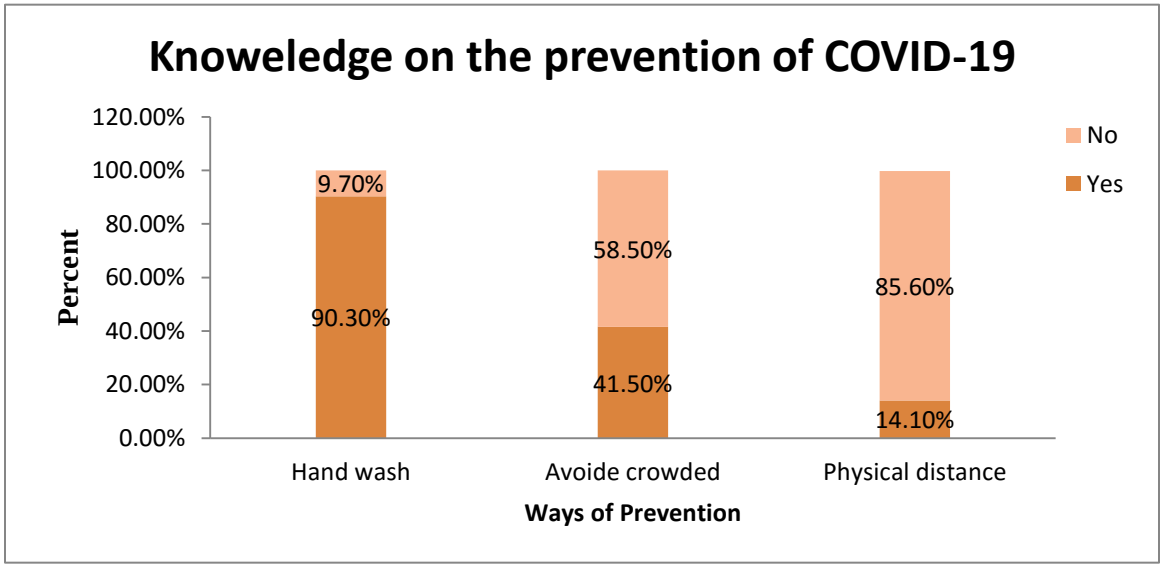

Figure 6. The participant's response on COVID-19 prevention in Semen Bench district, Southwestern Ethiopia, 2020

5.4. Factors associated with the level of knowledge on COVID-19 prevention

The mean knowledge score was 4.812 (44%) and SD 1.708 with the range of 0.00-11.00. More than half of the respondents were at the age of 18-29, which were 381 (52.9%). Half of the participant 398(55.3%) had good knowledge of the mode of transmission, symptoms, and prevention aspects on COVID-19.

Bivariate logistic regression result shown that, only four variables were significantly associated factors for knowledge level of COVID-19 prevention: merchant (COR=0.57,95% CI: (0.34,0.95) with p<0.030, family size greater than five (COR= 1.48, 95% CI: (1.04, 2.12) with p<0.030, and good prevention practice of COVID-19 (COR= 2.02, 95% CI: (1.47, 2.76) with p<0.000, and monthly income between 1000-1500 ETB (COR=1.41(1.03,1.94) with p-value 0.031(**Table 2)**.

The result of multivariate logistic regression showed that good prevention practice participants had 2.04 times more likely knowledgeable than poor prevention practice (AOR= 2.04, 95% CI:

(1.50, 2.83) with p<0.0001. The participants those family size greater than five were 1.61 times more likely knowledgeable on COVID-19 than <5 family members (AOR= 1.61, 95% CI: (1.11, 2.33) with p=0.012(**Table 3).**

Table 2. Binary logistic regression, knowledge level, and associated factors of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 (n=720).

variable	Knowledge status		COR 95%CI	p-value
	Poor(%)	Good(%)		
Gender				
Male	75(39.7)	114(60.3)	1	
Female	247(46.5)	284(53.5)	0.75 (0.54,1.06)	0.105*
Age groups				
18-29	183(48)	198(52)	1	
30-39	127(42.1)	175(57.9)	1.27(0.94,1.73)	0.119*
40+	12(32.4)	25(67.9)	1.93(0.94,3.94)	0.073
Marital status				
Single	78(45.9)	92(54.1)	1	
Married	244(44.4)	306(55.6)	1.063 (0.75, 1.50)	0.728
Educational status				
No formal education	165(47.7)	181(52.3)	1	
Primary education	110(44)	140(56)	1.16 (0.88, 1.61)	0.373
Secondary education	46(39.3)	71(60.7)	1.41 (0.92, 2.16)	0.117*
More than secondary education	1(14.3)	6(85.7)	5.47 (0.65, 45.91)	0.117*
Occupation				
Farmer	52(40)	78(60)	1	
Merchant	61(54)	52(46)	0.57 (0.34, 0.95)	0.030*
Student	42(40)	63(60)	1.00 (0.592, 1.69)	1.00
Gov't employee	14(31.1)	31(68.9)	1.48 (0.72, 3.04)	0.290
Housewife	153(46.8)	174(53.2)	0.76 (0.50, 1.15)	0.189*
Family size				
<5	260(46.9)	294(53.1)	1	
>=5	62(39)	104(61)	1.48 (1.04, 2.12)	0.030*
Practice				
Poor	134(56.3)	104(43.7)	1	
Good	188(39)	294(61)	2.02(1.47,2.76)	0.0001*
Monthly income(ETB)				
<1000	212(47.9)	231(52.1)	1	
1000-1500	98(39.4)	151(60.6)	1.41(1.03,1.94)	0.031*
>1500	12(42.9)	16(57.1)	1.22(0.57,2.64)	0.608

COR: Crude Odd Ratio, ETB: Ethiopia Birr, * p-value<0.25 statistically candidate variable

