



**Knowledge, Attitude and Practice of Health Care Providers Toward Ebola Virus**  
**Dr. Musaab Mohamed Nour Abdelrahim Alfaki, Doud Research Group and Charity Clinic, Sudan**  
**A Webber Training Teleclass**



# Knowledge, Attitude and Practice of Health Care Providers Toward Ebola Virus Disease in Hotspots in Khartoum and White Nile States, Sudan, 2014

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Major article

Knowledge, attitude and practice of health care providers toward Ebola virus disease in hotspots in Khartoum and White Nile states, Sudan, 2014



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## Introduction

### How serious is Ebola

- Ebola virus disease (EVD) is a serious acute illness that is often fatal if untreated.
- fatality rate could be up to 90%.
- infections acquired in health-care facilities have been recognized as an important cause of morbidity and mortality, particularly in health workers.
- No specific therapy. <sup>1</sup>

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### Ebola risks in Sub-Saharan Africa



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### Introduction (cont.)

- Ebola hemorrhagic fever outbreaks constitute a major public health issue in sub-Saharan Africa.<sup>2</sup>
- Multiple outbreaks occurred between 1976 and 2014.<sup>3</sup>
- The World Health Organization (WHO) declared an EVD outbreak in West Africa (Guinea, Liberia, Sierra Leone, and Nigeria) as an extraordinary event and a public health emergency of international importance.<sup>4</sup>

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### Introduction (cont.)

- There were 15227 laboratory confirmed cases, with 11310 Dead.
- Also some cases detected outside Africa in Italy, Spain, United kingdom and in US.<sup>5</sup>



### Introduction (cont.)

## EVD in Sudan

- The first cases of EVD were reported in 1976 in 2 simultaneous outbreaks, one in Anzara, Sudan (currently the Republic of South Sudan) and the other in Yambuku village, Democratic Republic of Congo. <sup>1</sup>
- In Sudan, cases were reported in 1976 and 2004. A total of 301 people were infected in the 2 outbreaks. <sup>3</sup>
- During the last outbreak the Sudan Ministry of Health has declared that the country is free of the disease. <sup>6</sup>

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### Introduction (cont.)

- As a result of conflicts in South Sudan, the site of a previous EVD outbreak, more than 635,000 refugees flooded into neighboring countries, including Sudan. <sup>7</sup>
- This situation underscores the importance of instituting and maintaining preventive measures against EVD in Sudan.

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## Health care providers Ebola infection



### Introduction (cont.)

- 815 confirmed and probable Health Care Providers (HCPs) EVD cases were recorded in the last outbreak of EVD.<sup>8</sup>
- In Sierra Leone, the confirmed EVD incidence was 103-fold higher among HCPs than in the general population.<sup>9</sup>
- Nurses, nurse assistants and nurse aides accounted for over 50% of all health worker infections.<sup>8</sup>

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**Why it is common among Health  
care providers ?**

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### Introduction (cont.)

- During epidemics, the virus is transmitted through direct human-to-human contact. HCPs are frequently infected while treating patients with suspected or confirmed EVD.
- This occurs through close contact with patients when infection control precautions are not strictly followed.<sup>1</sup>

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### Introduction (cont.)

- multiple infectious diseases that are endemic in sub-Saharan Africa, like malaria and typhoid fevers, mimic the initial symptoms of EVD.
- In addition, neither doctors nor the public are familiar with the disease.<sup>10</sup>
- Moreover, patients infected with these diseases will often need emergency care, and treating personnel may see no reason to suspect EVD and thus might not take recommended safety precautions.<sup>10</sup>

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## Introduction (cont.)

- Meanwhile, adherence to such precautions has been associated with a dramatic drop in cases among medical staff. <sup>10</sup>
- This finding highlights the importance of assessing HCPs' knowledge, attitude, and practice related to controlling EVD

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## The current study

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## Study method

- This cross sectional study was conducted among HCP (registrars, medical officers, house officers, nurses and other allied health professionals) by using convenient sampling
- This study was done in family health centers and hospitals in hotspots in Khartoum and White Nile states.

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## Study method (cont.)

Khartoum state:

- Three localities were selected from Khartoum outskirts; Jabl Awlia, Sharg Anil, and Umbadah
- Authors chose three family health centers and one district hospital from each of above mentioned localities.

