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# Assessment of knowledge attitude and practice about Ebola virus disease (EVD) among health care professionals (HCP) at Adama hospital medical college(AHMC) Oromia region Ethiopia

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**Keywords**

Ebola virus disease,
knowledge,
attitude,
practice and health care professionals.

## Abstract

**Background**: Ebola Virus Disease (EVD) outbreaks have occurred sporadically in sub-Saharan Africa since 1976, with the current outbreak occurring in West Africa in 2014 being the largest. Ebola virus is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals found ill or dead in the rainforest (e.g., chimpanzees, fruit bats, monkeys) . There is no FDA-approved, specific treatment is available for Ebola. **Objectives :** To assess the knowledge,attitude and practice of health professionals about EVD at Adama Hospital Medical College, Adama town, east shoa, Oromia Region, Ethiopia. **Methodology :** A cross-sectional study was used to assess the level of KAP of health care professionals toward EVD at Adama Hospital Medical College from March 2 to May 30 , 2015. **Result:** In total, 151 questionnaires were distributed to healthcare professionals of the AHMC. Of these, 133 complete questionnaires, The response rate was 88%. Seventy five(56%) of the respondents was male. Slightly more than half 68(51.1%) of the respondents were 30-50years. Majority of HCP(66.2%) had good knowledge. All respondents agreed with the statements "I have heard about outbreak of EVD, majority of them 99(74.4%) heared it from mass media.Depending up on a predetermined criteria which considered the number of correct answers, among questions prepared to assess attitude of respondents 76.7% f the study participants had positive attitude.Most of HCPs had poor practice 64.7% against EVD in AHMC **Discussion**:This study assessed important information regarding knowledge, attitude and practice of health care workers about EVD in AHMC. Experience may not influence the knowledge as this is a newly emerged disease. Though not a single case is reported from Ethiopia, this effort is to see how much our HCPs are turned to the newer developments in the field of medicine and also to ascertain our level of preparedness.

## 1. Introduction

### 1.1 Back ground

The Ebola virus disease (EVD) is a concerned public health issue in the Sub-Saharan Africa region and globally. Ebola virus disease is a rare but it is a severe often fatal illness in humans (1, 2). There are five identified Ebola virus species, four of which are known to cause disease in humans: Ebola virus (Zaire ebolavirus); Sudan virus (Sudan ebola virus), Taï Forest virus (Taï Forest ebolavirus, formerly Côte d'Ivoire ebolavirus); and Bundibugyo virus (Bundibugyo ebolavirus). The fifth, Reston virus (Reston ebolavirus), has caused disease in non human primates, but not in humans (3).

The virus species causing the current epidemic (Zaire ebolavirus) first was identified in 1976 when there was an outbreak of viral hemorrhagic fever near the Ebola River in Zaire (now the Democratic Republic of the Congo)(4).

EVD outbreaks have occurred sporadically in sub-Saharan Africa since 1976, with the current outbreak occurring in West Africa in 2014 being the largest. EVD Outbreak in West Africa (Guinea, Liberia, Sierra Leone & Nigeria) is notified as extraordinary event & Public Health Emergency of

International Importance (PHEIC) on 8th August, 2014 1 by WHO (1). In previous outbreaks, Ebola virus attack rates have been higher in women than in men, largely owing to cultural practices, including the role of women as care givers (5). According to UNICEF, women are being disproportionately affected by this current Ebola outbreak (6).) This is likely the result of their role as caregivers for sick children and other family members as well as their roles as health care providers and birth attendants.

The Ebola virus is introduced into the human population through close contact with the blood, secretions, organs or other body fluids of infected animals found ill or dead in the rainforest (e.g., chimpanzees, fruit bats, monkeys) (7). Person-to-person Ebola virus transmission is by direct contact (e.g. through broken skin or mucous membranes) with the blood or other bodily fluids (stool, urine, saliva, semen) of an EVD patient and/or indirect contact with environmental surfaces and fomites (e.g. needles) soiled with contaminated body fluids (8). The Ebola virus has been detected in semen during the acute and convalescent phases of the illness; therefore sexual transmission is possible (8, 9, 10). Airborne transmission has not been documented as a mechanism of person-to- person spread (8).

