UNIVERSITI PUTRA MALAYSIA

SOCIO-DEMOGRAPHIC PREDICTORS OF KNOWLEDGE, ATTITUDE AND PRACTICE IN RELATION TO EBOLA VIRUS DISEASE AMONG MEDICAL AND NURSING STUDENTS IN A TEACHING HOSPITAL, NIGERIA

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By

LAWAN GANA BALAMI

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Master of Science

August 2016

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DEDICATION

To

My loving mother

Hajiya Hannatu Suleiman Balami

My late father

Dr. Suleiman Gana Balami

My caring sisters

Hauwa, Lami and Mairo

My dear brother

Bashir

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirements of degree of Master of Science

SOCIO-DEMOGRAPHIC PREDICTORS OF KNOWLEDGE, ATTITUDE AND PRACTICE IN RELATION TO EBOLA VIRUS DISEASE AMONG MEDICAL AND NURSING STUDENTS IN A TEACHING HOSPITAL, NIGERIA

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August 2016

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Faculty : Medicine and Health Sciences

Introduction: The Ebola Virus disease (EVD) is a re-emerging disease, which in recent years has resulted in global fear and panic. The recent 2014 outbreak in West Africa has been devastating both in terms of death rate and wide spread transmission. There is neither a cure nor vaccine available and poor Knowledge, Attitude and Practices (KAP) among Health Care Workers (HCW) has amplified the spread of the disease.

Aims and objectives: The aim of this study was to determine the predictors of KAP regarding the EVD among medical and nursing students in their clinical years of training in University of Maiduguri Teaching Hospital (UMTH) Nigeria.

Method: A cross-sectional study was conducted among 423 under-graduate students from the Faculties of Medicine and Nursing at the UMTH Nigeria using multi-stage stratified random sampling. Respondents were first stratified based on field of study and secondly based on year of studies then randomly selected using student rosters. Information on socio-demography as well as KAP was collected using a pretested structured self-administered questionnaire. Knowledge was measured using a three-point scale with responses of either "yes, no or I don't know". Attitude was measured using a five-point Likert scale of "1 for strongly disagree to 5 for strongly agree". Practice was measured using a four-point scale of "1 for never to 4 for all the time". KAP were categorized as good if the cumulative score was ≥ 70%, otherwise a poor category was assigned. Data was analyzed using IBM SPSS version 22. Descriptive analysis was used for socio-demographic variables as frequencies, measures of central tendency and dispersion. For bivariate analysis, chi-square test was used to test for association between socio-demographic categorical variables and categorized KAP. While Spearman's rank correlation was used to correlate between continuous socio-demographic variables and continuous KAP scores as well as

correlation between KAP. Socio-demographic variables with significant association and correlation from bivariate analysis were entered into the regression model and analyzed to determine socio-demographic predictors of KAP using multiple logistic regression by the Forward Likelihood Ratio method.

Results: The response rate was 90.7%. Majority had poor knowledge (59.1%), about 51.8% had good attitude, and a majority (72.8%) had good practice respectively. The socio-demographic predictors of knowledge were age (AOR = 1.164, 95% CI = 1.07 - 1.26), field of study (AOR = 4.64, 95% CI = 2.33 – 9.23) and year of studies (AOR = 2.27, 95% CI = 1.06 – 4.84). For attitude were age (AOR = 1.09, 95% CI = 1.01 – 1.18), field of study (AOR = 1.95, 95% CI = 1.14 – 3.34) and year of studies (AOR = 1.99, 95% CI = 1.08 – 3.67). While the predictors for practice were age (AOR = 1.20, 95% CI = 1.12 – 1.28) and year of studies (AOR = 2.45, 95% CI = 1.11 – 5.40).

Conclusion: This study determined socio-demographic predictors of KAP regarding EVD among medical and nursing students during their clinical years of training. The findings showed age, year and field of study to be the significant socio-demographic predictors of KAP, which signifies their relevance. The application of these findings towards improving KAP and subsequently the quality of health care services through better government policies is therefore recommended.