Table 3. Associated factors with the knowledge level of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia, 2020 (n=720).

variable	COR 95%CI	AOR (95%CI)	p-value
Gender			
Male		1	
Female	0.75(0.54,1.06)	0.981(0.51,1.90)	0.954
Age groups (year)			
18-29		1	
30-39	1.27(0.94,1.73)	1.21(0.87,1.67)	0.263
40+	1.93(0.94,3.94)	1.97(0.93,4.15)	0.076
Education status			
No formal education		1	
Primary education	1.16 (0.88, 1.61)	1.19(0.84,1.67)	0.329
Secondary education	1.41 (0.92, 2.16)	1.27(0.81,1.99)	0.290
More than secondary education	5.47 (0.65, 45.91)	4.59(0.53,39.7)	0.167
Occupational status			
Farmer		1	
Merchant	0.57 (0.34, 0.95)	0.64(0.30,1.37)	0.254
Student	1.00 (0.592, 1.69)	1.07(0.48,2.36)	0.874
Gov't employee	1.48 (0.72, 3.04)	1.60(0.72,3.57)	0.251
Housewife	0.76 (0.50, 1.15)	0.832(0.38,1.82)	0.645
Family Size			
< 5		1	
>= 5	1.48 (1.04, 2.12)	1.61 (1.11, 2.33)	0.012*
Practices level			
Poor		1	
Good	2.02(1.47,2.76)	2.04 (1.50, 2.83)	0.0001*
Monthly income(ETB)			
<1000		1	
1000-1500	1.41(1.03,1.94)	1.27(0.917,1.77)	0.149
>1500	1.22(0.57,2.64)	0.92(0.405,2.09)	0.842

COR: Crude Odd Ratio, AOR: Adjusted Odd Ratio, ETB: Ethiopia Birr, *p-value<0.05 statistically significant

5.5. The practice of the participants toward COVID-19 prevention

The prevention practice of the participants as shown in the pie chart, only 42% of the participants have used hand washing, the other 58% were not washing their hand, and 26% of the participants were used physical distance to prevent COVID-19, but 74% were not, similarly 22% of the participants avoid handshake, while 78% of them were not. Almost 98% of the participants did not wear a face mask to protect against COVID-19 (Figure 6).

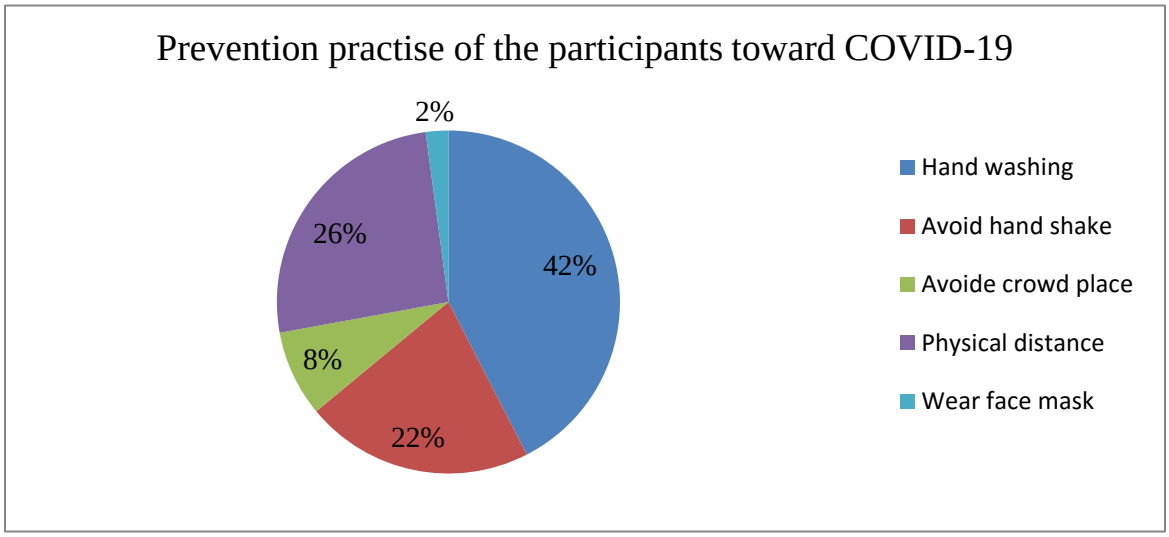

Figure 7. The practice of the participants toward COVID-19 prevention in Semen Bench district, Southwestern Ethiopia, 2020

5.6. Factors associated with the level of practice on COVID-19 prevention

Similarly, the prevention practice levels were ranged from 0 to 5 with a mean score of 1.83, and more than half of participants 482(66.9%) had good practice to prevent COVID-19.

The associated factor for the prevention practice of COVID-19 was identified by binary logistic regression analyses. Five variables were significantly associated with the prevention practice level of COVID-19: Secondary education (COR= 1.82, 95% CI: (1.12, 2.94) p=0.016, family size greater than or equal to five (COR= 1.62, 95% CI: (1.13, 2.32) p=0.008, being student (COR= 1.96, 95% CI: (1.06, 3.61) p=0.031, married (COR= 1.442, 95% CI: (1.01, 2.06) p=0.044, and good knowledge level (COR= 2.02, 95% CI: (1.47, 2.76) p=0.000 (**Table 4**).