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## Study method (cont.)

- These health facilities serve around 3.5 million residents came from different parts of Sudan because of conflicts and drought.<sup>11</sup>
- In addition, a federal hospital was selected randomly.

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## Study method (cont.)

White Nile state:

- we selected Kosti, the largest city in the state, which represents the crossroads of the north, east, and south of Sudan and is the main portal of connection between Sudan and South Sudan, where the first cases were reported.<sup>12</sup>
- Three family health centers and one district hospital were selected

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## Study method (cont.)

### Study Duration:

- November and December 2014

### Data Collection Technique and statistical analysis:

- Data collected using a pretested, self-administrated questionnaire written in Arabic language. It is composed of 44 questions
- SPSS Version 20.0 was used for statistical analysis. Significance was assessed using Chi square test with a significant ( $p$ -value) at  $<0.05$ .

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## Results

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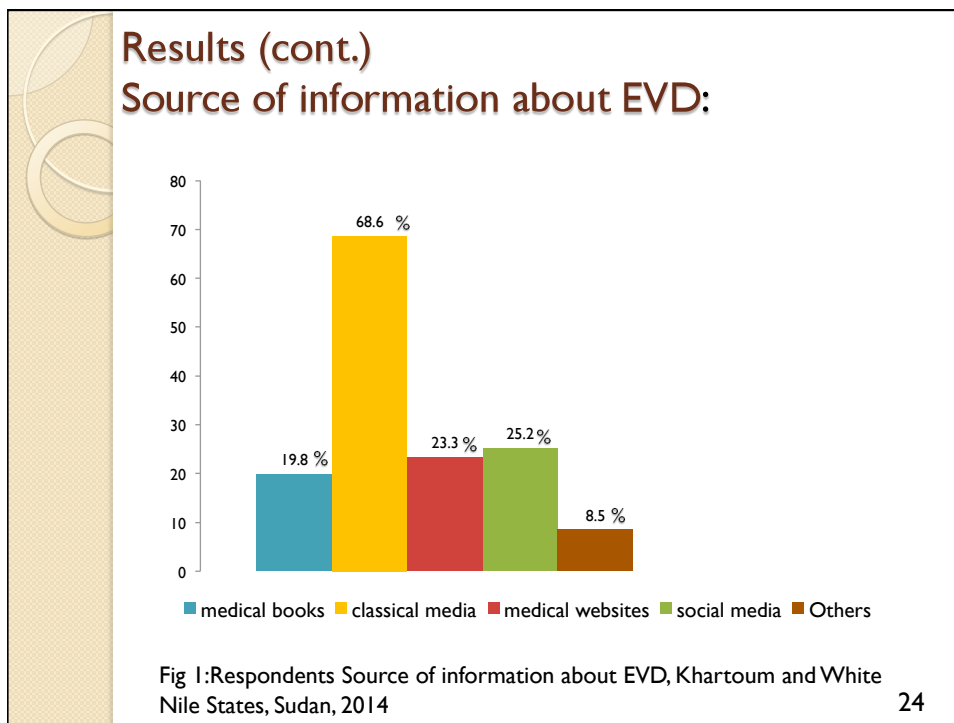
### Results

#### Demographic data:

Table I. Characteristics of the Sample, Khartoum and White Nile States, Sudan, 2014

Main category and subcategories		Frequency	Percent
Gender	Male	73	28.3
	Female	185	71.7
Age	20 – 24	84	32.6
	25 – 29	96	37.2
	30 – 34	33	12.8
	35 – 39	16	6.2
	above 39	29	11.2
Job	Registrar	14	5.4
	medical officer	22	8.5
	house officer	105	40.7
	Nurse	68	26.4
	Other HCP	49	19.0
Level of health facility	health center	35	13.6
	district hospital	127	49.2
	Federal hospital	96	37.2

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**Results (cont.)**  
**Knowledge of HCP:**

Table2: knowledge of respondents about nature of the disease, incubation period, diagnostic tests and outcome, Khartoum and White Nile States, Sudan, 2014

Main category	Frequency	Percent
HCPs know EVD is a viral disease	242	93.8
HCPs know EVD is zoonotic	161	62.4
HCPs know incubation period	114	44.2
HCPs know investigations of choice	141	54.7
HCPs know EVD is fatal	238	92.2
HCPs know correct fatality rate	79	30.6

**Results (cont.)**

**Scores versus Job:**

- Regarding to HCP knowledge about modes of transmission, clinical manifestations and prevention, the responses were rated as poor (<50%), average (50-60%), good (60-80%) and very good (>80%) for each of above mentioned domains depending upon the number of correct answers.

