Knowledge and Hygiene Practices for the Prevention of Ebola Virus Infection In Selected Communities In Ghana And Nigeria

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Abstract

Africa experienced large outbreak of Ebola Virus Infection (EVI) recently. Although generally, the infection has receded, yet, a part of Africa is still battling with its recurrence. Community knowledge and hygiene practices are important in enhancing disease control interventions. This study investigated the knowledge and hygiene practices for prevention of EVI. A cross-sectional survey of 384 respondents (192 from each study area) were selected through a multi-stage sampling technique among households in Nigeria and Ghana with the aid of structured questionnaire focusing on awareness, knowledge and hygiene practices of community members about EVI. Bivariate analysis was used to assess Knowledge and hygiene practices for prevention of EVI. The study revealed that, there is slight difference in the level of awareness (94.3% Nigerians and 95.3% Ghanaians) and knowledge of Nigerians and Ghanaians about the causes, means of transmission, control and strategies for prevention Ebola Virus Infection. Despite the high knowledge of Ebola Virus Disease and adherence to the practices in Nigeria and Ghana, Correlational analysis showed this did not correlate with their current household health production related practices to prevent its latter outbreak. Ghanaians' high knowledge of the disease despite no record of the outbreak enhanced their continual observance of the practices they perceive are efficacious in guiding against the outbreak of Ebola within households.

Knowledge on EVI was high in the study sites. However, this knowledge did not have significant positive influence on hygiene practices.

Key Words Knowledge, Practices, Prevention, Ebola Virus Infection

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1.   Introduction

Epidemic prone disease continues to be serious public health challenge to nations in the African region (World Health Organization, 2015**)**.EVI formally known as Ebola hemorrhagic fever is a severe often fatal illness in humans transmitted from wild animals to humans. Ebola viruses are highly transmissible especially in human population by direct contact with infected blood, secretions, tissues, organs or other bodily fluids of dead or living infected persons (WHO, 2014). The EVI outbreak was the first ever to occur in urban areas and West Africa;it was adjudged the most complex, longest, deadliest and widest epidemic ever in history with an overwhelming devastating effect on every aspect of the society (WHO, 2015). It did not just pose a problem to the affected countries alone; it wasalso a global health threat. Knowledge about a particular epidemic disease will determine how people will relate to it.

The little or no prior knowledge of EVIin West Africa, especially rural areas where the outbreak started constituted a problem in the attitude to and perception of the epidemic. Although Ebola outbreak historically has occurred in rural areas of Central Africa, with isolated cases identified elsewhere (Alexander and McNutt, 2010); and between the first recognized outbreak of EVIin 1976 and the onset of the 2013−2015;about 24 outbreaks of EVI involving approximately 2,400 reported cases were recognized by the World Health Organization (WHO, 2014). This would have increased with the ongoing struggles to curb EVI in rural Democratic Republic of Congo .It is therefore evident that there is prevailing little or no knowledge of the cause, signs and symptoms, treatment, prevention and control of the epidemic in rural areas.

Ebola outbreak in West Africa posed relationship challenges between and among individuals, within family and society at large as well as impaired cultural practices. For instance, it affected culture of hand shake and hugging which has been a valued means of exchanging pleasantries and social interaction. Hygiene practices(Household production of health) is one of the

adopted means of preventing the disease. The household health production related practices to guide against future Ebola Outbreaks are crucial, knowing fully well that the family is the primary producer of health (Mosley, 1984).Studies have linked the outbreak of EVI in human population to Hygiene practices such as food consumption especially consumption of bush meats in the area of preparation, proper food preparation and regular hand-washing among others (WHO, 1995; Leroy, Epelboin and Mondonge, 2007; Olson, Reed, Cameron, Sebide, Johnson and Morse, 2012; Formenty, Boesch and Walker, 1999). Hygiene practices within households indeed determine the spread of infectious disease in rural areas. According to the World Health Organizations (2011), Household is the primary unit of health production. Zoonotic diseases, naturally transmissible between animals and humans, make up more than 60% of emerging infectious diseases in humans (Jones , Patel, Levy and Storeygard, 2008) and are regarded as posing a growing threat to public health and global food security (Karesh, Dobson and Lloyd, 2012).