Table 4. Binary logistic regression, practice level and associated factors of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia,2020 (n=720)

Variable	Practice status		COR 95%CI	p-value
	Poor(%)	Good(%)		
Gender				
Male	59(31.2)	130(68.8)	1	
Female	179(33.7)	352(66.3)	0.89 (0.63, 1.28)	0.532
Age groups (year)				
18-29	131(34.4)	250(65.6)	1	
30-39	95(31.5)	207(68.5)	1.14(0.83,1.58)	0.420
40+	12(32.4)	25(67.6)	1.09(0.53,2.24)	0.810
Marital status				
Single	67(39.4)	103(60.6)	1	
Married	171(31.1)	379(68.9)	1.44 2 (1.009, 2.060)	0.044*
Educational status				
No formal education	122(35.3)	224(64.7)		
Primary education	87(34.8)	163(65.2)	1.02 (0.73, 1.44)	0.908
Secondary education	27(23.1)	90(76.9)	1.82 (1.12, 2.94)	0.016*
More than secondary education	2(28.6)	5(71.4)	1.36 (0.26, 7.12)	0.715
Occupational status				
Farmer	41(31.5)	89(68.5)	1	
Merchant	42(37.2)	71(62.8)	0.78 (0.46, 1.33)	0.356
Student	20(19)	85(81)	1.96 (1.06, 3.61)	0.031*
Gov't employee	15(33.3)	30(66.7)	0.92 (0.45, 1.90)	0.824
Housewife	120(36.7)	207(63.3)	0.80 (0.51, 1.23)	0.298
Family size				
< 5	169(30.5)	385(69.5)	1	
>= 5	69(41.6)	97(58.4)	1.62 (1.13, 2.32)	0.008*
Knowledge score				
poor	134(41.6)	188(58.4)	1	
Good	104(26.1)	294(73.9)	2.015(1.47,2.76)	0.000*
Monthly income(ETB)				
<1000	155(35)	288(65)	1	
1000-1500	77(30.9)	172(69.1)	1.20(0.862,1.68)	0.277
>1500	6(21.4)	22(78.6)	1.97(0.784,4.97)	0.149*

COR: Crude Odd Ratio, ETB: Ethiopia Birr * p-value<0.25 statistically significant

The result from multivariate logistic regression, practice level on COVID-19 prevention showed that five variables were significant association with good practice level: married participants used preventive practice 1.81 times more likely than single (AOR= 1.81, 95% CI: (1.22, 2.69) p= 0.003. Similarly, secondary school participants used preventive practice 1.78 times more likely than no formal education (AOR= 1.76, 95% CI: (1.06,2.98) p= 0.028, good knowledge

levels of the participants used preventive practice 2.04 times more likely than poor knowledge level (AOR= 2.04, 95% CI: (1.47, 2.83) p=0.0001, and the family size >=5 had 57% less likely to used preventive measures than <5 family size (AOR= 0.570, 95% CI: (0.388, 0.824) p= 0.003(Table 5).

Table 5. Associated factors with practice level of the rural community toward COVID-19 in Semen Bench district, Southwestern Ethiopia, 2020 (n=720)

variable	COR 95%CI	AOR (95%CI)	p-value
Marital status			
Single	1	1	
Married	1.44 2 (1.009, 2.060)	1.81 (1.22, 2.69)	0.003*
Educational status			
No formal education	1	1	
Primary education	1.02 (0.73, 1.44)	1.12(0.781,1.61)	0..538
Secondary education	1.82 (1.12, 2.94)	1.78(1.06, 2.98)	0.028*
More than secondary education	1.36 (0.26, 7.12)	1.24(0.21,7.23)	0.810
Occupation			
Farmer	1	1	
Marchant	0.78 (0.46, 1.33)	0.86(0.498,1.50)	0.608
Students	1.96 (1.06, 3.61)	2.27(1.19,4.36)	0.014*
Gov't employee	0.92 (0.45, 1.90)	0.81(0.38,1.72)	0.577
Housewife	0.80 (0.51, 1.23)	0.86(0.55,1.34)	0.504
Family Size			
< 5	1	1	
>= 5	1.62 (1.13, 2.32)	0.57 (0.388, 0.824)	0.003*
Knowledge Status			
Poor	1	1	
Good	2.015(1.47,2.76)	2.04 (1.47, 2.83)	0.000*
Monthly income(ETB)			
<1000		1	
1000-1500	1.20(0.862,1.68)	1.14(0.803,1.62)	0.464
>1500	1.97(0.784,4.97)	1.95(0.731,5.19)	0.182

ETB: Ethiopia Birr, AOR: Adjusted Odd Ratio, COR: Crude Odd Ratio, *p-value<0.05 statistically significant

CHAPTER SIX

DISCUSSION

In this study, the knowledge level of the community was 55.3%, which indicates that almost half of the participants knew symptoms, transmission ways and prevention aspects toward the COVID-19, it is almost similar to the study done in Bangladesh people 48.3% (Islam et al., 2020) but, less than the study done in Malaysia 80.5% (Mohamad et al., 2020), India 80.6 (Tomar et al., 2020), Tanzania 84.4% (Rugarabamu et al., 2020), and in Ethiopia (Amhara region) 66.9% (Woday et al., 2020). The low level of knowledge score may be due to the socio-economic level, the participant's education status, and being rural residents also factors to access social media, which is transmitted by governmental and other private organizations.

On the assessment knowledge of participants around 669(92.9%) responded fever as symptom of COVID-19. Similarly in Peru 94.7% (J.A, B.N, & R, 2020), in Ethiopia Amhara region on college students 91.9% (Woday et al., 2020), and Bangladesh 99.4% (Islam et al., 2020). Almost most of the participants answered these symptoms. Dry-cough was answered by half of the respondents 378(52.5%). It was less response than studies done in Peru 88.9% (J.A et al., 2020), Amhara region 84.1% (Woday et al., 2020), and Kenya residents 86% (Austrian et al., 2020). This small proportion of the participants responded to this question may be due to several factors such as Educational status and being a rural community of the study participants. Besides, to the above question 256(35.5%) of the participants responded breathing difficulty one of the symptoms of COVID-19. It is similar to the study done in Kenya residents 42% (Austrian et al., 2020), but less than the Amhara region 79.4%(Woday et al., 2020). The discrepancy of the knowledge level on the symptoms of COVID-19 could be due to being rural residence and the educational levels of the participants.

