


Factors associated with knowledge, attitude, and practice of COVID-19 among health care professional's working in South Wollo Zone Hospitals, Northeast Ethiopia

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Abstract

Objectives: This study is aimed to assess factors associated with knowledge, attitude, and practice of COVID-19 among health care professional's working in South Wollo Zone Hospitals, Northeast Ethiopia.

Methods: Institution-based cross-sectional study was conducted among 422 health care professionals from 10 July to 10 August 2020, at the South Wollo Zone. A pre-tested self-administered structured questionnaire was used to collect the data. Both bi- and multi-variable logistic regressions were fitted to identify variables significantly associated with the outcome variables. Adjusted odds ratios with 95% confidence interval and p -value < 0.05 were used to determine significant factors.

Results: About 92.4%, 64%, and 55% of the respondents had good knowledge, favorable attitude, and good practices toward corona virus disease, respectively. Being female (adjusted odds ratio = 0.23, confidence interval: 0.10, 0.56), age ≥ 35 years (adjusted odds ratio = 0.14, confidence interval: 0.22, 0.84), being unmarried (adjusted odds ratio = 0.20, confidence interval: 0.70, 0.59), getting information from radio and television (adjusted odds ratio = 6.02, confidence interval: 2.09, 17.36), having average monthly income 93.55–163.67 USD (adjusted odds ratio = 8.00, confidence interval: 0.94, 33.10), and average monthly income > 163.70 USD (adjusted odds ratio = 11.41, confidence interval: 1.41, 15.23) were significantly associated with good knowledge about COVID-19. In addition, being unmarried (adjusted odds ratio = 0.70, confidence interval: 0.49, 0.97), having bachelor of science degree and above (adjusted odds ratio = 1.87, confidence interval: 2.24, 2.83), and getting information from seminars and workshops (adjusted odds ratio = 0.59, confidence interval: 0.35, 0.98) had association with good practice toward COVID-19 prevention and control method.

Conclusion: More than 90% of the health care workers have good knowledge; nearly half of the respondents had unfavorable attitudes and poor practice toward COVID-19. The findings imply that the government and other stakeholders should implement further strategies for enhancing to change health care professional's attitude and encourage to practice prevention and control methods.

Keywords

COVID-19, knowledge, attitude, practice, health care professionals, South Wollo

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Introduction

Coronavirus disease 2019 (COVID-19) is a worldwide pandemic disease that is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).¹ It appeared first in Wuhan City of China and emerges as a global outbreak.² COVID-19 is a highly infectious disease manifested by fever, dry cough, dyspnea, fatigue, myalgia, anorexia, and bilateral infiltrates on chest imaging.^{3–6} It is spread by human-to-human transmission through the droplet, for-oral, and direct contact. It has an incubation period of 2–14 days.⁷

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Globally, around 145,431,383 confirmed cases and 3,087,807 deaths of COVID-19 have been reported as of April 23, 2021.⁸ The United States of America ranks first in numbers of confirmed cases (32,669,121) and the number of COVID-19 deaths (584,226) in the globe.⁹ In Ethiopia, there are 247,989 confirmed cases and 3496 deaths as reported on April 23, 2021.¹⁰ The case-fatality rate ranged from 9.9% in Italy to 0.7% in China as of September 2, 2020.¹¹ Severe illnesses have occurred in older adults and people who have underlying medical comorbidities.¹² COVID-19 affects the societal and individual economic condition.¹²

On 26 January 2021, there were 38 vaccines testing safety and dosage, 24 vaccines in expanded safety trials, 20 vaccines in large-scale efficacy tests, eight vaccines in early or limited use, two vaccines approved for full use, three vaccines abandoned after trials.¹² Vaccines like Pfizer–BioNTech are approved in Saudi Arabia, Bahrain, and Switzerland, and used for emergency in the United States, European Union, and other countries.¹³ However, no vaccines are currently in use in Ethiopia. Thus, preventive measures to control COVID-19 infection are the most critical intervention. Contact tracing, promotion of public health measures like hand washing, mask-wearing, social distancing, and preparation of health systems are major actions to control COVID-19.¹³

The vulnerability of health care workers (HCWs) to the infection is due to inadequate and poor understanding of personal protective equipment (PPE) usage, long-time exposure to large numbers of infected patients, and inadequate training. The issue is especially critical for low-income countries like Ethiopia.