The clinical presentation is nonspecific and easily can be confused with other febrile diseases common to endemic areas such as malaria and typhoid. Ebola virus disease is characterized by abrupt onset of fever, chills, malaise, myalgia, weakness, and fatigue. Gastrointestinal symptoms such as diarrhea, vomiting, and abdominal pain frequently occur. Ebola viruses have tropism for multiple tissues, and multiorgan infection can occur (11, 12). Ebola virus infection elicits cytokine deregulation resulting in a robust host inflammatory response, (13) and patients may progress to critical illness with multiorgan failure and septic shock. Other complications can include cerebral edema, seizures, coma, coagulopathy, and hemorrhagic manifestations (11,12). Although past outbreaks have been associated with almost 90% mortality, (14) the case–fatality proportion in this outbreak is approximately 55–75% (12).

There is no FDA-approved, specific treatment (e.g., antiviral drug) is available for Ebola. Symptoms of Ebola and complications are treated as they appear. The following basic interventions, when used early, can significantly improve the chances of survival: Providing intravenous fluids and balancing electrolytes (body salts) Maintaining oxygen status and blood pressure Treating other infections if they occur Experimental treatments(vaccine) for Ebola are under development, but they have not yet been fully tested for safety or effectiveness. Several investigational drugs as well as plasma from recovered Ebola patients have been used to treat patients with Ebola during the current outbreak, but no controlled clinical trials have been conducted to date. Two companies, Tekmira and BioCryst Pharmaceuticals, have received funding from the DoD to develop potential drugs to treat Ebola. BioCryst, with NIH support, is working to develop an antiviral drug to treat Ebola; the first phase of (human) safety testing began in December 2014 (15).

Ethiopian Airlines, which operates an extensive flight network connecting West African countries to other parts of the world, announced that it has put in place precautions to combat Ebola, which is currently spreading in West Africa. Ethiopian has already implemented the safety of its customers and Staff. Similarly, the Ethiopian Public Health Institute announced that it has set up a national committee to put in place a plan to prevent and contain any possible outbreak of the deadly virus.

Committee members will include officials from the Ministry of Health, health professionals, Ethiopian Airlines and other stakeholders, and will draw up guidelines to prevent and contain the disease, of which will be made official soon. Institute Deputy Director, Dr. Dadi Jimma said that the institute is working closely with different stakeholders to prevent the disease from entering Ethiopia, by preparing technical and other inputs necessary to prevent it. Preventive equipment and medicines have been readied, and preventive activities will be carried out in border areas and at airports. Mesafint Alebachew, Officer with the Addis Ababa City Administration Health Bureau, said the bureau, in addition to training health professionals, has raised public awareness about the disease, its causes, and ways of transmission and prevention. Technical Officer for Preparedness, Surveillance and Response Program with the World Health Organization, Dr. Keba Omar Jaiteh, said the Ethiopian government is doing a good job work to prevent the disease from entering the country. The WHO will support Ethiopia's efforts and has donated equipment and prepared trained health professionals (16).

### 1.2 Statement of the problem.

Ebola was a new phenomenon infectious disease. Health professionals unfamiliar with the disease had difficulties in diagnosing it, particularly as the symptoms resemble other diseases. This delayed appreciation of the existence and magnitude of the epidemic until after it had already spread considerably. Moreover, common practices in the sub-region, including the tradition of friends and relatives providing physical care for the ill, the washing and clothing of dead bodies in preparation for burial and communal hand washing, were prone to spread Ebola.

Health workers caring for Ebola patients, family and friends in close contact with Ebola patients are at the highest risk of getting sick because they may come in contact with blood or body fluids; for example, by changing sheets after an ill person has vomited. Human-to-human transmission is the way that most people are now getting Ebola in West Africa (17).
Being a highly contagious disease, Ebola can spread to other parts of the world because of continuous movement of people in different parts of the world so it becomes necessary for the HCPs who come in contact with patients to be, aware of this highly fatal disease.

Ethiopia is a highly populated country with various ethnic and cultural divides, insight into their perceptions of

issues, Ethiopia with its large population of immigrants and emigrant is staring at the possibility of an outbreak of EVD. In this context this study is a reality check to assess the KAP of our healthcare providers and to Study our preparedness, for such situations.

### 1.3. Significances of the study

Finding about level of knowledge, attitude and practice of HCPs will be an important input for concerned governmental or non governmental institutions to strengthen awareness about EVD**.** Moreover, the study is expected to put awareness of HCPs that helps to update them on the disease. The current study offers reality check to assess the knowledge, attitude & practices (KAP) of our health care providers and to study our preparedness of prevention of the disease and if we are to face an outbreak scenario in our country. The study actually identifies the level of interest of HCPs to involvement in prevention and controlling the EVD. The study may serve as a benchmark for other studies in this area.

