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Assessment of Nurses Knowledge and Protective Measurement Regarding Ebola in Kirkuk City Hospital

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Abstract
Background: Ebola, already known as Ebola hemorrhagic fever, is an extreme, frequently deadly infection in people and nonhuman primates, (for example, monkeys, gorillas, and chimpanzees).
Aim of study: The aim the current study is to assess the nurses' knowledge and protective measurement regarding Ebola viruses.
Methodology: Quantitative design (descriptive study) was conducted with nurses who provide direct nursing care in Kirkuk city hospitals including "Azadi Teaching Hospital" "Kirkuk General Hospital" and "Pediatric Hospital". The period of the study was carried out from the 15th March 2016 to 22 of November 2016. A nonprobability (purposive) sample was selected, it consisted of 150 nurses, whereas 50 nurses were taken from each hospital. A questionnaire was produced for the purpose of study and based on related literature review. The overall questions included (63) items it was comprised of (5) parts: part (1) Socio demographic characteristics; part (2) Knowledge of nurses regarding general information about Ebola virus diseases; part (3) Knowledge of nurses concerning the methods transmission of Ebola ; part (4) Knowledge of nurses regarding investigation , Sign and Symptoms ; part (5) Nurses knowledge concerning Treatment & Nursing Care of ebola patients. By using the scale (Yes=2),(No=1), data were investigated through the application of descriptive statistical analysis "frequency" and "percentage"
Results: findings the study indicated (27.3%) of sample from Age group were (20-25) year's old, (64%) were male, (44.7%) were Medical institutes graduated, (69.3%) were married, and (38.0%) of the nurses worked for (1-5) years at hospital.
Conclusion: The nurse's knowledge were inadequate regarding general information about Ebola virus. While there Knowledge regarding treatment & nursing care of patients were adequate.
Recommendations: Educational programs should be designee to the nurses to increase knowledge about general information about ebola viruses disease also about etiology, signs and symptom and treatment of ebola.
Keywords: Ebola virus disease, Knowledge, Guinea.

1. INTRODUCTION:

Ebola infection's malady (once in the past known as ebola discharge fever) is a serious, regularly deadly sickness, with a demise rate of up to 90%. Ebola initially showed up in 1976 in two synchronous episodes, one in a town close to the Ebola River in the law based republic of Congo, and afterward Sudan [1]

As of September 14, 2014, a sum of 4507 affirmed and plausible instances of Ebola infection ailment (EVD), and also 2296 passing's from the infection, had been accounted for from five nations in West Africa — Guinea, Liberia, Nigeria, Senegal, and Sierra Leone. As far as detailed grimness and mortality, the present pandemic of EVD is far bigger than every past pestilence consolidated. The genuine quantities of cases and passing's are positively higher. There are various reports of symptomatic people avoiding finding and treatment, of research center conclusions that have not been incorporated into national databases, and of people with suspected EVD who were covered without an analysis having been made [2].

Infections with Ebola viruses beginning from Africa cause a serious sickness in people called Ebola viruses disease. There are five types of the variety Ebolavirus (Filoviridae family): Zaïre ebolavirus, Sudan ebolavirus, Reston ebolavirus, Taï Forest ebolavirus and Bundibugyo ebolavirus [3,4]. The present episode in West Africa is brought about by Zaïre ebolavirus. A simultaneous EVD episode was announced on 26 August 2014 in the Democratic Republic of Congo. The two episodes are not associated [5].

The incubation period of Ebola virus disease (EVD) varies from 2 to 21 days, with an observed average of 8 to 10 days. Following the introduction of Ebola virus in the human population through animal-to-human transmission, person-to-person transmission by direct contact body fluids/secretions of infected persons is considered the principal mode of transmission. Indirect contact with environment and fomites soiled with contaminated bodily fluids (e.g. needles) may also occur. Airborne transmission has not been documented during previous EVD outbreaks, There is no risk of transmission during the incubation period.[6]

The most widely recognized signs and symptoms experienced by people contaminated with the infection are the sudden onset of fever, exceptional shortcoming, muscle ache, migraine and sore throat. This is trailed by regurgitating, looseness of the bowels, rash, impeded kidney and liver capacity, and at cutting edge organize, both inside and outer dying. Lab discoveries incorporate low white platelets and platelet checks and hoisted liver proteins. [7]