Globally, one in seven cases of COVID-19 reported to the World Health Organization (WHO) is a health worker and, in some countries, that figure rises to one in three, the UN Agency said.

Although health care professionals (HCPs) are representing less than 3% of the general population of most countries and less than 3% in low- and middle-income countries, around 14% of COVID-19-infected cases reported to WHO¹³ are HCWs. This figure can be as high as 35% in some other countries. Thousands of HCPs infected with COVID-19 lost their life worldwide.^{14,15} Moreover, by 19 September 2020, over 1300 health workers tested positive in Ethiopia.¹⁴

WHO called for frontline medical workers to be provided with protective equipment to prevent from being infected with the novel coronavirus, and potentially spreading it to their patients and families. Health professionals, who work to care for people with confirmed or suspected COVID-19 cases, are vulnerable to both infection and mental health problems. By the end of January, WHO and the Centers for Disease Control and Prevention (CDC) had published materials for the prevention and control of COVID-19 infection.¹⁶ The WHO also initiated several online training sessions and materials on COVID-19 in various languages to strengthen preventive strategies.⁷ In

several instances, misunderstandings among HCWs have delayed controlling of COVID-19 infection¹⁷ that led to the rapid spread of infection.^{18,19} The implementation of infection prevention and control (IPC) has paramount importance during the periods of an outbreak.^{20,21} Different works of literature in Ethiopia and abroad have been conducted to investigate the level of knowledge, attitude, and practice and factors associated with it in different participants.^{22–29} However, there is limited evidence on HCWs' knowledge, attitude, and practice (KAP), and its determinants. Thus, this study aimed to assess factors associated with KAP of COVID-19 of HCWs in the South Wollo Zone, Northeast Ethiopia.

Methods and materials

Study design, period, and study area

An institution-based cross-sectional study was conducted from July 10 to August 10, 2020. The study was conducted at the South Wollo Zone, Amhara National Regional State, Northeast Ethiopia which is located 371 km away from Addis Ababa (the capital city of Ethiopia) and 480 km from Bahir Dar (the capital city of Amhara region). In the South Wollo Zone, there are 12 governmental hospitals.

Source and study population

All HCPs working at hospitals found in the South Wollo Zone, including medical doctors, nurses, pharmacists, midwives, physiotherapists, anesthetists, laboratory professionals, and other clinical staff were the source population. Whereas, all HCPs working at selected hospitals in the South Wollo Zone were the study population.

Inclusion and exclusion criteria

The study population was included the clinical members of staff, namely, medical doctors, nurses, pharmacists, drug-gists, midwives, physiotherapists, and laboratory professionals. The subjects who were unwilling to participate and who were absent during the data collection period were excluded.

Sample size determination and sampling procedure

The sample size was determined using the single population proportion formula. By taking 95% confidence level (CL), 0.05 margin of error (w). We take proportion (p) as 50%, since there was not a study conducted in Ethiopia to get a maximum sample size.

$$n = \left(\frac{Z \alpha}{2} \right)^2 \times P \frac{(1-P)}{W^2}$$

where n is the required sample size.

Thus,

$$n = \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2} = 384$$

By considering a 10% non-respondent rate, the final sample size was $384 + 38 = 422$.

In the South Wollo Zone, there are 12 governmental public hospitals. Of this, we have randomly selected four hospitals (Haik, Werelu, Akasta, and Dilanta). Since the total number of health care providers in the selected hospitals is nearly equal to the sample size calculated, we had studied all HCPs found in the hospital (Haik primary hospital (65), Werelu primary hospital (67), Akasta general hospital (213), and Dilanta primary hospital (63)).

Variables of the study

Dependent variable. KAP toward COVID-19.

Independent variables. Socio-demographic and economic variables. These variables include: age, sex, marital status, income, religion, ethnicity, educational level, profession, work experience, family size, and source of information regarding COVID-19.

Operational definition

HCP: Any member of the health care unit that includes medical, pharmacy, physiotherapist, or nursing professions or any other person who in the course of his or her professional activities may prescribe, administer, or dispense a medicinal product to an end-user.