## 2. LITRETURE REVIEW

Cross sectional study was done in India shows the knowledge of registrars (71.4%) was strongest, followed by consultants (60%), resident doctors (55.5%), nurses (45%) and lab technicians (40%). Nurses (62.7%) showed the best overall attitude, followed by consultants (55%), residents (51%), registrars (50%), and Lab technicians (40%). Adherence to standard personal protection guidelines was highest among consultants (60%), followed by residents (50%), nurses (48.03%), registrars (42.85%, lab technicians (36%). Main reasons for non-adherence in this study were lack of knowledge (24%), lack of motivation (21.5%) & lack of supplies (19.5%) and lack of time (15%). Needle stick injuries were frequent among residents (88.8%), followed by registrars (55.6%), nurses (39.4%), consultants (38%) and lab technicians (31.03%). Adherence to standard biomedical waste disposal practices was highest among registrars (88%), followed by consultants (83.4%), nurses (72%), residents (68.8%) and lab technicians (60%) (19).

Study done in Lagos state of Nigeria shows Majority of healthcare workers have knowledge of Ebola disease including the symptoms and mode of transmission.17% believe 'Ebola can be cured with antibiotics,15% think 'Ebola can spread through the air,1 in 10 thinks Ebola can spread through mosquito bites,1 in 10 thinks born again Christians/Muslims do not easily contact the condition,8% believe Ebola is 'caused by our sins',6% believe some churches or religious centers can cure it.8 in 10 healthcare workers receive more information on Ebola from the news media than they do from the Nigerian Medical Association (8%) and government correspondence (9%).9 in 10 healthcare workers believe Ebola is a medical problem, while five percent believe the disease is mainly a spiritual problem,9% of the healthcare workers believe Ebola can be cured by local or traditional remedies such as herbs and concoctions Five percent know someone who has contracted the Ebola virus, 1 in every 5 healthcare worker sometimes gets scared of going to work for fear of contracting Ebola,90% of healthcare workers said they do not have isolation centers specially designed for Ebola, patients, and only 16% of these said they have plans to have one at their respective facilities,83% said they *lack resources* for managing Ebola in their facilities,1 in 4 healthcare workers believe the Nigerian traditional medicine can find cure for Ebola.4 in every 10 healthcare workers will be willing to join a volunteer corps of visiting physicians,Only 13% said they receive an email from the government telling them how to manage Ebola patients.More healthcare workers (67%) will accept to treat patients with fever only than those with 'Diarrhea and vomiting' (59%) or 'Patient who suddenly collapsed' (58%).8 in 10 healthcare workers would rather refer a suspected Ebola patient to an isolation centre than attending to them.To improve response to Ebola, one third of the healthcare workers thought the government should provide modern isolation equipment to each local government area (20). So far, there is no study in Ethiopia which examines the knowledge, attitude and practice of HP to EVD according to our literature review.

## 3. OBJECTIVES

This study mainly focuses on assessing the knowledge, attitude and practice of health care professionals about EVD targeting on determining the different factors that affect KAP of HCP towards EVD, find out gaps between HCP on KAP of EVD at Adama Hospital Medical College, Ethiopia.

## 4. METHODOLOGY

### 4.1 Study areas and study period

The study was conducted at Adama Hospital Medical College which is found in Adama Town, Oromia region, East Shoa zone, Ethiopia. AHMC was established in 1942 by Italian Missionaries. Currently the college hospital has a catchment population of about 5 million serving as referral hospital for all nearby hospitals and the adjacent regions. It has capacity of 200 beds for inpatient with five disciplines (Surgery, Internal medicine, pediatrics, Gynecology and ophthalmology) with four pharmacies (OPD, Inpatient, emergency and ART pharmacy) and serves about 850 patients per day. The hospital has about 356 workers of which 242 were health professionals and the remaining are administrative workers and teachers. The study is conducted from March 2, to May 30, 2015.

### 4.2 Study designs

A cross-sectional study was used to assess the level of KAP toward EVD of all health care professionals that met the inclusion criteria in the study area were considered for the study.All health professionals that are volunteer to participate in the study were included in the study. While health professionals who were not in the site during the study period and not interested to participate were excluded from the study.