On the mode of transmission of COVID-19, 337(47.2%) of the participants mentioned breathing, sneezing, and cough could be the transmission route for the virus. whereas, This result was less than the studies conducted in Cameroon 51.9% (Nicholas et al., 2020), 66.4% Bangladesh people (Islam et al., 2020), and 67.6% Amhara region (Woday et al., 2020). This difference response rate of the study participants on the mode of transmission may be due to educational status and being rural communities of the study participants. The other mode of transmission of the virus, handshake with the infected person were mentioned by 344(47.8%) of participants. Here is also a

low knowledge level compared to other studies conducted in Peru 84.8% (J.A et al., 2020), and in Malaysia 72% (Leehang et al., 2020). On the knowledge regarding the prevention of COVID-19, almost 90% of the participants knew hand washing used as a prevention measure to prevent COVID-19, similarly in Amhara region on college students 82.8% (Woday et al., 2020), and Jimma university medical care center on visitor 95.5% (Kebede et al., 2020). Whereas avoiding going to a crowded place, 41.5%, but less than the study conducted in Jimma on visitors 90.3% (Kebede et al., 2020). Physical distancing was known 14.1%, but less than the study done in the Amhara region on college students 47.3% (Woday et al., 2020).

On the knowledge and associated factors, those participants, who had a good prevention practice on COVID-19 significantly associated with good knowledge, and they had 2.04 times more likely knowledgeable than poor practice (AOR=2.04 95% CI :(1.50, 2.83) p=0.0001, similar with the study done in Bangladesh (Islam et al., 2020). Those participants having more than five family members were 1.61 times more likely Knowledgeable than less family size (AOR=1.61 95% CI: (1.11, 2.33). but, it contradicted with the study was done in Bangladesh 1.10 times more likely than greater than five family members (Islam et al., 2020), and on the other hand, those fewer family members 44% less likely knowledgeable than greater family size in Amhara region on a college student (Woday et al., 2020), this discrepancy may be due to study area, and level of education of the participants. Those participants with more family members may get more information from their connections and discuss it with their family together. On the other hand, more family member's probability has educated members, which easily understood the global & national situation and reflect on his/her family.

Good prevention practice level of the study participants were 482(66.9%) toward COVID-19 pandemic, similar with the study done in Amhara region on college students 65% (Woday et al., 2020), but less prevention practice level than the study done in India 83.8% among young and adolescent (Acharya et al., 2020) and 80% in southern Ethiopia (Mola et al., 2020), and 81% Saudi Arabia (Alotaibi et al., 2020), but it is more practice than the studies done in Bangladesh 55.2% (Islam et al., 2020), and 55.9 % on educated Ethiopia community (Dagne, 2019), this level of difference may be the mean score (cut point) taken as a reference to distinguished good and poor prevention practice, and study period i.e study conducted at the earlier as the COVID-19 pandemic event happened.

Almost all the participants on the prevention practice toward the COVID-19 prevention measures were below fifty presents. Hand washing with soap was practiced by 42% of participants, whereas in Malaysia 83.4% (Mohamad et al., 2020), 93.8% Bangladesh (Islam et al., 2020), Cameron 59.2% (Nicholas et al., 2020), 84 % in Ethiopia residence (Bekele et al., 2020), 77.3% in Jimma University Medical care center on visitors (Kebede et al., 2020), but comparable with the study done in Kenya 37% (Austrian et al., 2020), this level of preventive practice difference may be settlement pattern, educational status, and working condition. Twenty-six percent of the participants were used physical distance to prevent COVID-19, greater than the study done in college students in the Amhara region only 10% of the participant's practice (Woday et al., 2020). similarly, 22% of the participants avoid handshake, but less than a study conducted in southern Ethiopia 66.9% (Mola et al., 2020), and 53.8% Jimma university medical care center on visitors(Kebede et al., 2020). Almost 98% of the participants did not wear a face mask to protect against COVID-19 pandemic, less than the study done in Tanzania community 80% of the participants wear a face mask when going outside the home (Rugarabamu et al., 2020), and 74.3% in Paraguayans community (Rios-gonzález, 2020), but comparable with the study reveals in souther Ethiopia 93.3% of the participants (Mola et al., 2020).

The educational levels of the participants were significantly associated with the preventive practice of the COVID-19 pandemic. The multivariable logistic regression showed as secondary education levels 1.78 times more likely to practice the preventive measures than no formal education (AOR=1.78 CI: (1.06, 2.98) p=0.028. Similarly, the study was done in southern Ethiopia, secondary school students 7 times more likely to have good practice than no formal education (Mola et al., 2020), and again in the Arba-Minch community, those participants held a high level of education better preventive practice than lower (Nassir, 2020). The participants, who had a family size greater than five were 57% less likely to preventive practice on COVID-19 than less family size (AOR=0.57 CI : (0.388,0.824) p=0.003, but it contradicts with the study done in Amhara region on college students less than five family members have 72% less likely practice to prevention measures than those greater family size participants (Woday et al., 2020).
The marital status subcategory being married participants 1.81 times more likely to have good preventive practice toward COVID-19 than single (AOR=1.81 CI: (1.22,2.69) P=0.003. This deviated from a study done in Arba-Minch town, the Marital status of the participants, 42% less likely used prevention practice than single (Nassir, 2020), but similar to the study done in India

community, single participants were less likely prevention practice than married (Tomar et al., 2020), Amhara region on college students single participants 86% less likely practice than married (Woday et al., 2020), and on the other hand, both studies were contradicted with the study done in Saudi Arabia, marital status has no difference in KAP toward COVID-19 (Al-hanawi, 2020). These differences throughout the countries may be due to the educational level, economical status, and other factors among the community. Those who had a good knowledge level on COVID-19 were 2.04 times more likely to use the prevention practice than poor knowledge (AOR=2.04 CI : (1.47,2.83), Likewise good knowledge participants on COVID-19 were strongly associated with good practice (Tomar et al., 2020).

