World Journal of Pharmaceutical Sciences
ISSN (Print): 2321-3310; ISSN (Online): 2321-3086
Published by Atom and Cell Publishers
Available online at: http://www.wjpsonline.org/
Original Article

Pharmacist's awareness about Ebola infections and their treatment in Riyadh, KSA

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Received: 18-03-2015 / Revised: 27-04-2015 / Accepted: 29-04-2015

ABSTRACT

Pharmacists need to be aware of newer diseases and their ailments and ensure good healthcare practice by counselling the patients and addressing their queries on treatment. Continuous healthcare education for healthcare workers fulfils this objective. However, the level of awareness and knowledge gained through such programs needs evaluation in order to address certain inadequacies met. With this in mind, we aimed at assessing the awareness about Ebola infections and their treatment among pharmacists. Our findings indicated the need of improvement in the level of knowledge and awareness among pharmacist about Ebola infections .In addition, the study emphasised the need for continuous healthcare education for pharmacists.

Key words: Ebola, Awareness and Pharmacist's

INTRODUCTION

Recent outbreaks of Ebola, a rare and deadly disease in humans and nonhuman primates, caused by Ebola virus (EBOV)sensed in several African countries. Ebola virus belongs to family Filoviridae, a group of negative-strand RNA viruses that can cause severe hemorrhagic fever in humans, consists of 2 genera, Ebolavirus and the closely related Marburg virus [1]. Ebola virus consists of four species, Zaire EBOV, Sudan EBOV, Ivory Coast EBOV these 3 strains firstly discovered in Africa, and Reston EBOV in Asia, which were first isolated in the Congo, Sudan, Ivory Coast, and the Philippines, respectively [2].

Although the natural reservoir host of Ebola virus remains unknown, the virus assumed to be animal-borne and bats suspected to be the most likely reservoir. Among human, the virus spreads only after appearance of symptoms (2-21 days) including but not restricted to fever, severe headache, muscle pain, weakness, fatigue, diarrhoea, vomiting, abdominal (stomach) pain, unexplained haemorrhage (bleeding or bruising). Transmission of virus among humans occurs by direct contact of body fluids through broken skin, mucous membrane or contaminated syringes and needles. But certainly no transmission occurs through air, water or food[3,4].

Severe hemorrhagic fever is the main symptoms of Ebola virus infection. The infection with this dangerous virusis characterized by high mortality rates in humans and animals (5, 6, 7).Mortality rate sometimes reaching 50 to 90% of infected individuals, in humans and nonhuman primates (2, 8, 9). The replication of the virus takes place in cytoplasm of the infected cell and the inclusion body of the virus formed in the cytosol (10). Viral ribonucleoprotein found as inclusions bodies with complexes consisting of viral RNA and four types of protein nucleocapsid which are the nucleoprotein (NP), VP35, the polymerase (L), and VP30 [11, 12].

Febrile persons should be suspected for Viral hemorrhagic fever (VHF), if within 3 weeks before onset of fever, have travelled in the specific area where VHF has recently occurred. In addition, persons who had direct unprotected contact with blood, other body fluids, secretions, or excretions of a person or animal with VHF; or had a possible exposure when working in a laboratory that handles hemorrhagic fever viruses should be suspected for VHF [13].The likelihood of acquiring VHF is low in persons who do not meet any of these criteria. Even following travel to areas where VHF has occurred, persons with fever are more likely to have infectious diseases other than VHF (e.g., common respiratory viruses, endemic infections such as malaria or typhoid fever). Clinicians should promptly evaluate and treat patients for these more common infections while awaiting confirmation of a VHF diagnosis [14].

Typical early symptoms of ebola hemorrhagic fever (EHF) and Marbur gvirus hemorrhagic fever

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(MHF), such as fever, fatigue, headache, muscle aches, vomiting, and diarrhoea, are nonspecific [15, 16], making initial syndromic-based identification of these diseases a challenge. Serologic, molecular, and virology data suggest that fruit bats are the zoonotic reservoir of filo viruses [17–18]; however, filo virus outbreaks are characterized by prolonged chains of familial and nosocomial person-to-person transmission, which occurs through direct contact, contact with bodily fluids, or contact with contaminated clothes or linens of an infected person [19–20]. There are common, recurrent themes that characterize most large (100 or more cases) filo virus outbreaks. For example, filo virus outbreaks often involve long temporal lags between initial cases and subsequent outbreak identification and response.