Knowledge toward COVID-19 prevention and control was measured by 14 items, and each question was responded to as Yes, No, and I don't know. The correct answer was marked as 1, while the wrong answer was marked as 0. We used the mean score as a cut-off level and participants who get mean and above referred to good knowledge.

Attitude toward COVID-19 was measured by six items, and the response of each item was recorded on a 5-point Likert-type scale as follows, strongly disagree (1-point), disagree (2-point), neutral (3-point), agree (4-point), and strongly agree (5-point). The total score ranges from 6 to 30, with an overall mean and above score indicates a good attitude toward COVID-19.

Practice toward COVID-19 was measured using six items, and each item was responded to as Yes (1-point), No (0-point), and Sometimes (0-point). The total score ranged from 0 to 6, and the mean and above score were used as good practice toward COVID-19 prevention and control methods.

Data collection tools and procedures

Self-administered structured questionnaire was used to collecting data. The questionnaire was delivered to health

professionals in person by keeping safety precautions to minimize the transmission of COVID-19. The questionnaire was prepared by including socio-demographic and economic, KAP-related questions about COVID-19 through reviewing different kinds of literature.^{23–25,27} To maintain its consistency, the English version questionnaire was translated to Amharic, then back-translated to English by English-language expertise. Each filled questionnaire was checked for completeness of the information by the principal investigator.

Data quality control

Pre-testing of the questionnaire was conducted on 5% of the sample at the Woldiya Hospital. Based on the pre-test, necessary modifications were made to the questionnaires. In addition, data collectors and supervisors were trained for 2 days by the principal investigator before the actual data collection time. Furthermore, the consistency and completeness code of the questionnaire was checked before any attempt to the entry of the data. The reliability of the tool was checked, and the value of Cronbach's alpha was 0.82. EpiData version 3.1 software was used to control and manage errors resulting from the data entry process.

Data processing and analysis

Data were cleaned and entered into EpiData version 3.1 software, and then, exported to STATA version 16 software for analysis. Descriptive analysis, such as frequencies, percentages, and means was reported to describe the characteristics of the study participants. Logistic regression was fitted to identify factors associated with KAP toward COVID. All explanatory variables with a p -value of ≤ 0.2 from the bi-variable logistic regression model were fitted into the multi-variable logistic regression model to control the possible effect of confounders. Adjusted odds ratio (AOR) with 95% CI and p -value < 0.05 was used to determine variables significantly associated with the outcome variables. Multicollinearity was checked using variance inflation factor and standard error of > 2 . Model fitness was checked using Hosmer and Lemeshow's goodness of a fit test.

Results

Socio-demographic and economic characteristics

A total of 408 HCPs participated in this study with a response rate of 96.6%. Nearly two-thirds of 264 (64.7%), participants' age was between 25 and 34 years old with a mean age of 27.6 ± 5.8 . The majority, 292 (71.8%), of the respondents were males and, nearly half of the participants, 192 (47.1%), were married. Most of study participants (77.45%) were orthodox Christian in religion. Since the study was conducted in Amhara region, most of study participants (92.4%) were Amhara in ethnicity. The education

Table 1. Socio-demographic characteristics of HCPs (N=408).

Variables	Categories	Frequency	%
Age of the respondents	≤24	105	25.74
	25–34	264	64.71
	≥35	39	9.56
Sex	Male	292	71.57
	Female	116	28.43
Marital status	Married	192	47.06
	Single	21	51.96
	Divorced/windowed	5	0.98
Religion	Orthodox	316	77.45
	Muslim	77	18.87
	Protestant/catholic	15	3.68
Ethnicity	Amhara	377	92.4
	Tigre	10	2.45
	Oromo	19	4.66
	Others	2	0.49
Education status	Diploma	152	37.25
	BSc degree	238	58.33
	Master's and above	18	4.41
Profession	Nurse	154	37.75
	Midwifery nurse	44	10.78
	Medical doctors	38	9.31
	Pharmacist	58	13.24
	Laboratory profession	58	14.22
Work experience	≤5 years	289	70.83
	6–10 years	63	15.44
	≥11 years	56	13.73
Income	≤94.90 USD	76	18.63
	94.90–166.07 USD	209	51.23
	166.10–237.25 USD	109	26.72
	>237.25 USD	14	3.43
Family size	≤2	267	65.44
	3–4	98	24.02
	>4	43	10.54

USD: the United States dollar.

status of participants showed that more than half, 238 (58.33%), had a BSc degree and only 18 (4.4%) had master's and above. Concerning their profession, most participants 154 (37.8%) were nurses, and 38 (9.3%) were physicians. Concerning work experience, the majority of the respondents 289 (70.8%) had 5 years and more work experience (Table 1).