Limitation of the study

This study was done quantitatively if it is integrated with qualitative data it will explain more about the association with the outcome.

Almost all literature that was used for the discussion of this study was conducted in an urban setting, which is more exposed to the media and economically, educational and other factors differ from rural communities because there were limited studies done in rural communities on COVID-19.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATION

7.1. CONCLUSION

The knowledge and preventive practice levels of the community toward COVID-19 were 55% and 66% respectively. Nearly half of the participant's knowledge of the mode of transmission of the virus was below 50%. Fever and dry-cough were answered by 93% and 52% of the participants as symptoms of COVID-19 respectively. Around 90% of the participants knew hand washing as preventive measures for COVID-19 prevention. Good prevention practice and family size greater than five were significantly associated with a good knowledge level.

Similarly, there was less practice on the preventive measures of COVID-19. About 58%, 98%, and 78% of the participants were; not wash their hands, not wearing a face mask, and practicing handshake respectively. Good preventive practices level was strongly associated with good knowledge level, education status, marital status, occupation status, and family size.

7.2. RECOMMENDATION

The participant's knowledge level on COVID-19 was 45 %, which means that there is a gap in the knowledge level on symptoms, mode of transmission, and prevention measures of COVID-19. Therefore, the government and non-governmental bodies should better promote and work on health education and promotion toward COVID-19 prevention in the rural part of the Semen bench district.

Similarly, the health extension workers should better create awareness for the community on the symptoms, mode of transmission, and prevention measures of COVID-19 prevention.

The communities of Semen Bench district should better apply the preventive measures especially wear a facemask, avoiding going to the crowded place that was recommended by the World Health Organization and Ministry of Health on COVID-19 prevention.

The Bench Sheko Zonal and Semen Bench district Health department should better collaborate with other Volunteers bodies to promote on those preventive measures to the communities.

The health extension workers and kebeles administrative bodies should better work together on the promotion and practice of all the preventive measures toward the COVID-19 pandemic in the district.

For the researcher, a qualitative study needs to be conducted to explore the reason why large family size and marriage were associated with knowledge and practice toward COVID-19 prevention.

REFERENCE

Acharya, R., Gundi, M., Ngo, T. D., Pandey, N., Patel, S. K., Pinchoff, J., … Zavier, A. J. F. (2020). *COVID-19-related knowledge, attitudes, and practices among adolescents and young people in Bihar and Uttar Pradesh, India: Study description*. 1–6.

Ahmad, B., Sabahat, S., Ali, A., Nusrat, Nazim, N., & Misba, S. (2020). *Awareness, Attitude, and Practice of Rural People in Kashmir towards COVID-19 : A Sample Survey*. *5*(4), 66–73.

Al-hanawi, M. K. (2020). *Knowledge, Attitude, and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia : A Cross-Sectional Study*. *8*(May), 1–10. https://doi.org/10.3389/fpubh.2020.00217

Alotaibi, R., Alahdal, H., & Basingab, F. (2020). An analytical study on the awareness, attitude, and practice during the COVID-19 pandemic in Riyadh, Saudi Arabia. *Journal of Infection and Public Health*, *2*. https://doi.org/10.1016/j.jiph.2020.06.015

Asmare, Y., Yirag, T., Gebresellassie, B., Tadesse, N., & Shibabaw, W. (2020). *Assessment of undergraduate student knowledge, practices, and attitude towards COVID-19 in Debre Berhan*. 1–14.

Austrian, K., Pinchoff, J., Benjamin, J., & White, C. (2020). *COVID-19 related knowledge, attitudes, practices, and needs of households in informal settlements in Nairobi, Kenya*. (April). https://doi.org/10.2471/BLT.20.260281

Baye, K. (2020). *COVID-19 prevention measures in Ethiopia Current realities and prospects*. (May).

Bekele, D., Tolossa, T., Tsegaye, R., & Teshome, W. (2020). *The knowledge and practice towards COVID-19 pandemic prevention among residents of Ethiopia : An Online Cross-Sectional Study*

Bikbov, B., & Bikbov, A. (2020). *Communication on COVID-19 to the community – measures to prevent a second wave of the epidemic*. 1–18.

CDC. (2020). *What you should know about COVID-19 to protect yourself and others;cdc.gov/coronavirus*. 314937.

Charan, J., & Biswas, T. (2013). How to calculate sample size for different study designs in medical research? *Indian Journal of Psychological Medicine*, *35*(2), 121–126. https://doi.org/10.4103/0253-7176.116232

Dagne, H. (2019). *Prevention Practice and Associated Factors of Coronavirus disease 2019 (COVID-19) Outbreak among Educated Ethiopians : An online Based Cross-sectional Survey*. *2019*, 1–22.

East, M., COVID-19, T., Rcce, E., Rcce, E., Rcce, E., & Rcce, E. (2020). *Risk communication and*

community engagement readiness and response to coronavirus disease (COVID-19). (March), 1–5.

ECDC. (2020a). *Considerations relating to social distancing measures in response to COVID-19 – second update Key points Decision-making for social distancing measures*. (March), 1–12.

ECDC. (2020b). *Coronavirus disease 2019 (COVID-19) pandemic : increased transmission in the EU / EEA and the UK – seventh update What is new in this update ? 2019*(March).

EHD. *Covid-19: situation report*. , (2020).

EPHI. (2020). *National Public Health Emergency Operation Center (PHEOC), Ethiopia Covid-19 Pandemic Preparedness And Response In Ethiopia*.