Moreover, relatively little or no study in West African countries have compared between countries with cases of Ebola outbreak and those that have no record. Ebola is a highly infectious cross boarder disease; studies targeted at these countries will assist in guiding against future Ebola outbreak. For example Ghana, a close West African country to those that experienced the outbreak experienced cholera outbreak the same period of Ebola outbreak in Guinea. The outbreak of Ebolain West Africa was not the first time; there have been many reported outbreaks since 1977.Most countries in West Africa with no record of Ebola Virus Disease share many of the contextual factors that have contributed to the epidemic such as cultural practices, similar health systems challenges characterized by poor public health system such as limited financial investment in healthcare, shortage and mal-distribution of healthcare workers, medications and medical supplies, poor health information systems, porous borders and weak governance.

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Many studies and reports on EVI have focused on the macro socio-economic impact of the disease on the society and a general behavioural change at the societal level, there are little or no studies that have focused on the micro level of hygiene practices in rural areas which studies have revealed led to the outbreak of the disease in Guinea spreading to other countries of the world.

This paper, therefore, examine knowledge of people about EVI and the hygiene practices for the disease prevention especially in rural areas.

2.   Methodology

The research design adopted for this paper is a cross-sectional survey research design. The study entailed quantitative research method to gather relevant data with the aid of a semi-structured questionnaire.

Description of the study areas

The study took place in Nigeria and Ghana. In Nigeria, Ibadan North Local Government Area of Oyo State was the study location. It is located approximately on longitude 8°5′ East of the Greenwich meridian and latitude 7°23' North of equators. According to the 2006 population census (provision result); it has a proportion of 306,763. The male population is given as 153,039 and female population as 153,756 (source ERN (National Bureau of Statistics)). Ibadan North Local Government Area comprises 12 wards. This local government consists of multi-ethnic nationalities predominated by the Yoruba; the Igbos, Edos, Urhobos, Itsekiris, Ijaws and Hausas among others.

The inhabitants are mostly traders, university and polytechnic lecturers, civil servants and students. The Local Government also houses several educational institutions such University College Hospital (UCH), University Health Service, Jaja clinic, Adeoyo Hospital and several Maternity Centre and dispensaries. Ibadan North Local Government area is enriched by the Yoruba cultural ethos and practices. The area is densely populated, hence giving room for easy

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spread of epidemics such as Ebola. The culture of communal living still prevails in the study area despite westernization.

Consumption of bush meat which is adjudged rich and one of the indices of good living is prevalent in Ibadan as it is available in most households and cafeterias across the town. The cultural greeting by handshakes which was although imbibed from the western culture is widely practiced in Ibadan despite the traditional culture of greetings.

Kumasiis the largest metropolitan area of Ghana with about 7 million population(invest kumasi, 2015)is between 6.35o–6.4o latitude and 1.3o –1.35o longitude located in the transitional forest zone near Lake Bosumtwi, in a Rain Forest region,. Kumasi is approximately 500 kilometers (300 mile) north of the Equator and 200 kilometers (100 mi) north of the Gulf of Guinea.and is the commercial, industrial and cultural capital of the Asante ethnic group. Kumasi has a teaching hospital to support the medical training at the University (KomfoAnokye Teaching Hospital), the West End Hospital, several other private hospitals, public clinics and small hospitals which afford the residents the opportunity of accessing different health care services at different levels. The unique centrality of the city as a traversing point from all parts of the country makes it a special place for many to migrate to which is one of the means of the wide spread of Ebola Virus Disease in Guinea, Liberia and Sierra Leone. The rich cultural heritage of the people of Kumasi is visible in Akwasidae festival, funerals, child-naming ceremonies, communal spirit and religion. The traditional religious practices are still upheld through the pouring of libation, marriage rites and rites of passage.

Accra just as Kumasi is the capital and largest city of Ghana, with a population of 2.27 million and metropolitan population of 4 million people making the second largest metropolitan region in Ghana after Kunmasi and the eleventh largest metropolitan area in Africa (The World Factbook, CIA, 2013).   Accra shares the same cultural economic characteristics of Kumasi and homes

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several higher institutions and several teaching hospitals to support the medical training in the universities, general hospitals as well as several private hospitals, public clinics and small hospitals which gives the residents access different health care services at different levels.