Keywords: Knowledge, attitude, practice, Ebola virus, students.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk Ijazah Master Sains

PERAMAL SOSIO-DEMOGRAFI UNTUK PENGETAHUAN, SIKAP DAN AMALAN BERKAITAN PENYAKIT EBOLA DI KALANGAN PELAJAR PERUBATAN DAN PELAJAR KEJURURAWATAN DI HOSPITAL PENGAJAR, NIGERIA

Oleh

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Pengerusi : Suriani binti Ismail, PhD
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Pengenalan: Penyakit Ebola (EVD) merupakan penyakit yang muncul semula, dan dalam tahun-tahun kebelakangan ini telah menyebabkan ketakutan dan panik secara global. Wabak ebola yang merebak di Afrika Barat pada tahun 2014 telah menyebabkan kemusnahan besar sama ada dari segi kadar kematian atau luasnya penyebaran penyakit. Tidak terdapat penawar atau ubat untuk menghalang penyebaran penyakit ini, ditambah pula dengan pengetahuan, sikap dan amalan (KAP) yang lemah dalam kalangan Pekerja Penjagaan Kesihatan (HCW) telah merancakkan lagi penyebaran penyakit ini.

Objektif: Tujuan kajian ini adalah untuk menentukan peramal KAP mengenai EVD dalam kalangan pelajar perubatan dan kejururawatan pada tahun klinikal mereka di Hospital Pengajar Universiti Maiduguri (UMTH) Nigeria.

Kaedah Kajian: Satu kajian keratan rentas telah dijalankan dalam kalangan 423 pelajar ijazah pertama di Fakulti Perubatan dan Kejururawatan di UMTH Nigeria dengan menggunakan pelbagai peringkat persampelan rawak berstrata. Pertama, responden distrata berdasarkan bidang pengajian, kedua, berdasarkan tahun pengajian, dan kemudian dipilih secara rawak menggunakan senarai nama pelajar. Maklumat mengenai sosio-demografi serta KAP telah dikumpulkan dengan menggunakan soal selidik berstruktur yang ditadbir sendiri dengan kadar. Pengetahuan diukur menggunakan skala tiga mata dengan jawapan sama ada "ya, tidak atau saya tidak tahu". Sikap diukur menggunakan Skala Likert lima mata "1 untuk sangat tidak setuju hingga 5 untuk sangat setuju". Amalan diukur menggunakan skala empat mata "1 kerana tidak pernah hingga 4 untuk semua masa". KAP dikategorikan sebagai baik jika skor terkumpul adalah ≥ 70%, dan sebaliknya dikategorikan sebagai lemah. Data dianalisis menggunakan IBM SPSS versi 22. Analisis deskriptif telah digunakan untuk pemboleh ubah sosio-demografi seperti frekuensi, ukuran kecenderungan memusat dan serakan. Untuk analisis bivariat,

ujian chi-square digunakan untuk menguji hubungan antara pemboleh ubah sosio-demografi dan KAP yang dikategorikan. Selain itu, ujian kolerasi pangkat Spearman telah digunakan untuk mengaitkan antara pemboleh ubah sosio-demografi dan skor KAP yang berterusan serta korelasi antara KAP. Pemboleh ubah sosio-demografi dengan hubungan yang signifikan, dan korelasi daripada analisis bivariat telah dimasukkan ke dalam model regresi dan dianalisis untuk menentukan peramal sosio-demografi KAP menggunakan regresi logistik dengan kaedah Nisbah Kemungkinan Hadapan.

Hasil kajian: Respons sebanyak 90.7%. Majoriti responden mempunyai pengetahuan yang rendah (59.1%), kira-kira 51.8% mempunyai sikap yang baik, dan majoriti (72.8%) mempunyai amalan yang baik. Peramal sosio-demografi untuk pengetahuan adalah umur (AOR = 1.164, 95% CI = 1,07-1,26), bidang pengajian (AOR = 4.64, 95% CI = 2,33-9,23) dan tahun pengajian (AOR = 2.27, 95% CI = 1,06-4,84). Peramal untuk sikap adalah umur (AOR = 1.09, 95% CI = 1,01-1,18), bidang pengajian (AOR = 1.95, 95% CI = 1,14-3,34) dan tahun pengajian (AOR = 1.99, 95% CI = 1,08-3,67). Bagi peramal untuk amalan adalah umur (AOR = 1.20 , 95 % CI = 1,12-1,28) dan tahun pengajian (AOR = 2.45 , 95 % CI = 1,11-5,40).