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**Results (cont.)**

Table3: Scores achieved by doctors and Allied health personnel, and significance of difference, Khartoum and White Nile States, Sudan, 2014

Main category and Subcategories		Job		p-value
		Doctors (%)	Allied health personnel (%)	
Performance in transmission questions	Poor	33,1	46,2	0.002
	Average	25,1	22,2	
	Good	13	20,5	
	very good	28,8	11,1	
Performance in clinical manifestations questions	Poor	13	35	0.001
	Average	38,4	41,9	
	Good	23,2	11,1	
	very good	25,4	12	
Performance in prevention questions	Poor	37,5	43,2	0.241
	Average	7,8	12,8	
	Good	25,9	24,7	
	very good	28,9	19,3	

**Results (cont.)**

**Misconceptions:**

Table4: Respondents false beliefs about EVD , Khartoum and White Nile States, Sudan, 2014

False belief	Frequency	Percent
Insect transmission	52	20.2
Air born	137	53.1
Specific treatment available	22	8.5
Licensed vaccine available	43	16.7

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**Results (cont.)**

HCP Attitude and practice toward suspected EVD patients

Table5: Attitude and practice toward suspected EVD patients. Khartoum and White Nile States, Sudan,

Main category		Frequency	Percent
Announce/notify	Yes	197	83.5
	No	13	5.5
	Don't know	26	11
Treat patient (under safety precautions)	Yes	192	81.3
	No	15	6.4
	Don't know	29	12.3
Place of patient	Quarantine	232	93.5
Allow relatives visit	Yes	184	78
	No	32	13.5
	Don't know	20	8.5

**Results (cont.)**

Respondents assessment of EVD risk in Sudan and health authorities response:

■ High risk    ■ same as other contries    ■ do not know

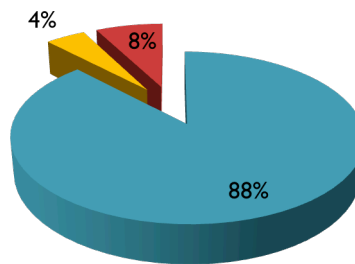
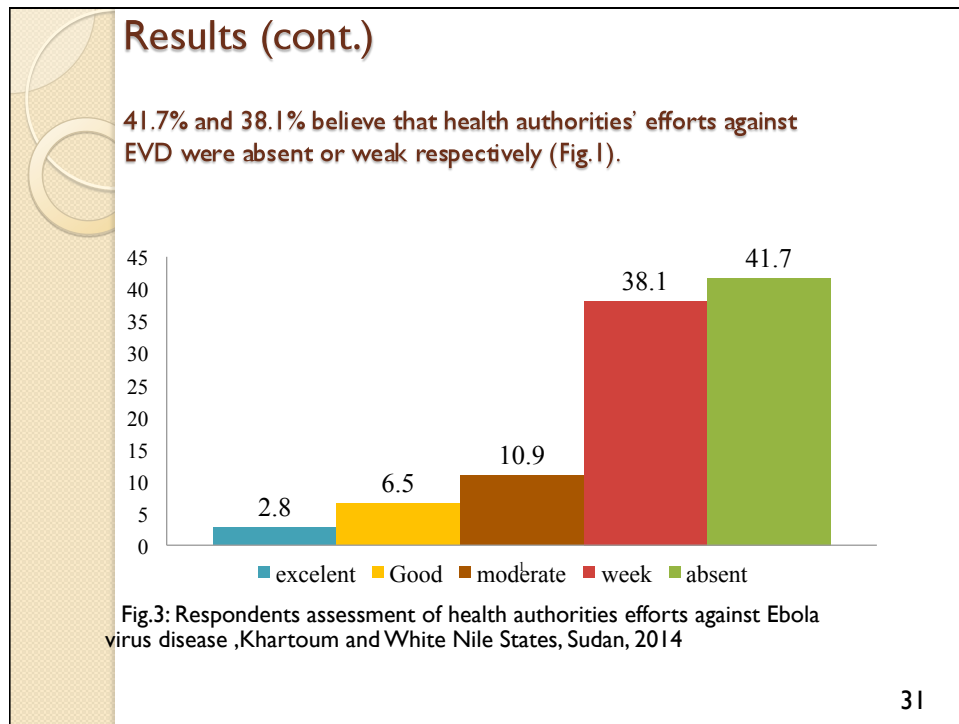