3.   Study design

The research design for the study is a cross-sectional survey conducted in June, 2016 in three selected towns.

Study population

The study population for the study comprised household members ranging from 18 years and above.

Sample size

The sample size was determined with Yamane (1967:886) formula. Four hundred (400) respondents were recruited for the study. Two hundred from Nigeria and two hundred from both Kumasi and Accra, Ghana.

3.1   Sampling technique

Study towns were selected using a multistage sampling procedure. At the first stage, the study areas were stratified into communities. The rationale for stratifying the areas into communities was for all desired characteristics of the study areas to be accommodated into the study within the limited time-frame. The communities were then stratified into enumeration areas. At the second stage, the systematic sampling technique was employed to reach every third street and houses in the selected enumeration areas while the purposive sampling technique was employed to select households within selected footpaths and undefined streets. Accessible houses along footpaths and in the undefined streets were purposively reached for the study. Houses that were not located in those areas were excluded from the study. The justification for employing the purposive sampling technique was due to some enumerated

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areas which had no defined streets, and thus, this made it difficult to locate houses that were not in proximity to the researcher during the study.

Finally, the simple random and purposive technique was employed to reach every household member comprising of household heads, their wives and other members until the sample size (400) was reached.

3.2   Instruments

A semi structured questionnaire was employed in collecting data. The first section contained questions on socio-demographic characteristics of respondents, the second, household production of health practices imbibed for preventing Ebola virus disease and the third, gender roles in the prevention of Ebola. The questionnaire was administered by the researcher with the aid of a field research assistant who was the interpreter, especially in Kumasi and Accra Ghana where there were communication barrier between the researcher and the respondents. 200 questionnaires were administered in Ibadan North local government area, Nigeria, and 200 in Accra and Kumasi, Ghana. 384 questionnaires were however retrieved back by the researcher.

4.   Data management and analysis

Data gotten from the field was kept confidential in a research box daily. Data gotten through administered questionnaires were kept strictly in a safe place. There was a daily data input into the computer and were saved in the personal email of the researcher for back-up. Data based on the objectives of the study were obtained from the significant and relevant respondents through the adopted research instrument with the aid of research assistants in the study areas.

4.1   Ethical consideration

Ethical clearance certificate (UI/SSHEC/2015/0021) to conduct the study was granted by the UI/Social Sciences Ethics Committee (SSHEC), Nigeria. Before

commencement of the study, the principal investigator and his research assistant met with the community heads and key personnel in the selected study areas during which the objectives of the study including procedures to be followed were explained. Participants who consented to participate in the study were identified with the principle of anonymity strictly adhered to.

5. Results

Distribution of respondents by socio-demographic variables and countries

A significant proportion of the respondents from both countries of study are young adults. Only a very few are aged 45 and above. There is no significant difference between the age groups from both countries. The means age for respondents in Nigeria is 43.91 and for Ghana, 43.32 respectively. The proportion of male respondents are a little above that of the female from both countries respectively. There however appeared some differences in the marital status of respondents from both countries. While majority (69.8%) of the respondents from Nigeria are married, the majority (61.5%) of those from Ghana were singles. Only a very few were either separated or divorced. Christians constituted an overwhelming majority (78.6% and 69.8%) and both Nigeria and Ghana do not differ markedly in their religious compositions. Majority of the traditionalist were however from Ghana. The reported level of educational attainment showed that a little above half (56.8% in Nigeria and 59.4% in Ghana) of respondents from both study areas had tertiary education.

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Awareness and knowledge of EBV

Awareness	Ghana		Nigeria		
	High Knowledge	Low Knowledge	High Knowledge	Low knowledge	Total
Aware	115(92.7%)	23(67.6%)	123(92.5%)	17(70.8%)	278(88.3%)
Not aware	9(7.3%)	11(32.4%)	10(7.5%)	7(29.2%)	37(11.7%)
Total	124(100%)	34(100%)	133(100%)	24(100%)	315(100%)

Data on awareness and knowledge of respondents in Ghana and Nigeria revealed very high level of awareness and knowledge of EVI in both countries. There is no difference in the Knowledge and level of awareness of EVI in Nigeria and Ghana.