### 4.3 Sample size determination

The required sample size for the study was calculated by using the simple population proportion formula. Sample size was determined to estimate the level of KAP of HCP with a reasonable degree of accuracy (i.e. margin of error was taken to be 5% (95% confidences interval). Sample size was calculated from the total study population that fulfills inclusion criteria by the following formula:

$$n = \frac{Z^2 P (1-P)}{D^2}$$

Where:
n- Sample size
Z- Confidence level = 95% (1.96)
P- Anticipated proportion = 50% (0.5) to allow maximum sample size
D- Margin of errors = 5% (0.05)

There was no study done on the knowledge, attitude and practice of healthcare professionals towards EVD in Adama Hospital Medical College in the past.
So the sample size will be:

$$n = \frac{(1.96)^2 (0.5)(1-0.5)}{(0.05)^2}$$

n= 384

There were 232 healthcare professionals who fulfill the inclusion criteria.

N =232
Therefore the corrected sample size was calculated as:

Nf= n/ (1+n/N)
Nf= 384/ (1+384/232) = 144
Allowance of 5% =0.05x144= 7
Therefore total sample size = 151

Proportional sampling technique was used. The proportion of the candidates for the study from their respective profession was calculated as follows:

Physicians = 53, then the sample taken was 151/232(53) =35
Pharmacists & druggists =18, then the sample taken was151/232(18) =12
Nurses in all type =119, then 151/232(119) = 77
Midwifery =20, then 151/232(20) =13
Lab Technicians = 19, then 151/232(19) =12
Health officers = 3, then 151/232(3) =2
Total =151

### 4.4 Method of data collection

Structured questionnaire was used to collect information on the level of KAP toward HCPs in Adama Hospital medical College.

### 4.5 Operational definitions

**Ebola virus disease**- previously known as Ebola hemorrhagic fever is a rare and deadly disease caused by infection with one of the Ebola virus species.

**Health Care professionals (HCPs**) - in this regard it means that any healthcare providers.
**Knowledge**- is accordingly the concepts and information that HCPs have regarding EVD

**Attitude**- is the perception and internal feeling that HPs possess towards EVD treatment and prevention which may be positive or negative.

**Practice-** Totake an action toward awareness, prevention and control of EVD.

The responses were rated as poor (<50%), average (50-60%), good (60-80%) and very good (>80%) depending upon a predetermined criteria which considered the number of correct answers. All scores above 50% in each domain were considered as satisfactory.

### 4.6 Data Quality Assurance and analysis

Properly designed structured questioners were used and the collected data reviewed every day and checked for completeness and consistency of response.

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 16. Statistics analysis like frequencies and cross tabulation was made for most selected variables. Multivariable logical regression analysis was carried out to assess the association of participants' demographic characteristics with the KAP and correlation analysis was made to assess the significance between the dependent variables. P-value of less than 0.05 was considered to be statistically significant.

## 5. RESULT

### 5.1.Socio demographic characteristics of study participants

Total of 151 questionnaires were distributed to health care professionals at the AHMC. Of these 133 completed questionnaires, with response rate 88% was returned. Out of 133, seventy five (56%) of the respondents were male. Slightly more than half 68 (51.1%) of the respondents were 30-50 years of age. Regarding the religion of the respondents, Orthodox were 53 (40%), Muslim 29 (22%), Protestant 25(19%), Wakefata 17 (13%), Catholic 4 (3%) and other 3 (2.3%). Regard to profession of the respondents, 33 (25%) were physicians, of which 23 (17%) were general practitioner (GP) and 10 (7.5%) were specialists in different disciplines. 67 (50.4%) nurses were participated in the study, of which 8 (6%) diploma, 48 (36%) B. Sc and 11 (8.3%) M. Sc. Out of 133 respondents, 12 (9%) were pharmacy professionals, of which 2 (1.5%) Druggist and 10 (7.5%) were pharmacists. A total of 10 (7.5%) Midwifery

were participated, among 10; 3 (2.3%) diploma and 7 (5.3%) B. Sc and 9 (6.8%) participants were Lab technicians, of which 4 (3%) diploma and 5 (3.6%) were B. Sc. Of 133 participants, only 2 (1.5%) were Health Officers. Majority of the respondents 95 (71%) had less than six years of experiences. Demographic characteristics of healthcare professionals in AHMC were presented in the Table 1.