Fig 2: Respondent assessment of Sudan susceptibility to EVD outbreak, Khartoum and White Nile States, Sudan, 2014

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## Discussion

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## Discussion

ORIGINAL ARTICLE

J Pub Health Med Res

2014;2(2):13-18

### **Ebola Virus Disease: Knowledge, Attitude, Practices of Health Care Professionals in a Tertiary Care Hospital**

C.G. Raghavendra Vailaya, Sudeep Kumar, Sajid Moideen  
Department of Pediatrics, Sahyadri Narayana Multispeciality Hospital, Shimoga, Karnataka.  
(Received : 07/08/2014, Revised : 11/09/2014, Accepted : 17/09/2014)

- 41.2% got their knowledge about EVD from electronic media and 44.5% did so from classical media, including television, radio, and newspapers.<sup>13</sup>
- In comparison, in the present study, 68.6% of respondents learned about EVD from classical media.

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## Discussion (cont.)

### Study on Public Knowledge, Attitudes, and Practices Relating to Ebola Virus Disease (EVD) Prevention and Medical Care in Sierra Leone



- Among 1413 individuals from multiple households in 9 districts in Sierra Leone, only 39% of respondent knew that it is a viral illness.<sup>14</sup>
- In contrast, in the present study, 93.8% knew the correct answer..

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## Discussion (cont.)

ORIGINAL ARTICLE

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- The Indian study used a similar grading system as ours to evaluate knowledge of EVD, and found that the majority of doctors achieved good (38.4%) or average (30.7%) grades.<sup>13</sup>
- In contrast, in the present study, doctors predominately achieved poor (27.85%) or very good (27.7%) grades.
- Among allied health personnel, 41.5% achieved poor grades concerning knowledge about modes of transmission, clinical manifestations, and means of prevention.

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## Discussion (cont.)

- We found significant differences in knowledge about EVD ways of transmission and clinical features between doctors and AHP.
- One possible explanation is that doctors are more educated in microbiology and infectious diseases because of continuous professional development

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## Discussion (cont.)

Study on Public Knowledge, Attitudes, and Practices Relating to Ebola Virus Disease (EVD) Prevention and Medical Care in Sierra Leone

- Misconceptions of EVD modes of transmission was evident among respondents in KAP study in households in Sierra Leone, as 29.7 and 30.4% of them believed that EVD is transmitted by air or through mosquito bites respectively <sup>14</sup>.
- In our study, nearly half of respondents chose air, and a fifth selected insects as a ways of EVD transmission.

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## Discussion (cont.)

- This misconceptions could attributed to lack of training about EVD among majority of them (91.1%). Consequently, 79.8% of them commented there were no or weak efforts from local health authorities against EVD.

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## Limitations

- However, This study has several limitations. Self-reported responses might not always reflect the individual' actual practice. In addition,
- It was difficult to collect data from consultants, most of whom were either busy or unavailable.

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## Conclusion

- Classic media and the new emerging social networks play an important role in increasing awareness about EVD
- However, this study showed lack of HCP knowledge, especially among AHP.

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## Conclusion (cont.)

- It was evident that the vast majority of HCP had not received any training concerning EVD.
- authors recommend more in-services training for different HCP to offer them scientific knowledge regarding EVD

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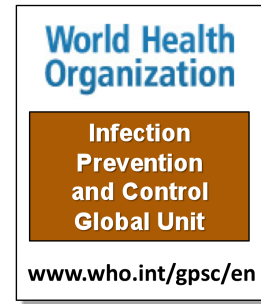


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