Kesimpulan: Kajian ini telah dapat meramal faktor sosio-demografi untuk KAP mengenai EVD di kalangan pelajar perubatan dan kejururawatan pada tahun latihan klinikal mereka. Dapatan kajian ini menunjukkan umur, tahun dan bidang pengajian adalah peramal sosio-demografi yang signifikan untuk KAP, yang menandakan perkaitannya. Dapatan kajian ini bermanfaat untuk meningkatkan KAP, dan seterusnya kualiti perkhidmatan penjagaan kesihatan melalui dasar-dasar kerajaan yang lebih baik.

Kata kunci: Pengetahuan, Sikap, Amalan, Ebola virus, Pelajar.

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Lawan G. Balami

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

ALT	Alanine amino transferase
AST	Aspertate amino transferase
CDC	Center for disease control
DRC	Democratic republic of Congo
EBV	Ebola virus
ECOWAS	Economy of West African states
EHF	Ebola hemorrhagic fever
ELISA	Enzyme linked immunosorbent assay
ETC	Ebola treatment center
EVD	Ebola virus disease
GP	Glyco protein
KAP	Knowledge Attitude Practice
MARV	Marburg Virus
MCQ	Multiple Choice Questions
MP	Malaria Parasite
NP	Nucleo protein
PPE	Personal protective equipment
RNA	Ribo nucleic acid
RT-PCR	Reverse transcriptase polymerase chain reaction
sGP	Smaller glycol protein
TNF	Tumor necrosis factor
UK	United Kingdom
UNIMAID	University of Maiduguri
UMTH	University of Maiduguri Teaching Hospital
WHO	World health organization

CHAPTER 1

INTRODUCTION

This chapter introduces the research topic, the reason behind its undertaking, its aims and objectives as well as the scope and direction it will be taking.

1.1 Background of the study

The Ebola Virus disease (EVD) is one of the deadliest diseases known to affect humans with a fatality ratio of up to 90% (Rajak, Jain, Singh, Sharma, & Dixit, 2015). It first appeared in Africa in the year 1976 (Matua, Van der Wal, & Locsin, 2015), since then this virus and other genetically similar species have been involved in over 25 outbreaks in both central and western parts of Africa resulting in over 12, 761 deaths and still counting (Lefebvre et al., 2014; WHO, 2015).

The recent 2014 outbreak in West Africa has been devastating both in terms of death rate and wide spread transmission. It has so far resulted in over 22, 495 cases and 8981 deaths out of which 495 were Health Care Workers (HCW) in a period of one year (Fasina et al., 2015). The virus is highly infectious and can be transmitted from one host to another in a short time through contact with infected bodily fluids and secretions of both living and dead people (Shears & O'Dempsey, 2015). Practices such as hunting of primates for bush meat consumption engaged by communities in endemic countries such as Nigeria (African Development Bank, 2015) have played a major role in initiating and amplifying the spread of the virus (Matua et al., 2015).

A study in Guinea of the 2014 EVD outbreak showed that HCW have a higher incidence rate of 104.5 per 10,000 compared to 3.3 per 10,000 for non-HCW (RR=42.2; 95% CI= 36.0-49.5) (CDC, 2015a). Similarly reports from Sierra Leone have also shown a 103-fold higher incidence rate of the EVD in HCW compared to the general public with doctors and nurses making up two thirds of HCW infected by the virus (CDC, 2015a, 2015c). Research done in Nigeria (Oguntimehin et al., 2015; Olowookere et al., 2015; Shittu, 2015), the UK (Fazekas, Fazekas, Moledina, Fazekas, & Karolyhazy, 2015), Columbia (Patiño-Barbosa et al., 2015), France (Tarantini et al., 2015) and Pakistan (Lakhani et al., 2002) have all reported the levels of comprehensive knowledge, attitude and practices regarding EVD to be poor among HCW.

Medical and nursing students are the health workers of the near future as well as role models in the society. They undergo clinical training and are exposed to infectious diseases under such poor conditions with very little knowledge and skills on how to avoid being infected; this places these young health workers at a significant risk. Therefore, this study aims to determine to sociodemographic predictors of KAP regarding EVD in this young population that is currently at a key phase. This can be

used to improve the current situation by aiding in modification of the present medical and nursing training curriculum and in formulating positive government policies against future outbreaks.