**Table 1:** Demographic characteristics of healthcare professionals in AHMC.

| Variables | | Frequency (%) |
|---|---|---|
| Sex | Male | 75 (56.4) |
| | Female | 58 (43.6) |
| Age | <30 | 61 (45.9) |
| | 30-50 | 68 (51.1) |
| | >50 | 4 (3) |
| Religion | Orthodox | 53 (39.8) |
| | Muslim | 29 (21.8) |
| | Wakefata | 17 (12.8) |
| | Protestant | 25 (19.1) |
| | Catholic | 4 (3) |
| | Other | 3 (2.3) |
| Physician | GP | 23 (17.3) |
| | Specialist | 10 (7.5) |
| Pharmacy profession | Druggist | 2 (1.5) |
| | Pharmacist | 10 (7.5) |
| Nurse | Diploma | 8 (6) |
| | B. Sc | 48 (36.1) |
| | Masters | 11 (8.3) |
| Midwives | Diploma | 3 (2.3) |
| | B. Sc | 7 (5.3) |
| HO | B. Sc | - |
| | Masters | 2 (1.5) |
| Lab technician | Diploma | 4 (3) |
| | B. Sc | 5 (3.6) |
| Year of experience | <3 | 45 (33.8) |
| | 3-6 | 50 (37.6) |
| | >6 | 38 (28.6) |

### 5.2. Knowledge of health care professionals toward EVD

A total of 16 questions were presented to the respondents to assess the level of knowledge of HCPs at AHMC. 16 questions were taken into consideration to assess the level of knowledge. 133 (66.2%) HCPs had good knowledge in this study. All 133 (100%) respondents heard about the outbreak of EVD". 107 (80.5%) respondents were heard about EVD from mass media and 99 (74.4%) respondents believed that, hunting and consumption of wild animals increase the risk of exposure. 87 (65.5%) respondents believed that eating fruits that bats or wild animals have partly eaten cause EVD transmission. 117 (88%) and 108 (81.2) respondents were agreed with the touching person who is suspected of EVD cause infection and washing dead bodies cause high risk for EVD infection respectively. 81.2% respondents agreed with the statement, physical hygiene reduce the risk of infection while 67% HCPs agreed that the Ebola virus is transmitted from asymptomatic patient and 81.2% were agreed that well cooked food has advantageous on prevention of the disease. 67.6% of HCPs agreed that Ebola virus can be sexually transmitted from an infected patient and 127 (96%) knew the sign and symptom of EVD. 97(73%) HCPs agreed that early treatment can save the life from EVD.

Table 2 showing the results of assessment of knowledge of HCPs toward EVD, at AHMC. The results were analyzed across all 3 domains for various categories. The responses were rated as poor (<50%), average (50-60%), good (60-80%) and very good (>80%) depending upon a predetermined criteria which considered the number of correct answers. Knowledge among the participants about EVD was presented in the Table 3. All scores above 50% in each domain were considered as satisfactory. The knowledge of physicians were 90.9% which was strongest compared with the Pharmacy professionals (58.3%), Nurses (58.2%), Lab technicians (55.6%), Health Officers (50%) and Midwives (50%).

### 5.3. Factors affecting the knowledge of HCP

The factors affecting knowledge of HCPs to EVD were analyzed using the multivariate logical regression. Type of profession had significant association with knowledge of HCPs (p= 0.036, CI [1.019- 1.716], AOR: 1.322) while others such as sex, age, religion, and experience not showed significant association.