Once a person with disease compatible with EVD is distinguished, a specimen must be taken (entire blood and/or serum) for the analysis. The example ought to be taken via prepared wellbeing work force with outrageous biosecurity measures and extra defensive gear (non-sterile gloves, covers, goggles - ideally with a hostile to haze visor, cook's garment or waterproof cook's garment and, if conceivable, the dispensable kind). This example ought to in a perfect world be taken at the healing facility assigned to deal with cases well with EVD and sent to the National Reference Laboratory. Of note, is that the affirmation of Ebola infection contamination must be performed in patients who have officially created indications. The affirmation is impractical amid the hatching time frame [8]. No particular medicines or immunizations are directly accessible for EVD. Be that as it may, early steady treatment can enhance the odds of recuperation [9]. Potential new Ebola treatments and antibodies were audited amid two WHO gatherings on 4–5 and 29-30 September 2014 and additionally evaluated by logical survey [10,11]. A few of these potential medications have in the previous month been utilized as a part of exploratory treatment of individual EVD cases.

2. METHODOLOGY

Quantitative design (descriptive study) was conducted with nurses who provide direct nursing care in Kirkuk city hospital "Azadi Teaching Hospital" "Kirkuk General Hospital" and "Pediatric Hospital" it consisted of 150 nurses, whereas 50 nurses were taken from each hospital

Quantitative design (descriptive study) was conducted for nurses to assess of Nurses Knowledge and Protective Measurement Regarding Ebola in Kirkuk City Hospitals, the study was carried out from the 15th March 2016 to 22 of November 2016. A non-probability (purposive) sample was selected nurses who provide direct nursing care in Kirkuk city hospitals "Azadi Teaching Hospital" "Kirkuk General Hospital" and "Pediatric Hospital" it consisted of 150 nurses, whereas 50 nurses were taken from each hospital, A questionnaire was produced for the purpose of study and based on related literature review, and it was consisting of five parts which as:

Part I/ Socio-Demographical data

It was consist of (7) items which were; age, gender, residence, material status, occupation, educational level, Service years, hospital.

Part II/ Knowledge of nurses regarding general information about Ebola virus diseases.

This part consists of (18) items

Part III/ Knowledge of nurses concerning the methods transmission of Ebola.

This part consists of (8) items.

Part IV/ Knowledge of nurses regarding investigation, Sign and Symptoms.

This part consist of (11) items.

Part V/ Nurses knowledge concerning Treatment & Nursing Care of ebola patients.

This part consist of (19) items

The overall items were (63) items, by using the scale (Yes=2), (No=1). Data were investigation through the use of descriptive statistical data investigation approach "frequency" "percentage". Knowledge of nurse in item are determined depending on the percentage of (Yes) as following:

Adequate knowledge $\geq 50\%$

In adequate knowledge $\leq 50\%$

3. RESULTS

Table (1) Distribution of the sample according to demographic characteristics.

Variables	Frequency	Percentage
Age		
20-25	41	27.3
26-30	32	21.3
31-35	40	26.7
36-40	23	15.3
41-45	5	3.3
46and more	9	6.0
Total	150	100.0
Gender		
Male	96	64.0
Female	54	36.0
Total	150	100.0
Residence		
Urban	147	98.0
Rural	3	2,0
Total	150	100.0
Marital status		
Single	44	29.3
Married	104	69.3
Divorced	0	0.0
Widow	2	1.3
Total	150	100.0
Educational Level		
Graduate of secondary nursing school	42	28.0
Graduate of medical institute	67	44.7
Graduate of the college of nursing	39	26.0
Post graduate (Msc , PhD) in nursing	2	1.3
Total	150	100.0
Service years		
Less than 1 years	17	11.3
1-5 years	57	38.0
6-10 years	34	22.7
11-15 years	25	16.7
16-20 years	5	3.3
21 years and more	12	8.0
Total	150	100.0
Hospital		
Azida teaching hospital	50	33.3
Kirkuk general hospital	50	33.3
Pediatric hospital	50	33.3
Total	150	100.0

Results of table 1 revealed that an age group (20-25) years represents the high percentage (27.3%). In relation to gender, the nurses were males and account (64.0%). With regard to residence, (98.0%) nurses were living in urban areas. Concerning marital status, the nurses were married and accounted for (69.3%). With regard to educational level, most of the staff were graduated of medical institute (44.7%). As for the service years in the hospital, the most of the staff (38.0%) had worked for (1-5) years.