Haque, T., Moazzem, K., Rahman, M., Afreen, S., Haider, S., Ahmed, A., & Mahmudur, M. (2020). *Knowledge, attitude, and practices (KAP) towards COVID-19 and assessment of risks of infection by SARS-CoV-2 among the Bangladeshi population : An online cross-sectional survey*. 1–21. https://doi.org/10.21203/rs.3.rs-24562/v1

Islam, S., Zannatul, M., Sikder, T., Syed, A., & Vadivia, Z. (2020). *Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladeshi people : An online-based cross-sectional study Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladeshi people : An online-based cross-sectional study*. 0–3.

J.A, Z.-V., B.N, C.-V., & R, A.-G. (2020). *Knowledge, perception, and attitudes regarding COVID-19 Pandemic in Peruvian Population*.

Kebede, B. (2020). *The COVID-19 Pandemic and the Ethiopian Public Administration: Responses and Challenges Bacha Kebede Debela 1*. (January 2020), 1–10.

Kebede, Y., Yitayih, Y., Birhanu, Z., Mekonen, S., Ambelu, A., & Kebede, Y. (2020). *Knowledge, perceptions, and preventive practices towards COVID-19 among Jimma University Medical Center visitors, Southwest Ethiopia*. 1–22. https://doi.org/10.21203/rs.3.rs-25865/v1

Leehang, L., Hung, N., Joy, D., Ferma, J., Choi, M., Dodd, W., & Wei, X. (2020). *Knowledge, attitudes, and practices of COVID-19 among income-poor households in the Philippines : A cross-sectional study*. *10*(1). https://doi.org/10.7189/jogh.10.011007

Li, Y., Li, W.-T., Liu, X.-G., Zhang, Q.-Q., Li, H.-M., Luo, W., & Zhong, L.-B. (2020). *Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak : a quick online cross-sectional survey*. *16*. https://doi.org/10.7150/ijbs.45221

Mohamad, E., Anis, A., Rezal, M., Jen, T., & Hadi, S. (2020). *Public knowledge, attitudes, and practices towards COVID-19 : A cross-sectional study in*. 1–15. https://doi.org/10.1371/journal.pone.0233668

Mohamed, A., Elhassan, E., Mohamed, A., Aldow, A., Alshaikh, H., Alhadi, M., … Mohamed, E. (2020). *Knowledge, attitude, and practice of the Sudanese people towards COVID-19 : An online survey*.

Mola, S., Aweke, Z., Jemal, B., Hussein, R., Hailu, S., Neme, D., … Zemedkun, A. (2020). *The magnitude and associated factors for attitude and practice of Southern Ethiopian residents toward COVID-19 and its preventions : A community-based cross-sectional study*. 1–14.

Murdach, D., & Weiss, P. (2020). *COVID-19 : towards controlling of a pandemic*. *6736*(20), 1015–1018. https://doi.org/10.1016/S0140-6736(20)30673-5

Nasr, K., Altayb, M., Malik, M., Saad, Y., Tayseer, M., & Abdelghafor, B. (2020). *Knowledge, Attitudes, and Practices Surrounding COVID-19 among Sudan Citizens during the Pandemic : An Online Cross-sectional Study*. *15*, 32–45. https://doi.org/10.18502/sjms.v15i5.7176

Nassir, N. (2020). *Knowledge, Attitude and Practice towards COVID-19 among Arba Minch Town GSJ : Volume 8, Issue 6, June 2020, Online : ISSN 2320-9186*

Nicholas, T., Mandaah, F. V., Esemu, S. N., Bokagne, A., Talla, K., Fopa, L., & Dickson, N. (2020). *COVID-19 knowledge, attitudes, and practices in a conflict-affected area of the South West Region of Cameroon*. *35*(Supp 2), 1–8. https://doi.org/10.11604/pamj.2020.35.2.22963

Rios-gonzález, C. M. (2020). *Knowledge, attitudes, and practices towards COVID-19 in Paraguayans during outbreaks: a quick online survey.* 1–20.

Rugarabamu, S., Ibrahim, M., & Byanaku, A. (2020). *Knowledge, attitudes, and practices (KAP) towards COVID-19 : A quick online cross-sectional survey among Tanzanian residents. 216*, 1–18.

Samir, A., Mohammed, Z., Emad, M., Ziady, H., Alorabi, M., Ayyad, M., & Sultan, E. (2020). Knowledge, Perceptions, and Attitude of Egyptians Towards the Novel Coronavirus Disease (COVID - 19). *Journal of Community Health*. https://doi.org/10.1007/s10900-020-00827-7

Serwaa, D., Lamptey, E., Baffour, A., Kumi, E., & Kyeremeh, J. (2020). *Knowledge, risk perception, and preparedness towards coronavirus disease-2019 (COVID-19) outbreak among Ghanaians : a quick online cross-sectional survey*. *2019*(Supp 2), 1–7. https://doi.org/10.11604/pamj.2020.35.2.22630

Shahriarirad, R., Erfani, A., Ranjbar, K., Mirahmadizadeh, A., & Moghadami, M. (2020). *Title : Knowledge, Attitude, and Practice toward the Novel Coronavirus (COVID-19) Outbreak : A Population-Based Survey in Iran*. (March).

Ssebuufu, R. nson, Katembo, F., Mambo, S., Wasingya, L., Nganza, S. K., Ibrahim, B., & Kyamanywa, P. (2020). *Awareness, knowledge, attitude, and practice towards measures for prevention of the spread of COVID-19 in the Ugandans : A nationwide online cross-sectional Survey*. 1–28.

Tomar, B. S., Singh, P., Suman, S., Raj, P., Nathiya, D., Tripathi, S., & Chauhan, D. S. (2020). *Indian community's Knowledge, Attitude & Practice towards*.

Watkins, J. (2020). *Preventing a COVID-19 pandemic*. (February). https://doi.org/10.1136/bmj.m810

WHO. (2020a). *Coronavirus disease*. (August).