**Table 2:** Results of assessment of knowledge of HCPs towards EVD, at AHMC

| SN | Statements | | Agree/yes Frequency (%) | Disagree/No Frequency (%) | No ideas Frequency (%) |
|---|---|---|---|---|---|
| 1 | Have you ever heard about Outbreak of EVD? | | 133 (100) | | |
| 2 | If yes, How did you hear about it? | From training | 12 (9) | | |
| | | From mass media | 107 (80.5) | | |
| | | From internet | 10 (7.5) | | |
| | | From book | 3 (2.3) | | |
| 3 | I know that hunting, handling and consumption of wild animals increase of risk of infection. | | 99 (74.4) | 12 (9.1) | 22 (16.5) |
| 4 | I know that eating fruits that bats or wild animals have partly eaten increase risk infection. | | 87 (65.5) | 15 (11.3) | 31 (23.3) |
| 5 | I know that eating wild animals specially like: monkeys, chimpanzees and bats increase risk of infection. | | 98 (73.7) | 11 (8.3) | 24 (18) |
| 6 | I know that touching persons who are suspected of EVD is high risk for infection. | | 117 (87.9) | | 16 (12) |
| 7 | Washing dead body's high risk for EVD infection. | | 108 (81.2) | 2 (1.6) | 23 (17.3) |
| 8 | I know that the virus is transmitted from asymptomatic patient. | | 89 (67) | 13 (9.8) | 31 (23.3) |
| 9 | The Ebola virus can be sexually transmitted from infected patient. | | 90 (67.6) | 16 (12) | 27 (20.3) |
| 10 | The virus can be transfer by indirect contact with objects contaminated with virus. | | 98 (73.7) | 11 (8.3) | 24 (18) |
| 11 | I know sign and symptoms EVD. | | 127 (95.5) | 3 (2.3) | 3 (2.3) |
| 12 | If yes, which sign and symptom do you know? | Diarrhea | 125 (94) | | |
| | | Vomiting | 119 (89.5) | | |
| | | Fever | 121 (90) | | |
| | | Sudden collapse | 94 (70.7) | | |
| 13 | I know that improvement of physical hygiene [hand washing, use of latrine, use of sterilized water, not sharing sharp materials ] reduce the risk of infection. | | 108 (81.2) | 5 (3.8) | 20 (15) |
| 14 | By keeping environment clean we can prevent the disease | | 104 (78.2) | 9 (6.8) | 20 (15) |
| | | | | | |
| 15 | Cooking food well has advantageous on prevention of the disease | | 88 (66.2) | 18 (13.6) | 27 (20.3) |
| 16 | I know that early treatment can save the life. | | 97 (73) | 15 (11.3) | 21 (15.8) |

**Table 3:** Knowledge among the participants about EVD

| Category | Poor (<50), N (%) | Average (50-60), N (%) | Good (60-80), N (%) | Very good (>80), N (%) |
|---|---|---|---|---|
| Physicians | 3 (9.1%) | 6 (18.2%) | 15 (45.5%) | 9 (27.3%) |
| Pharmacy | 5 (41.7%) | 2 (16.6%) | 3 (25%) | 2 (16.6%) |
| HO | 1 (50) | | | 1 (50%) |
| Nurses | 28 (41.8%) | 21 (31.3%) | 16 (23.9%) | 2 (3%) |
| Midwifes | 5 (50%) | 2 (20%) | 2 (20%) | 1 (10%) |
| Lab technicians | 4 (44.4%) | 2 (22.2%) | 2 (22.2%) | 1 (11.1%) |

### 5.4.Attitude of respondents towards EVD

9 questions were considered to account for assessing the attitude, 76.7% of the study participants had positive attitude towards EVD (based on the operational definition).120(90.2%) respondents agreed on appreciate positive support toward survivors and persons/family affected by EVD and 90 (70.6%) of the respondents interested to encourage sick persons to seek health care instead of seeking treatment by religious leaders or prayers". More than half (58.6%) HCPs had filled confident in giving health care to EVD. Results of assessment of the attitude of HCPs towards EVDs in AHMC were presented in the Table 4.

Physicians (93.9%) showed strong attitude followed by pharmacy professionals (83.3%), Lab Technicians (77.8%), Nurses (70.1%), Midwives (60%) and HO (50%). Attitude score of HCPs to EVD was depicted in the Table 5.

### 5.5. Factors affecting attitude of HCPs towards PC

Interestingly, Sex (p= 0.030, CI [1.101- 6.769], AOR: 2.730) had a significant association with the level of attitude of HCPs while other independent variables had no significant association (p>0.05) with the level of attitude.

**Table 4:** Results of assessment of the attitude of HCPs towards EVDs in AHMC

| No | Statement | Agree/yes | Disagree/No | No ideas |
|---|---|---|---|---|
| | | Frequency (%) | Frequency (%) | Frequency (%) |
| 1 | Do you think seeking medical treatment/health care early can cure the disease? | 96 (72.2) | 37 (27.9) | |
| 2 | Do you think that delaying of seeking medical treatment is risk of death from EVD? | 103 (77.4) | 30 (22.6) | |
| 3 | I appreciate positive support attitudes toward survivors and persons/family affected by EVD. | 120 (90.2) | 4 (3.1) | 9 (6.8) |
| 4 | I don't belief that traditional medicine can treat EVD. | 68 (51.1) | 32 (24) | 33 (24.8) |
| 5 | I am highly interested to encourage sick persons to seek health care instead of seeking treatment by religious leaders or prayers. | 94 (70.6) | 17 (12.8) | 22 (16.5) |
| 6 | Do you fill confidence on giving health care for patient of EVD? | 78 (58.6) | 55 (41.4) | |
| 7 | If you suspect Ebola sign in your family/friend, would you Report him/her to health care institution? | 121 (91) | 5 (3.8) | 7 (5.3) |
| 8 | Do you have voluntary to engage in giving health care by crossing the country? | 53 (39.8) | 80 (60.2) | |
| 9 | Do you think that health workers are more vulnerable to the disease than any other group? | 110 (82.7) | 23 (17.3) | |