Source of information regarding COVID-19

The majority of the participants (79%), reported that information about COVID-19 was received from social media, followed by radio and television (52%). Moreover, the other participants reported that they received information from other sources, such as seminars and workshops, and colleagues and senior staff (20.3% and 17.3%), respectively.

Knowledge of HCPs toward COVID-19

Knowledge was assessed by 14 questions. The knowledge score for participants was calculated and summed up to give the overall knowledge. The mean knowledge score for the respondents was 12.10 with ($SD=1.55$). This study showed that 92.4% of respondents had good knowledge of COVID-19. About 93.4% and 83.09% of participants said that COVID-19 had no specific curative treatment and could be fatal, respectively. And also, 78.8% of the respondents aware that peoples with comorbid illness and the elder are at high risk of infection and mortality from COVID-19.

Factors associated with knowledge toward COVID-19 of HCPs

Those variables whose p -value was less than 0.2 in bi-variable analysis; sex, age, marital status, educational level, income, work experience, and radio and television were entered into multi-variable logistic regression for further analysis. The multi-variable analysis revealed that sex, having radio and television, age, and marital status were significantly associated with knowledge toward COVID-19 of HCPs (Table 2).

Attitude of HCPs toward COVID-19

The mean attitude score for the participants was 19.9 ± 5.9 . Overall, 64% of the participants had a good/favorable attitude toward COVID-19 prevention and control. Of these, 71.6%, 62.1%, and 34.5% were males, had a BSc degree and above, and nurses, respectively. About 24.5%, 22.1% of respondents believed that HCWs must acknowledge themselves with all the new information about COVID-19 and the prevalence of COVID-19 can be reduced by the active participation of HCWs in the infection control program using universal precautions given by WHO and CDC, respectively. The multi-variable logistic regression analysis showed that there was no significantly associated factor with the attitude of HCPs toward COVID-19.

The practice of HCP toward COVID-19

The mean score of practice for the HCP was 3.5 with ($SD=1.5$). The result of this study showed that 55% of participants had good practice toward COVID-19 prevention and prevention mechanism. Of those, 71.6% and 69.3% of the respondents had a BSc degree and above, and less than 6 years of work experience, respectively. Based on our result, 51.5%, 54.7%, and 61.3% of respondents were avoiding touching their eyes, nose, and mouth as far as they can, using a facemask regularly, practicing hand washing, and using sanitizer before and after touching the patient, respectively.

Table 2. Factors associated with knowledge toward COVID-19 of HCPs at the South Wollo Zone, Northeast Ethiopia.

Variables	Categories	Knowledge		COR	AOR
		Good	Poor		
Sex	Female	99	17	0.29 (0.14–0.62)	0.23 (0.01–0.56)**
	Male	278	14		
Age	≤35	349	26		
	>35	28	5	0.42 (0.15–1.17)	0.14 (0.22–0.84)*
Marital status	Married	181	11		
	Not currently married	196	20	0.60 (0.28–1.28)	0.20 (0.07–0.59)**
Higher educational level	Diploma	133	19		
	BSc degree and above	244	12	2.90 (1.37–6.17)	0.62 (0.16–2.45)
Income (USD)	<93.53	62	14		
	93.55–163.67	198	11	4.06 (1.75–9.41)	8.00 (1.94–33.10)**
	>163.70	117	6	4.40 (1.61–12.02)	11.41 (1.41–15.23)*
Work experience	<6 years	270	19		
	6–10 years	59	4	1.03 (0.34–3.16)	0.24 (0.52–1.09)
	>10 years	48	8	0.42 (0.17–1.02)	0.64 (0.15–2.74)
Radio and television	Yes	187	25		
	No	190	6	4.23 (1.70–10.55)	6.02 (2.09–17.36)**

COR: crude odds ratio; AOR: adjusted odds ratio, USD: the United States dollar.

* $p < 0.05$, ** $p \leq 0.01$.