1.2 Problem statement

In the past few decades the incidence rate of the EVD has been on the rise (Shears & O'Dempsey, 2015). During the initial outbreak of 1976 in Sudan and Democratic Republic of Congo (DRC) the number of reported confirmed cases were totaling about 600 in both countries (Rajak et al., 2015; Shears & O'Dempsey, 2015). In the later parts of the 20th Century however, incidence rates began to decline to about 450 cases during the periods of 1979 – 1996 (Shears & O'Dempsey, 2015). This may have been attributed to implemented and sustained prevention and control measures as well as an increased familiarity with the illness (Gostin & Friedman, 2015). It would be thought that this marked the end of the era of another infectious disease however, this was far from true. Across the 21st century was a spike in the incidence rates of EVD cases like never seen before; from the year 2000 to 2009 the number of cases hit the one thousand mark for the first time in history across countries such as Uganda, Gabon, DRC and Sudan (Shears & O'Dempsey, 2015). Although the figure was alarming at that time, little was it known that this was a far cry from what was around the corner. In the year 2013 marked the initiation of what would be the largest outbreak of this deadly virus of all time (Sousa, 2014; Wong & Wong, 2015). This sequel continued across the year 2014 where it peaked at over 12, 761 cases (Lefebvre et al., 2014) and about 9,000 deaths (Ohimain, 2015) majorly across countries such as Nigeria, Guinea, Sierra Leone and Liberia (CDC, 2014b; WHO, 2015).

Recent studies have shown that HCW possess poor knowledge of key features of the EVD (Fazekas et al., 2015; Olowookere et al., 2015). This is a disease with neither a cure nor a vaccine (Ohimain, 2015), has recently recorded almost 9000 deaths in one year (CDC, 2014b) with a fatality ratio of up to 90% (Sousa, 2014). Additionally, poor practices due to deficient resources (WHO, 2014e) have also resulted in many HCW being infected with the virus (CDC, 2015a, 2015c) thus translating into poor attitudes like fear and increased risk perception (Tarantini et al., 2015) among this population as well as reluctance towards handling such patients (Rosenbaum, 2008) which has only further complicated the lingering problem.

Medical and nursing students during the course of their clinical training are exposed to infectious diseases whilst having little knowledge on how to adequately protect themselves and avoid the risk of infection (Nawab et al., 2015). Therefore, this makes it vital to determine the socio-demographic predictors of KAP regarding such deadly diseases as the EVD.

1.3 Significance of the study

Findings from this study will hope to contribute to evidence based medicine by determining socio-demographic predictors of KAP of medical and nursing students of UMTH. This can in-turn be used to improve the current situation by aiding in modification of the present medical and nursing training curriculum to compensate for areas where lies knowledge gaps. It can also help in formulating government policies and implementation of prevention strategies against future outbreaks.

1.4 Research Question

What are the socio-demographic predictors of knowledge, attitudes and practices regarding Ebola Virus disease among Medical and Nursing Students in University of Maiduguri Teaching Hospital Nigeria?

1.5 Study Objectives

1.5.1 General Objectives

To determine the socio-demographic predictors of KAP regarding Ebola virus disease among Medical and Nursing students of UMTH, Nigeria.

1.5.2 Specific Objectives

The specific objectives of this study are:

i) To determine the distribution of respondents according to socio-demographic characteristics (age, gender, field of study, year of study, religion and marital status).
ii) To determine the level of knowledge of respondents regarding key features of EVD.
iii) To determine the level of attitude of respondents regarding EVD.
iv) To determine the level of practices of respondents regarding EVD.
v) To determine the association between socio-demographic variables (gender, age, field of study, year of study, ethnicity, religion, marital status) and KAP of respondents.
vi) To determine the relationship between knowledge, attitude and practice of respondents.
vii) To determine the socio-demographic predicting factors for KAP of respondents.

1.6 Research hypothesis

This research is based on the following hypothesis:

- H_1: There is a significant association between socio-demographic variables and knowledge of medical and nursing students of UMTH.
- H_2: There is a significant association between socio-demographic variables and attitude of medical and nursing students of UMTH.
- H_3: There is a significant association between socio-demographic variables and practice of medical and nursing students of UMTH.
- H_4: There is a significant association between knowledge, attitude and practice of medical and nursing students of UMTH.

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