Health care workers, family members or anyone coming in close contact with the diseased or deceased have the risk of exposure. However, the disease can be contained by good personal/environmental hygiene, appropriate protective measures and good health care practice. ELISA and PCR can diagnose the disease, only 3 days after appearance of symptoms, when the viral titre is usually high. As on date, no FDA approved drugs or vaccine is available to treat or prevent the disease. Treatment is mainly focussed on symptomatic relief and improving the chances of survival. It includes intravenous fluids replacement (IVR) and balancing electrolytes (body salts), assisted breathing, and treatment of secondary infections if any. Overall, recovery from disease is mainly dependent on good supportive care and individual's immune response [3,4].

As a member of healthcare team, pharmacists play a substantial role in assuring good healthcare practice by counselling the patients and addressing their queries on treatment. Therefore, it is mandatory for them consistently upgrade their knowledge on newer diseases and their ailments. Awareness and up-to-date knowledge on newer disease consequently assures good healthcare practice. Continuous healthcare education for healthcare workers plays a vital role in fulfilling this objective. Moreover, it is equally important to evaluate the level of awareness and knowledge gained through such programs, which will help to address certain inadequacies met. Consecutively adding value to such programs by constructive criticism. With this in mind, we aimed at assessing the awareness about Ebola infections and their treatment among pharmacists.

METHODS

The Questionnaire: A questionnaire with 11 close-ended questions to assess the knowledge of Ebola infection covering its transmission, signs and symptoms, risk factors, prevention and treatment was prepared. Demographic data included designation; speciality, age group and gender. A group of experts on the field evaluated the questionnaire for face and content validity. Six professors by face-to-face interview assessed and affirmed the comprehension and clarity of the questions.

Settings, participants, data collection and analysis

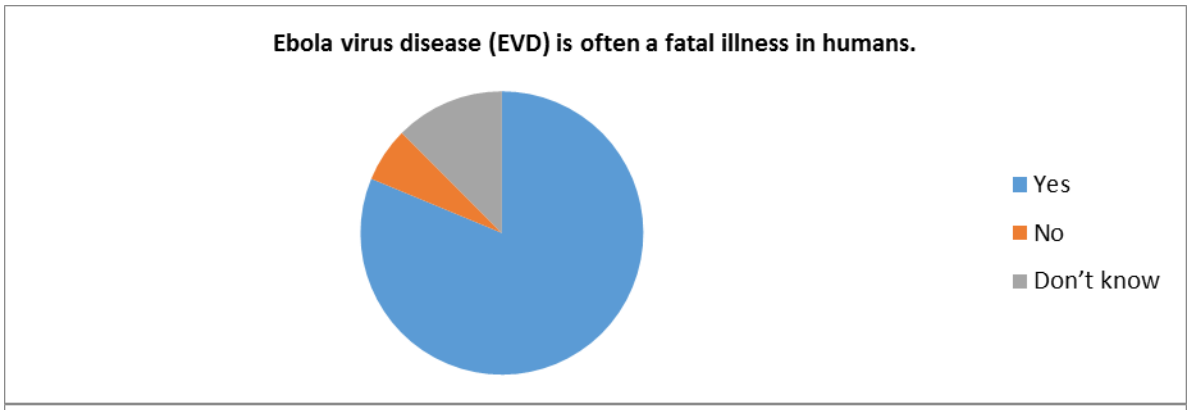
We recruited samples opportunistically from 2 hospitals and 22 community pharmacies in Al Riyadh, KSA and conducted the survey over a period of one month from mid-November to mid-December 2014. All participants completed questionnaires and returned them during the same session for spontaneous answers without any use of references. Correct answers were identified from the WHO and CDCC guidelines. Extent of right answers or right combinations of answers were calculated.