WHO. (2020b). *Critical preparedness, readiness, and response actions for COVID-19*. (March), 1–3.

WHO. (2020c). Novel Coronavirus (2019-nCoV) Situation Report - 1. *WHO Bulletin*, (JANUARY), 1–7.

Woday, A., Melese, N., Eshetie, S., Chanie, M., & Ali, A. (2020). *Knowledge, Attitude, and Practice and Associated Factors towards COVID-19 among College Students in Amhara Region, Ethiopia ; A Cross-Sectional Study*.

ANNEXES

Annex I. Subject information sheet (English version)

First, I want to thank you for giving me the time to undergo this conversation. Having said this I gave them enough information about the study that I was going to do and listened to me with full attention. Finally, I asked them if there is unclear information and proceed to data collection.

Study: Knowledge, practice, and associated factors of COVID-19 among the rural community in Semen Bench district southwestern Ethiopia.

Aim of the study: This study aims to assess knowledge, practice level, and associated factors of COVID-19 among the rural community in the Semen Bench district southwestern Ethiopia.

Use of study

Conducting this research in the rural area is used as baseline information for further investigation and intervention on the COVID-19 pandemic. The government and non-governmental organizations also used this information for intervention in the rural community.

Subject's role

If they are voluntary participants in this study, they are required to give about what you know about the COVID-19 and practice to prevent the virus. Besides, you will give other socio-demographic information that is related to the study.

Subject's right

Study participants had the right to know about the importance of data or information regarding COVID-19.

Subject's benefit

Participating in this study does not give any other unique benefit for study participants.

Harm

Study participants do not get any harm by participating in this study.

Confidentiality

All the data obtained from the participants kept confidentially by using only code numbers and locking the data. No one access to the non-coded data except the principal investigator.

1. Consent form

My name is _____a member of data collectors on Knowledge ,practice level and associated factors of COVID-19 in rural community in Semen Bench district, southwestern Ethiopia .The research is under study by MSc. students at Jimma University, Department of Environmental Health Science and Technology. Currently, I am collecting information on COVID-19. I will visit and ask certain questions if you are voluntarily providing information. No, any financial payments give you for your information.

The questions usually take about 20 to 30 minutes. All of the answers you give will be confidential and will not be shared with anyone, but I hope you will agree to answer the questions since your views are important. If I ask you a question that you do not want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

Do you have any questions? a. Yes, b. No (stop the interview if no)

May I begin the interview now? If yes continue!

Signature of interviewer----------date----------

ANNX.II

Part I

Sn	Description of question	Response	skip
001	Gender of the respondent	a. M ___ b. F___	
002	The current age of respondent in year	_____	
003	The current educational level	_____	
004	Marital status of mother	a. Single b. Married c. Divorce d. Widowed	
005	The current occupation of respondent	a. Farmer b. Merchant c. Student d. Governmental Employee e. Daily labor	
006	Family members in household	M.___ F.____ T.___	
007	Monthly income	_____	

Part II

008. Please list the main clinical symptoms of COVID-19? 1. Fever____

2. Fatigue (weakness)____

3. Dry cough____

4. Myalgia (muscular pain)_____

5. Breathing difficulty_____

009. List the mode of transmission of COVID-19?

1. Breathing, sneeze, cough _____

2. Physical contact__

3. Hand shake___

4. Other specify_____

010. List the prevention methods of COVID-19

1. Wash hand with soap____

2. Avoid crowd ___

3. Keep physical (social) distance _____

4. Other specify_____

011. Can you list what you have done to prevent COVID-19

_____

_____

_____

_____

_____

_____

_____

_____.

መግለጫዎች

አባሪ I. የመረጃ ሉህ

የርዕሰ ጉዳይ መረጃ ወረቀት

በመጀመሪያ ይህንን ውይይት ለመከታተል ጊዜዎን ስለሰጡኝ አመሰግናለሁ ። ይህን ስለማደርገው ጥናት በቂ መረጃ እሰጥዎታለሁ እናም እባክዎን በሙሉ ትኩረት ያዳምጡ ። በመጨረሻም ፣ ማንኛውም ጥያቄ / አሻሚነት ካለ መጠየቅ እና መረጃ ማግኘት ይችላሉ ።

ጥናት:- በቤንች ሸኮ ዞን በሰሜን ቤንች ወረዳ በገጠር በሚኖሩ ማህበረሰብ ላይ በኮሮና ላይ የተመሰረተ እውቀት እና ክሎት እንዲሁም ተዛማጅ ችግሮች ።

የጥናት ዓላማ:-የዚህ ጥናት ዋና ዓላማ በደቡብ ምዕራብ ኢትዮጵያ በሰሜን ቤንች ወረዳ በገጠር በሚኖሩ ማህበረሰቦች ውስጥ የኮሮና ቫይረስ ግንዛቤ እና ክሎት እንዲሁም ተዛማጅ ችግሮችን መለየት።

የጥናት አጠቃቀም

የዚህ ጥናት ዋና ጥቅም በገጠር ውስጥ ለሚኖሩ ማህበረሰቦች የኮሮና እውቀት እና ክሎት እንዲሁም ተዛማጅ ችግሮችን በመለየት ለቀጣይ በወረዳው እና በሌሎች የገጠር አካባቢዎች በክፍተቶቹ ላይ ለሚመለከታቸው ለመንግስት እና መንግስታዊ ላልሆኑ ድርጅቶች ተገቢውን ምላሽ እንዲሰጡ ማድረግ።

የርዕሰ ጉዳዩ ሚና

በዚህ ጥናት ውስጥ ለመሳተፍ ፈቃደኞች ከሆኑ ስለ ኮሮና ቫረስ ግንዛቤ እና ክሎት ያሎትን መረጃ እና ከጥናቱ ጋር የተዛመዱትን ሌሎች የሶሺዮግራፊ የስነ-ሕዝብ መረጃዎችን መስጠት ይጠበቅባቸዋል።