Table 3. Bi- and multi-variable logistic regression analyses of practice toward COVID-19 prevention and control of HCP at the South Wollo Zone, Northeast Ethiopia.

Variables	Categories	Practice		COR	AOR
		Good	Poor		
Marital status	Currently not married	111	105	0.72 (0.49–1.07)	0.70 (0.49–0.97)*
	Married	114	78		
Higher education level	Diploma	69	83		
	BSc and above	156	100	1.88 (1.25–2.82)	1.87 (2.24–2.83)**
Seminars and workshops	No	170	155	0.56 (0.34–0.93)	0.59 (0.35–0.98)*
	Yes	55	28		
Radio and television	No	99	97	0.70 (0.47–1.03)	0.72 (0.48–1.07)
	Yes	126	86		

COR: crude odds ratio; AOR: adjusted odds ratio.

* $p < 0.05$, ** $p \leq 0.01$.

Factors associated with the practice of HCPs toward prevention and control.

The multi-variable logistic regression analysis result showed that marital status, higher education level, seminars, and workshops had a statistically significant association with practice toward COVID-19 prevention and control methods (Table 3).

Discussion

The COVID-19 outbreak is an emerging pandemic and HCPs are highly vulnerable to risks associated with COVID-19, since they are frontline workers. Thus, this study assesses

factors associated with KAP of COVID-19 among HCP's working in South Wollo Zone Hospitals, Northeast Ethiopia. Accordingly, this study found that 92% (95% CI=87.3%–96.4%) of the participants had good knowledge toward COVID-19 prevention and control. This finding is in line with studies conducted in Ethiopia (88.2%) a multi-center study conducted in referral hospitals,²⁶ Henan, China (89%),²³ Tanzania (96%),²⁷ worldwide on dentistry's study (92.5%),²⁸ Pakistan (93.2%),²⁹ and Nepal (82.15%).³⁰ The possible explanation for this high figure of knowledge about COVID-19 among HCPs might be due to prolonged exposure to information, since it is a global topic of discussion in the media and public. Furthermore, it could be the effort of

government, non-governmental organizations, media like governmental, social, and private media in providing information starting from the time of the outbreak. This is supported by the association of the source of information with knowledge regarding COVID-19, and the participation of HCWs in training, seminars, and workshops. On the other hand, this result is higher than studies conducted in Northern Ethiopia (74%),³¹ Mekere Hospital, Uganda (69%),³⁷ Pakistan (75.5%),³⁸ and Saudi (75%).³⁹ The possible reason for this discrepancy might be due to differences in information-seeking behavior, source of information, Socio – the demographic and economic status of the study participant, the tool used for measuring knowledge, and study period.

The result of our study showed that being female, an increase in age, and being unmarried decrease having good knowledge about COVID-19. Female HCPs were less likely to have good knowledge than male HCPs. This finding is supported by a study conducted in Tanzania.²⁷ This may be due to the fact that females usually had a double burden and workload in families, had no time for further reading and searching about outbreaks, and also, HCWs, whose ages not greater than 35 years, were less likely to have good knowledge toward COVID-19. This result is consistent with studies conducted in Uganda³² and Addis Zemen.³⁵ This decrease in knowledge about COVID-19 might be due to as age increases the hearing ability decreases, visual performance for reading will also decrease, and searching in electronic media may also decrease. Aging might be a barrier for getting updated information about COVID. Likewise, the odds of having good knowledge among unmarried participants were lower than married. This finding is in line with a study conducted in Iran.³⁴ The possible justification might be the absence of enforcement to read and search from their partners, and lack of information sharing about COVID-19 that may lead to decrease knowledge toward COVID-19.

Furthermore, the source information and income of participants had a significant association with the HCP's knowledge of COVID-19. The odds of having good knowledge of COVID-19 increased in participants with higher monthly income. This is similar to studies conducted in China²⁵ and Addis Zemen.³³ This might be due to the fact that economic status is the main determinants of behavioral actions for maintaining health and accessing the source of information tools like television, radio, laptop, and mobiles. In addition, those who were using radio and television as a source of information had about six times more chance of having good knowledge about COVID-19 than those who were not using radio and television as a source of information. This is consistent with a study conducted in a multi-center, Ethiopia.²⁶ This difference is because radio and televisions had programs related to COVID-19 transmission, symptoms, treatment, control, and prevention methods and give new and updated information for the community that leads to acquiring better knowledge.