Table (2) Knowledge of nurses regarding general information about Ebola virus diseases

N	Item	Yes		No	
		F	%	F	%
1	Ebola also known as Ebola hemorrhagic fever	124	82.7	26	17.3
2	Ebola is a severe illness and fatal.	129	86.0	21	14.0
3	A case mortality rate of up to 90%.	106	70.7	44	29.3
4	Genus Ebola virus is 1 of 3 members of the Filoviridae family (filovirus)	63	42.0	87	58.0
5	Genus Ebolavirus includes 5 distinct species: "Bundibugyo ebolavirus" (BDBV), "Zaire ebolavirus" (EBOV), "Reston ebolavirus" (RESTV), "Sudan ebolavirus" (SUDV) and "Taï Forest ebolavirus" (TAFV).	60	40.0	90	60.0
6	The incubation of Ebola virus disease (EVD) different from 2 to 21 days.	58	38.7	92	61.3
7	Ebola virus is the cause a highly lethal hemorrhagic fever syndrome in humans and nonhuman primates.	96	64.0	54	36.0
8	Ebola causes most harm in countries with less developed healthcare facilities and public health capacity.	107	71.3	43	28.7
9	The first Ebola species was discovered in 1976 in Sudan and the Democratic Republic of the Congo.	52	34.7	98	65.3
10	Ebola virus infect just humans.	73	48.7	77	51.3
11	Ebola virus infect animals like monkey	86	57.3	64	42.7
12	First effect of Ebola virus in march 2014 in west Africa	88	58.7	62	41.3
13	The name of Ebola virus acquire from Ebola River valley in Democratic Republic of the Congo.	41	27.3	109	72.7
14	do you read about Ebola virus in the book or internet pages	63	42.0	87	58.0
15	Fruit bats is natural host for Ebola virus	67	44.7	83	55.3
16	There are preventive measures to face Ebola virus	129	86.0	21	14.0
17	Did Iraqi people exposure to Ebola virus	105	70.0	45	30.0
18	Do you take lecture or instruction or cycle about Ebola	30	20.0	120	80.0

Consequences from Table (2) designated that knowledge of nursing was adequate knowledge in **(7)** item **(1,2,3,7,8,11,12,16,17)**, and In adequate knowledge in **(11)** items **(4,5,6,9,10,13,14,15,18) .**

Table (3) Knowledge of nurses regarding method transmission of Ebola

No	Item	Yes		No	
		F	%	F	%
1	There is no danger of transmission during the incubation frame .	57	38.0	93	62.0
2	Ebola transmission from animal to human by direct contact of blood or secretions of infected animal	90	60.0	60	40.0
3	transmission of viruses between person to person by direct contact body fluids/secretions of infected persons.	110	73.3	40	26.7
4	contact with items (like needles and syringes) that have been defiled with the blood or body liquids of a tainted individual or with contaminated creatures	118	78.7	32	21.3
5	There is a higher risk of hospital staff to Ebola when preparing care for infected person	132	88.0	18	12.0
6	exhibition to Ebola can happen in medicinal services settings where clinic staff are not wearing fitting defensive apparel including covers, outfits, gloves, and eye security.	124	82.7	26	17.3
7	The virus is transmitted through breastfeeding	43	28.7	107	71.3
8	Ebola transmission when direct contact of carcass infect	36	24.0	114	76.0

Consequences from Table (3) designated that knowledge of nursing was adequate knowledge in **(5)** items **(2,3,4,5,6)** while In adequate knowledge in **(3)** items **(1,7,8)**.