**Table 5:** Attitudes among the participants about EVD

| Category | Poor (<50), N (%) | Average (50-60), N (%) | Good (60-80), N (%) | Very good (>80), N (%) |
|---|---|---|---|---|
| Physicians | 1 (3%) | 3 (9%) | 13 (39.4%) | 16 (48.5%) |
| Pharmacy | 1 (8.3%) | 2 (16.7%) | 4 (33.3%) | 5 (41.7%) |
| HO | | 1 (50%) | | 1 (50%) |
| Nurse | 15 (22.4%) | 11 (16.4%) | 21 (31.3%) | 20 (29.9%) |
| Midwives | 3 (30%) | 3 (30%) | 2 (20%) | 2 (20%) |
| Lab technicians | 2 (22.2%) | 1 (11.1%) | 5 (55.6%) | 1 (11.1%) |

### 5.6.Practices of the Respondents Regarding awareness and prevention of EVD

Most of HCPs had poor practice (64.7%) against EVD in AHMC. Only 20% of HCPs practiced to create awareness for society and also by writing the sign and symptoms of EVD on billboard. 34% of HCPs discussed each other with health professionals about EVD. No HCPs suspects EVD at AHMC. Table 6 showing the results of practice towards EVD at AHMC.

Practice of HCPs for creating awareness toward EVD was highest among HO (50%), followed by physicians (15.1%), Midwives (10%), Pharmacy professionals (8.3%), Nurses (3%), and no practice with lab technicians (0%).Table 7 shows the practice of HCPs in AHMC.

### 5.7.Factors affecting practice

All Independent variables had no significant association with the level of practice at AHMC.

**Table 6:** Results of assessment of practice of HCPs toward EVD at AHMC

| No | Statement | | Yes | No |
|---|---|---|---|---|
| | | | Frequency (%) | Frequency (%) |
| 1 | Have ever practice the awareness towards EVD in the society? | | 27 (20.3) | 106 (79.7) |
| 2 | Have you ever practice the awareness of EVD with other health professionals? | | 45 (33.8) | 88 (66.2) |
| 3 | Have you ever practice the awareness by writing sign and symptoms of EVD on billboard. | | 27 (20.3) | 106 (79.7) |
| 8 | How often do you closely follow news about EVD? | Frequently | 40 (30.1) | |
| | | Occasionally | 78 (58.6) | |
| | | Not at all | 15 (11.3) | |
| 5 | Have you ever suspect a patient that has EVD in AHMC? | | - | 133 (100) |

**Table 7:** Practices among participants in AHMC.

| Category | Poor (<50), N (%) | Average (50-60), N (%) | Good (60-80), N (%) | Very good (>80), N (%) |
|---|---|---|---|---|
| Physician | 21 (63.6%) | 7 (21.2%) | 4 (12.1%) | 1 (3%) |
| Pharmacy | 10 (83.3%) | 1 (8.3%) | 1 (8.3%) | 0 |
| HO | 1 (50%) | 0 | 1 (50%) | 0 |
| Nurses | 60 (89.5%) | 5 (7.5%) | 2 (3%) | 0 |
| Midwifes | 8 (80%) | 1 (10%) | 1 (10%) | 0 |
| Lab technicians | 9 (100%) | 0 | 0 | 0 |

### 5.8.Correlation between knowledge, attitude and practice

There were correlation between knowledge and attitude (r = 0.282; p= 0.01) while there is no correlation between knowledge and practice (r = 0.130; P = 0.137) as well as between attitude and practice (r = 0.110; p = 0.208)

## 6. DISCUSSION

This study assessed important information regarding knowledge, attitude and practice of HCPs for EVD in AHMC. Though not a single case is reported in Ethiopia, this effort is to investigate how much our HCPs are turned to the newer developments in the field of medicine and also to ascertain our level of preparedness for such situation. Overall 66.2%, 76.7%, 35.3% participants showed satisfactory (>50% score) knowledge, attitude and practices respectively.