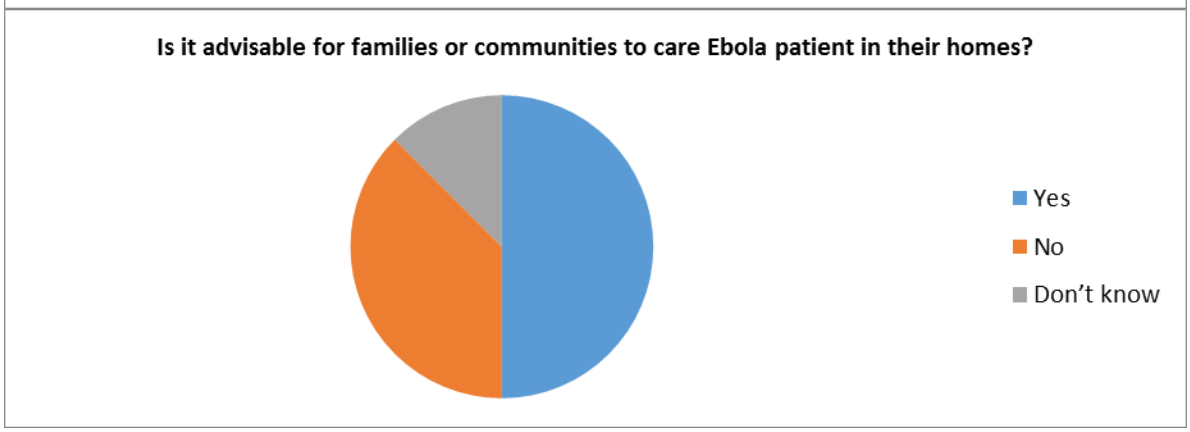
RESULTS

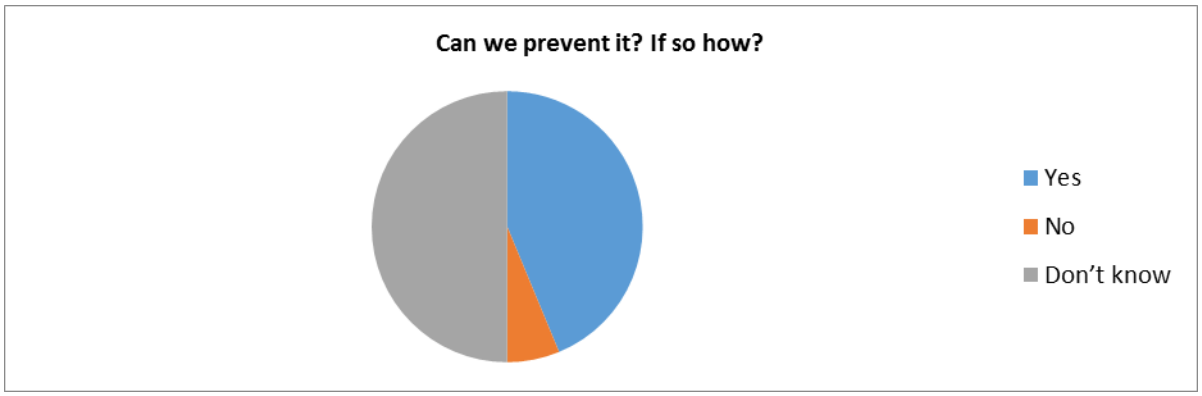
Table-1: Summary of correct responses

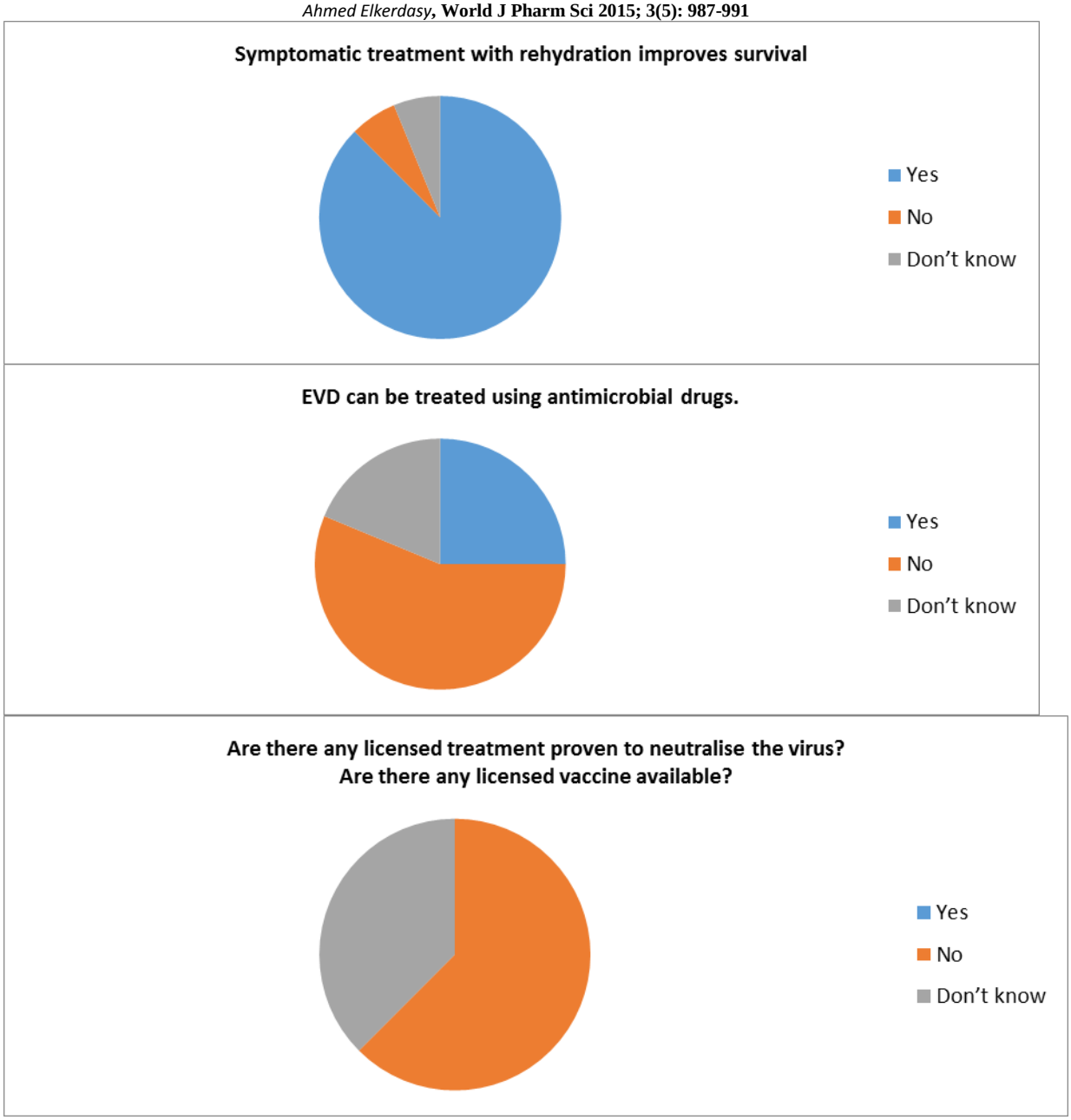
Questions	Correct Responses		
	Total (N=30)	Community Pharmacists (n=22)	Hospital Pharmacists(n =8)
Ebola virus disease (EVD) is often a fatal illness in humans	86.67	81.81	100
How people infected with the virus?	13.33	4.55	37.5
The average fatality rate of the disease is around	33.33	18.18	75
Is it advisable for families or communities to care Ebola patient in their homes?	40	27.27	75
Who is most at risk?	6.67	0	25
Can we prevent it? If so how?	46.67	36.36	75
Symptomatic treatment with rehydration improves survival.	93.33	90.90	100

What are the signs and symptoms of infection?	53.33	45.46	75
EVD can be treated using antimicrobial drugs.	60	59.09	62.5
Are there any licensed treatment proven to neutralise the virus? If so, mention.	66.67	59.09	87.5
Are there any licensed Ebola vaccines available?	66.67	59.09	87.5









DISCUSSION

To our knowledge, this is the first published study that has investigated community pharmacists' awareness, about Ebola virus infection. So on going through the literature it seem to be scanty about this subject. The percentage of correct responses presented in table-1. Wrong responses included Don't Know responses also. Do not know responses indicate the lack of knowledge or awareness and hence considered as wrong responses. For two questions, the percentage of correct responses was less than 20%. The results indicated lack of clear understanding on how the disease spreads and who are under risk? Additionally, only 40 % pharmacists were aware of the fact that EVD needs hospitalisation. In addition, less than 50% pharmacists were aware of prevention of spread of disease. To our surprise, approx. 40 % pharmacists wrongly believe that the disease can be treated using antimicrobial drugs. More than 60% pharmacists were aware about non-availability of FDA approved/licenced drugs and vaccines. Overall hospital pharmacists are found to have better knowledge than community pharmacists does.

This study suggests the need for Pharmacists to be highly trained. In addition, they must have the capable professionalism to provide significant frontline health services to the public on a daily basis. Over the last number of years, the Provincial Government has been working with pharmacists to enhance their role in health care delivery.

Conclusion

Upgrading knowledge on newer diseases and their ailments assures good healthcare practice. Continuous healthcare education for healthcare workers is vital role in fulfilling this objective. The study emphasized the need for continuous healthcare education for both community and hospital pharmacist about Ebola virus especially in endemic countries.

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