Table (4) Knowledge of nurses regarding Investigation, Sign and Symptoms of the diseases

No	Item	Yes		No	
		F	%	F	%
1	Pyrexia (more than 38.6°C or 101.5°F)	104	69.3	46	30.7
2	Muscle pain	125	83.3	25	16.7
3	Severe headache	129	86.0	21	14.0
4	sore throat	110	73.3	40	26.7
5	Vomiting and Diarrhea	108	72.0	42	28.0
6	Rash	93	62.0	57	38.0
7	Impaired kidney and liver function	108	72.0	42	28.0
8	patients exposure severe bleeding and coagulation variations , including gastrointestinal bleeding, and a range of hematological anomalies,	66	44.0	84	56.0
9	low white blood cells	92	61.3	58	38.7
10	Low platelet counts	100	66.7	50	33.3
11	Elevated liver enzymes	47	31.3	103	68.7

Consequences from Table (4) designated that knowledge of nursing was adequate knowledge in **(9)** items **(1,2,3,4,5,6,7,9,10)**, In adequate knowledge in **(2)** items **(8,11)**.

Table (5) Nurses knowledge concerning Treatment & Nursing Care of patients.

No	Item	Yes		No	
		F	%	F	%
1	There are no licensed specific treatments that have been proven to be powerful against Ebola.	111	74.0	39	26.0
2	There are no licensed specific vaccine against Ebola.	113	75.3	37	24.7
3	a few creature models have been produced to concentrate the pathogenesis of Ebola infection contamination.	108	72.0	42	28.0
4	Isolation of ebola patients from contact with healthy persons	117	78.0	33	22.0
5	Just those medical caretakers completely trained, investigation and drilled on hazards protections and equipment donning and doffing should provide care and must have no different obligations	123	82.0	27	18.0
6	Hand washing before and after contact with patients	131	87.3	19	12.7
7	Patients are usually dehydrated and needed oral rehydration with solutions containing electrolytes .	127	84.7	23	15.3
8	Oxygen therapy	115	76.7	35	23.3
9	Continue of monitor patients	120	80.0	30	20.0
10	Avoid contact any secretion or blood from the patients when take specimen from the patients	129	86.0	21	14.0
11	While expelling PPE, evade contact between sullied gloves/hands and hardware and the face, skin or apparel	130	86.7	20	13.3
12	Sterilization of the equipment after procedure with the patients	127	84.7	23	15.3
13	Staff members require continue investigation for detection if the staff is infected by Ebola or no	131	87.3	19	12.7
14	Evacuate PPE before leaving the detachment territory. Uncommon care ought to be taken while evacuating PPE to forestall contact with eyes and mucous films	129	86.0	21	14.0
15	Sanitization of the patient room is critical to diminish environmental contamination	126	84.0	24	16.0
16	After discharge of the patient, should do remove all dirty/utilized things (e.g. suction container, disposable things)	124	82.7	26	17.3
17	To prevent transmission ebola the government should follow restricted procedure in the airport including checking the arrived from African continent for detect infected person	121	80.7	29	19.3
18	Its necessary to educate people about the disease transmission, sign and symptoms and prevention of ebola through program in the TV	125	83.3	25	16.7
19	Its necessary to open training coursed for health staff about the control and preventing transmission disease	126	84.0	24	16.0

Consequences from Table (5) designated that knowledge of nursing was adequate knowledge in all

items.

4. DISCUSSION

The result of table (1) most revealed that the age group of the sample, the nursing staff were young, and their age are ranging from (20-25) years. Most of the study sample were male (64.0 %) and this may inversely effect on some of the nursing cares because females can do specific cares (general care, cleansing, bed preparation, female catheterization).The results of the present study indicate that (98.0%) of sample were living in urban areas. Concerning marital status, the most of the nurses were married and accounted for (69.3%). Medical institutes graduated nurses represented higher percentage at hospitals (44.7%). The finding of the study revealed that (38.0%) of the nurses worked for (1-5) years at hospital.

Concerning nurse's knowledge, table (2) revealed that nurses had inadequate knowledge regarding majority aspects of general information about Ebola virus diseases example Genus Ebola virus, the incubation period of Ebola virus disease and others. Except in the some of aspects were they have adequate knowledge. Inadequate knowledge because most of the nurse not take lecture and not participant in the training course about new problems like ebola viruses and limited about the virus by social media. With a positive perception, there was more involvement in the curative and preventive measures as directed by the communities and hospitals. This implies that nurses should be educated about emerging disease like EVD to reduce misconception, change the negative perception and improve the willingness of nurses to participate in disease control activities [12].