In the current study, the overall good attitude of HCPs toward COVID-19 prevention and control was 64% (95% CI: 59.2%–68.5%). But, this finding is lower than studies conducted in Ethiopia (94%), a multi-center study conducted in referral hospitals,²⁸ Mekere Hospital, Uganda (79%)³⁰ and Nepal (90.93%).³⁶ This is because discrepancy may be possibly related to different socio-demographic, socio-economic, and health characteristics of the population, sample size variation, the shortage of PPE and inadequate training on COVID-19, lack of support from the local authority, perception of risky for infection, and vulnerability for the outbreak.

About 55% (95% CI: 50.26%–59.92%) of HCPs had good practice toward prevention and control methods of COVID-19. Likewise, 54.7% wore facemask regularly, and 62.2% practiced frequent hand washing with soap. However, these practices toward COVID-19 were lower than the result studies conducted in Mekere Hospital, Uganda (74%),³² Ethiopia (67%), and a multi-center study conducted in referral hospitals,²⁸ in Nepal (83.57%).³⁶ The possible explanation for this low proportion of good practice might be due to the shortage of infrastructure and materials like water, electricity, disinfectants, scarcity of personal protective materials, work overload, inadequate training provided for the HCWs, and lack of strict prevention and control method by the government.

The source of information, marital status, and higher education level of HCPs had a significant association with good practices toward the COVID-19 prevention and control method. HCPs who are not currently married were less likely to have good practice toward coronal virus disease than their counterparts. This finding is similar to the study conducted.³³ This may relate to usually married peoples had many families and they may have good practice about COVID-19 prevention and control method due to fear of transmission to their children and families. Whereas, HCP who have a BSc degree and above and participated in workshops and training were likely to have good practice toward prevention and control method of COVID-19 than their counterparts. This finding is supported by studies conducted in Nepal^{25,36} and Tanzania.²⁷ The possible reason might be those whose education level is higher HCP may get a better understanding and information about transmission, effect, consequence, prevention, and control of COVID-19 and skill about COVID-19 prevention and control methods through higher education and training. In addition to this, higher educational status professionals may have increase income that leads to the possibility of buying personal protective materials like a face mask, sanitizer, and alcohol, which may result in better practice toward COVID prevention. Thus, this study suggests that further implementation and encouragement from the government are required for the application of good practice toward COVID-19 and its preventions.

When we come to the limitation of the study, being a cross-sectional data, causality could be ascertained, but relationships have been established.

Conclusion

We found that more than 90% of HCPs in the South Wollo Zone had good knowledge about COVID-19 signs and symptoms, treatment, transmission, prevention, and control. Sex, age, marital status, source of information, and income of the HCP were significantly associated factors affecting the level of knowledge about COVID-19. However, nearly, half of the respondents had not good attitude and poor practice toward COVID prevention and control methods. And also, the source of information, marital status, and higher education-level HCP had an association with practice toward the COVID-19 prevention and control method.

Recommendation

Regional and zonal health offices should prepare seminars, professional discussions, workshops, and training regarding COVID for HCPs to fill this attitude and practice gap. The government and another stakeholder should implement further strategies for enhancing to change HCPs' attitude regarding COVID-19 and encourage to practice prevention and control methods toward the outbreak. And also, we recommend follow-up studies with a qualitative aspect that includes many health care institutions including the private sector across the country.

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Author contributions

M.S. was responsible for conceptualization and design of the study and drafted the manuscript. G.B. and Y.B. were responsible to conduct the analysis and review of the manuscript. All authors read and approved the final manuscript.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethical approval and consent to participate

Ethical clearance was obtained from Wollo University, College of Medicine and Health Sciences, the ethical review committee with reference number of CMHS-450/013/12. Permission to conduct the research was obtained from the hospitals' chief executive. Written

informed consent was obtained from each participant. The confidentiality data were maintained by avoiding possible identifiers. Finally, after the whole process of data collection, the questionnaire was kept safe throughout the whole process of the research work.

Informed consent

Written informed consent was obtained from all subjects before the study.

Availability of data and materials

All relevant data are in the manuscript. However, the minimal data underlying all the findings in the manuscript will be available upon request.

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Supplemental material

Supplemental material for this article is available online.

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