የጉዳይ መብት

የጥናት ተሳታፊዎች የጥናቱ አስፈላጊነት የማወቅ መብት አላቸው ፣ እና ፍላጎት ከሌላቸው አይገደዱም ።

የጉዳዩ ጥቅም

በዚህ ጥናት መሳተፍ ለጥናቱ ተሳታፊዎች ሌላ ልዩ ጥቅም አይሰጥም ።

ጉዳት:-የጥናቱ ተሳታፊዎች በዚህ ጥናት ውስጥ በመሳተፍ ምንም ዓይነት ጉዳት አይደርስባቸውም።

ምስጢራዊነት:-ከተሳታፊዎቹ የተገኙት ሁሉም መረጃዎች የኮድ ቁጥሮችን ብቻ በመጠቀምና መረጃውን በመቆለፍ በጥብቅ በሚስጢር ይያዛሉ ። ከተጠቀሰው አካል በስተቀር ማንም ያልተጠቀሰውን መረጃ የማግኘት መብት የለውም ።

1. የስምምነት ቅጽ

ስሜ _____የህብረተሰብ ተኮር በኮሮና ላይ የተመሰረተ የእውቀት እና ክህሎት እንዲሁም ተዛማጅ ችግሮች ላይ የተመሰረተ በደቡብ ምዕራብ ኢትዮጵያ በሰሜን ቤንች ወረዳ ውስጥ የምርመራ ሰብሳቢዎች አባል ነው። በጂማ ዩኒቨርስቲ ፣ በሁለተኛ ድግሪ የአካባቢ ጤና ሳይንስ እና ቴክኖሎጂ ክፍል ። በአሁኑ ወቅት ከኮሮና ጋር ተያያዥነት ያላቸውን ነገሮች በተመለከተ መረጃዎችን እጠይቃለሁ ።

ጥያቄዎቹ ብዙውን ጊዜ ከ 20 እስከ 30 ደቂቃዎች ይወስዳል ። ሁሉም የሚሰጧቸው መልሶች ሚስጥራዊ እና ከማንም ጋር አይጋሩም ፣ ግን አመለካከታዎ አስፈላጊ ስለሆኑ ለጥያቄዎቹ መልስ እንደሚስማሙ ተስፋ አደርጋለሁ ። መልስ መስጠት የማይፈልጉትን ጥያቄ ከጠየኩኝ ያሳውቁኝ እና ወደ ቀጣዩ ጥያቄ እሄዳለሁ ወይም በቃለ መጠይቁ በማንኛውም ጊዜ ማቆም ይችላሉ ።

ጥያቄ አልዎት? ሀ. አዎ ለ. አይ (ቃሉ ቃለመጠይቅ ያቁሙ)

ቃለ መጠይቁን መጀመር እችላለሁ

ክፍል አንድ

ተ.ቁ የጥያቄውዓይነት ምላሽ

001. የጥያቄው ምላሽ ሰጪ ፆታ ሀ. ወ ለ. ሴ

002. አሁን ያለበት እድሜ በ ዓመት _____

003. የጋብቻ ሁኔታው ሀ. ያላገባ

ለ. ያገባ

ሐ. ፈት

መ. ባልዋ/ሚስቱ የሞቱባቸው

004. የት/ትደረጃ _____

005. የስራ ሁኔታ ሀ. ገበሬ

ለ. ተማሪ

ሐ. ነጋዴ

መ. የመንግስት ሰራተኛ

ሠ. የቀን ሰራተኛ

006. አሁን በቤት ውስጥ የሚኖሩ የቤተሰብ ብዛት ወ._____ሴ._____ ድ._____

007. የገቢ መጠን _____

ክፍል 2

008. የኮረና በሽታ ምልክቶችን እባክዎ ይዘርዝሩልኝ

ሀ. ትኩሳት

ለ. የድካም ስሜት

ሐ. ደረቅ ሳል

መ. ይጡንቻ ህመም ስሜ

ረ. የመተንፈስ ችግር

009 የኮረና በሽታ መተላለፊያ መንገዶችን ይዘርዝሩልኝ

ሀ. በትንፋሽ፣ እንጥሻ፣ ሳል በመሳሰሉት

ለ. በመጨባበጥ

ሐ. በንክኪ እና በመሳሰሉት

መ. ሌላ ካለ ይገለጽ

010 የኮረና በሽታ መከላከያ መንገዶች ይዘርዝሩልኝ

ሀ.እጅን በውሃና ሳሙና መታጠብ

ለ. ሰው በበዛበት ቦታ አለመገኘት

ሐ.ከሰዎችጋር ርቀትን መጠበቅ

መ. ሌላ ካለ ይገለጽ

011. የኮረና በሽታን ለመከላከል እየተገበርክ ያለውን ተግባር ግለጽ

_____

_____

Approval sheet

AS thesis research advisors, we hereby approve that we have read and evaluated this thesis prepared by Sisay Ketema **"knowledge and practice level and associated factors of COVID-19 prevention among rural community in Semen Bench district Southwestern Ethiopia".** We confirm the finalization of his MSc thesis work by our signature.

Advisors:

Prof. Dr. Argaw Ambelu Signature _____ Date_____

Mr. Wondowson Birke (MSc) Signature_____ Date_____

Mr. Beuzayehu Alemayehu (PhD candidate)

Chairperson	Signature	Date
_____	_____	_____

Internal examiner

_____	_____	_____

Department Head

_____	_____	_____

Declaration

I declare that this is my original work and has not been presented in this or other University, in the same or similar forms, and that all materials and resources used this study have been fully acknowledged.

Sisay Ketema Signature_____ Date_____