Table (3) the finding results reveal that participants demonstrated different levels of knowledge about transmission modes of Ebola and how to protect themselves against the disease. There were nurses who knew exactly how the disease can be transmitted. They mentioned the transmission modes and went further to explain how this happens. The explanations included body contact with infected person, saliva, sex, feces, blood transfusion, improper aseptic skills, lack of personal protective equipment. They also had an idea of how it is transmitted but did not add any details. Also in the table (4) the nurses knowledge regarding Investigation, Sign and Symptoms of the diseases have adequate knowledge because more of the nurses know about sign and symptom of the viruses, Brand et al. (2014) suggested that since the treatment and preventive measures of EVD are still being researched on, health practitioners should aim at being vigilant and acquiring knowledge about its epidemiology, symptoms, prevention and spread. As an example, a misperception was that Ebola can be transmitted by air [13]. According to Alqahtani et al. (2014), pilgrims who had received EVD travel advice were more informed than those who didn't. Pre-travel health care advice was carried out and it showed positive results among the people who attended it and precautions were practiced to reduce the risk factors of contracting the disease [14].

The usage of the disease control strategy brought about a few enhancements in the proper hand washing practices and utilization of gloves. Be that as it may, regardless of the setting of the Ebola flare-up, the extent of social insurance specialists who not utilizing gloves was 96.6%. This extent was sufficient for encouraging EVD transmission inside medical caretakers and patients. Such conduct is in all out inconsistency with the disease control rules executed in social insurance setting by wellbeing administrations experts. These discoveries could clarify the high rate of affirmed EVD in attendants in the current [15]. By far most of archived EVD flare-ups including doctor's facilities have clarified no socomial transmissions by deficient disconnection of offices, absence of utilization of gloves and defensive apparel by social insurance laborers [16]. In 1995 amid the Ebola flare-up that happened in Kikwit (Democratic Republic of the Congo), the investigations announced that the high transmission of EVD in human services specialists was because of the absence of utilization of aseptic-nursing strategies amid surgical and obstetrical care and patient care by and large, particularly amid the of EVD cases [17].

5. CONCLUSIONS:

1- The study concluded that most of the nurses were graduated from medical institutes, had (1-5) years' experience of work.
2- The nurse's knowledge were inadequate regarding general information about Ebola virus.
3- The nurses were adequate knowledge regarding methods of transmission of ebola also investigation and sign and symptoms.
4- While they had adequate knowledge regarding treatment & nursing care of ebola patients.

6. RECOMMENDATIONS:

1- Educational programs should be designee to the nurses to increase knowledge about general information about ebola viruses disease also about etiology, signs and symptom and treatment of ebola.
2- This study can be used as a basis for further research that could be conducted to explore the knowledge of EVD among nurses in other parts of the world. Other researchers conducting studies related to this topic can use this study as a point of reference.

3- A similar study can be conducted to assess the knowledge of different health team professionals about Ebola virus disease.
4- Improve care to patients ebola viruses include training providers in infection prevention strategies, ensuring availability of protective wear, and effectively implementing non-discrimination policies for all patients.