Independent sample t-test for differences in household production of Health-related practices for prevention of Ebola Virus Disease in between Nigeria and Ghana

	Nationality	N	Mean	Std. Deviation	Std. Error Mean
Practices- regular hand washing	Nigeria	181	.72	.451	.034
	Ghana	183	.72	.452	.033
Proper food cooking	Nigeria	181	.41	.493	.037
	Ghana	183	.38	.486	.036
Non consumption of bush meats	Nigeria	181	.49	.501	.037
	Ghana	183	.42	.494	.037
Clean and hygienic environment	Nigeria	181	.50	.501	.037
	Ghana	183	.38	.487	.036
Proper sleeping habits	Nigeria	181	.18	.387	.029
	Ghana	183	.11	.320	.024

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Independent Samples Test

	Levene's Test for Equality of Variances			t-test		
		F	Sig.	T	df	Sig.(2-tailed)
Practices-regular hand washing	Equal Variances	.010	.920	.050	362	.960
	Unequal Variances			.050	361.974	.960
Proper food cooking	Equal Variances	1.506	.221	.620	362	.536
	Unequal Variances			.620	361.768	.536
Non consumption of bush meats	Equal Variances	5.166	.024	1.465	362	.144
	Unequal Variances			1.464	361.765	.144
Clean and hygienic environment	Equal Variances	10.502	.001	2.214	362	.027
	Unequal Variances			2.213	361.438	.027
Proper sleeping habits	Equal Variances	13.554	.000	1.817	362	.070
	Unequal Variances			1.815	348.034	.070

There is statistically significant difference in some hygiene practices of Nigeria and Ghana; particularly in the aspect of Clean and hygienic. Nigerian households maintain a more clean and hygienic environment for the prevention of EVI. The experience of Ebola outbreak in Nigeria in 2014 which resulted in different degrees of social problems could be attributable for the more practice of a clean and hygienic environment in the nation. A previous study conducted by Saheed et al (2014) confirms a change in practices for the prevention of EVI in Nigeria.

Conversely, in the aspects of practices such as regular hand washing, proper food preparation, non-consumption of bush meats and proper sleeping habits, there is no statistically significant difference between Nigeria and Ghana.

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6. Discussion

Most studies on Ebola epidemics in West Africa focused on biomedical factors and countries which recorded the outbreak alone. This study is unique in that it approached the subject by focusing on awareness, knowledge and hygiene practices within the households in a country that recorded some cases of outbreak and that which did not. Knowledge is key to behavioural changes. Findings in this study indicates that Ebola is a serious public health challenge and that knowledge about its causes, transmission, treatment and prevention is high. The high level of knowledge is synonymous to the reports of previous studies by United Nations Children's Fund (UNICEF, 2014), Centre for Public Policy Alternatives (CPPA) 2014and Saheed, et al (2015). This could be attributable to the effective utilization of the communication media, most especially the television in both countries in getting the relevant pieces of information that are beneficial to households.

The hygiene practices for prevention of EVI from the findings in the study are regular hand washing, non-consumption of bush meats, maintaining a clean and hygienic environment, proper food preparation and proper sleeping habits respectively. Nigeria and Ghana observed these practices within households. There is similarity in the hygiene practices. The perceived susceptibility of contracting EVI made Nigerians and Ghanaians take up some preventive measures. This is synonymous to the studies of Kasl and Cobb (1966) on preventive health. Taking these actions however depends on several factors regardless of the level of susceptibility (Jegede, 1998).Hochbaum, 1958, Leventhal 1959 and Becker et al 1974 however argued fearful messages are positively correlated with beliefs about severity and preventability than do fearless messages; this therefore implies that the action of people is based on the emphasis of the degree of susceptibility and severity of Ebola Virus Disease.

Findings in this study shows that in order to achieve a society free from highly communicable re-emerging diseases, more emphasis should be placed on

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designing and implementation of effective health education interventions that will address knowledge gaps on Ebola Virus Disease and other re-emerging communicable diseases among societies.

7. CONCLUSION

The study conclusively affirms that knowledge is very crucial in influencing hygiene practices. There is no difference in the hygiene practices in Nigeria and Ghana. For the prevention of EVI particularly in rural areas of West Africa, hygiene practices within households are inevitable.

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