All of the respondents heard about the outbreak of EVD since West African countries facing an outbreak of EVD. Mass media is by far the primary channel of receiving information by HCPs (80.5%) on EVD as compared with the other source such as internet, literature and training inline the study finding in Nigeria, Lagos state showed (93%) (20), providing information on EVD by mass media is high due to its wide availability and compatibility. 74.4% of HCPs were agreed that hunting, handling and consumption of wild animal's increase of risk of infection and 66% know that eating fruits that bats or wild animals have partly Eaten increase risk infection. Our study showed similarity to study conducted in Nigeria(20). Regarding the statements such as I know that eating wild animals especially like: monkeys, chimpanzees and bats increase the risk of infection; I know that touching persons who are suspected of EVD are high risk for infection and Washing dead body's high risk for EVD infection.

According to the score based evaluation, HCPs showed good knowledge (66.2%) about EVD, however: this finding is lower than the study conducted in India (71.3%) (19), this difference might be due to variations in level of facility such as internet, literature provisions and training.

Multivariate logical regression analysis was made to assess the association of knowledge of HCPs with independent variables, of them, only type of profession significantly ($p<0.05$) affects the level of knowledge of the respondents about EVD. Physician had good knowledge about EVD compared with the other HCPs; this association may be attributable to provisions such as training is not given equally to the all HCPs and their less interest to update information on EVD. In contrast, there was no significant association between knowledge of HCPs with the year of experience of since EVD is newly emerged and neglected communicable disease.

The nature of attitude of the respondents came up with that; majority (76.7%) of them had a positive attitude towards EVD which was lower than that of the study done in IndianTertiary Care Hospital (83%) (19). This difference may be due to the time gap; when the study conducted in India there was severe outbreak of EVD as compared today, prior training and socio economic difference also possible factors. Above 90% of the respondents appreciate positive support toward survivors and persons/family affected by EVD but 39.8% had voluntary to engage in giving health care by crossing the country. This indicates that although HCPs appreciated positive support but they were not volunteering to do service by crossing the country. This may be due to fear of infection and the life status of the respondents. Gender significantly affects the attitude of the respondents, such that 84% male and 69% females had a positive attitude, while religion, type of profession and experience had no significant association with the level of attitude. This may be due to as female are the care providers for their children and family.

Even though no EVD case is reported in Ethiopia, health care professionals must develop, prepared themselves some practice on giving awareness for prevention of the disease both in the society and within the health professionals to manage such situations. In this study, overall practice towards EVD was 35.3% which is low as compared with the study done in India (69.2%) (19). Most of the HCPs (58.6%) responded to the statement “How often do you closely follow news about EVD”? were “occasionally” but only 30% of HCPs responded “Frequently” that may be due to their work load.

Independent variables such as sex, age, religion, type of profession and experience had no significant association with the level of practice in this study that attributable to reason as no EVD case reported yet and is newly emerged disease.

Existence of Pearson correlation between knowledge, and attitude indicated that knowledge had a significant correlation with attitude which means that one that had a good knowledge develop positive internal feeling towards EVD and vice versa. But practice became contra indicated against both knowledge and attitude may be due to lack of sufficient training on EVD as it is newly emerged.

## 7. CONCLUSION

In conclusion, overall 66.2%, 76.7%, 35.3% participants showed satisfactory (>50% score) knowledge, attitude and practices respectively. Despite the fact that the outbreak of EVD was newly emerged, the level of knowledge of healthcare professionals towards the service was appreciable. Gaps between physician and other HCPs knowledge were seen, which is alarming. In this study, there was significant association between levels of knowledge among different professionals. Most of the respondents expressed their positive attitude towards EVD, significant association between levels of attitude with sex was observed in this study.

## 8. LIMITATION OF THE STUDY

The current study didn’t include the sample from different hospitals since single hospital cannot represent all the hospitals in the country. Some of HCPs were small in number which made difficulty during the interpretation of the results.

## 9. RECOMMENDATION

However, MOH is taken action to prevent EVD, improving the pre service training with adequate time and duration for immediate engagement of the new employee to infection prevention practice is necessary. MOH must provide progressive training to further improve the attitude and knowledge of HCPs. AHMC should build in a mechanism to overcome any deficiencies in universal precautions is necessary to bridge the gap. They should prepare themselves for such situations like EVD outbreak and they must put into practice their knowledge and positive attitude to increase awareness about EVD in the country.

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