REFERENCE

1- World Health Organization , (2014). Ebola virus disease . Switzerland : Publication of the WHO . (Updated 2014 August 7 ; cited 2014 Nov 21). Available from : http.//www.who.int/csr/disease/ebola/en/.
2- World Health Organization. Ebola virus disease: Cuban medical team heading for Sierra Leone (http://www.who.int/csr/disease/ebola/en/).
3- European Centre for Disease Prevention and Control. Ebola and Marburg fevers - factsheet [Internet]. Stockholm: ECDC; 2014 [cited 2014 Oct 8]. Available from: http://www.ecdc.europa.eu/en/healthtopics/ebola_marburg_fevers/pages/index.aspx.
4- Li YH, Chen SP. Evolutionary history of Ebola virus. Epidemiol Infect. 2014 Jun;142(6):1138-45.
5- United Nations Office for the Coordination of Humanitarian Affairs Democratic Republic of Congo. Update in the Ebola virus disease in DRC. No. 5. [Internet]. OCHA; 2014 [updated Aug 30 2014; cited 2014 Aug 30]. Available from: http://www.rdc-humanitaire. net/attachments/article/4924/Ebola%20Update%20of%2030%20 August%20 2014%20-%20No%205%20ENG.pdf.
6- Piercy TJ, Smither SJ, Steward JA, Eastaugh L, Lever MS. The survival of filoviruses in liquids, on solid substrates and in a dynamic aerosol. J Appl Microbiol. 2010 Nov;109(5):1531-9.
7- Towner JS, Rollin PE, Bausch DG, Sanchez A, Crary SM, Vincent M, et al. Rapid diagnosis of Ebola hemorrhagic fever by reverse transcription-PCR in an outbreak setting and assessment of patient viral load as a predictor of outcome. J Virol. 2004 Apr;78(8):4330-41.
8- Towner JS, Rollin PE, Bausch DG, Sanchez A, Crary SM, Vincent M, et al. Rapid diagnosis of Ebola hemorrhagic fever by reverse transcription-PCR in an outbreak setting and assessment of patient viral load as a predictor of outcome. J Virol. 2004 Apr;78(8):4330-41.
9- World Health Organization. Clinical management of patients with viral haemorrhagic fever: a pocket guide for the front-line health worker. 30 March 2014 [Internet]. Geneva: WHO; 2014. Available from: http://apps.who.int/iris/bitstream/10665/130883/2/WHO_HSE_PED_AIP_14.05.pdf?ua=1.
10- World Health Organization. Potential Ebola therapies and vaccines (background document for participants of the WHO Consultation on potential Ebola therapies and vaccines in Sep 2014) [Internet]. WHO; 2014 Sep 3 [cited 2014 Oct 8]. Available from: http://www.who.int/csr/disease/ebola/ebola-new-interventions-02-sep-2014.pdf?ua=1.
11- Friedrich BM, Trefry JC, Biggins JE, Hensley LE, Honko AN, Smith DR, et al. Potential vaccines and post-exposure treatments for filovirus infections. Viruses. 2012 Sep;4(9):1619-50.
12- Aung, H.M., Myint, O.W., Lynn, K.K., Mya, K.M. 2015. Knowledge and perception to-wards Ebola Virus Disease among nursing students in the University of Nursing, Yan-gon. Accessed on 21 December 2015. http://www.aca-demia.edu/17302971/Knowledge_and_perception_towards_Ebola_Virus_Dis-ease_among_nursing_students_in_the_University_of_Nursing_Yangon.
13- Brand, J.E, Siela, D., Caine, V.A., Dearth, S. 2014. Vol 9 (10). Ebola is here: Knowledge, identification, and appropriate infection control are key. Accessed on 20 September 2015. http://www.americannursetoday.com/ebola-knowledge-identification-appro-priate-infection-control-key/.
14- Alqahtani, A.S., BinDhim, N.F., Booy, R., Heywood, A.E., Rashid, H., Tashani, M., Wiley, K.E. & Willaby, H.W. 2015. Australian Hajj pilgrims' knowledge, attitude and perception about Ebola, November 2014 to February 2015. Vol. 20, 12. 26 March 2015. Accessed on 16 September 2015. http://www.eurosur-veillance.org/ViewArticle.aspx?ArticleId=21072.
15- MacIntyre CR, Chughtai AA, Seale H, Richards GA, Davidson PM (2014). Respiratory protection for healthcare workers treating Ebola virus disease (EVD): are facemasks sufficient to meet occupational health and safety obligations? Int. J. Nurs. Stud. 51(11):1421-1426.
16- Okeke IN, Manning RS, Pfeiffer T (2014). Diagnostic schemes for reducing epidemic size of african viral hemorrhagic fever outbreaks. J. Infect. Dev. Ctries 8:1148-1159.
17- Kerstiëns B, Matthys F (1999). Interventions to control virus transmission during an outbreak of Ebola hemorrhagic fever: experience from Kikwit, Democratic Republic of the Congo, 1995. J. Infect. Dis.179 Suppl 1:S263-S267.

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