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ASSESSMENT OF KNOWLEDGE OF HYPERTENSION PREVENTION AMONG ACADEMIC STAFF OF FEDERAL UNIVERSITIES IN THE NORTHERN STATES OF NIGERIA

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ABSTRACT
The purpose of this study was to assess knowledge of hypertension prevention among academic staff of Federal Universities in the Northern States of Nigeria. To achieve this purpose, ex-post facto research design was used, population of the study comprised of academic staff of Federal Universities in the nineteen (19) Northern States and FCT of Nigeria, estimated at twenty thousand, two hundred and fifteen (20,215). 740 respondents were drawn from six selected federal universities in the Northern states of Nigeria; participants were selected using multi-stage sampling technique. A close–ended questionnaire was used to obtain responses from the participants. 740 copies of the questionnaire were distributed and 735 (99.5%) copies of the questionnaire were duly filled and returned. Descriptive statistics of frequencies, percentages, means and standard deviation were used to describe the demographic characteristics of the respondents and answer the research question respectively. The formulated hypothesis was tested using one sample t-test, at 0.05 level of significance. The finding showed that: academic staff of federal universities in the Northern states of Nigeria have significant knowledge of hypertension prevention (P = 0.02). Thus, it was concluded that knowledge of hypertension prevention exists among academic staff of federal universities in the Northern states of Nigeria. Based on the conclusion drawn in the study, the researchers recommend that Health educators should intensify efforts towards ensuring that knowledge and attitude of academic staff and the general populace about hypertension prevention is sustained.

Keywords: knowledge, hypertension, hypertension prevention, academic staff, federal universities, northern states.

INTRODUCTION
Hypertension remains a major global public health challenge that has been identified as the leading risk factor for cardiovascular morbidity and mortality. In medical terms, hypertension is a blood pressure of 140/90 mmHg (millimeters of mercury) or more, based on at least two readings on separate occasions (Mlunde, 2017). The term is used to mean the same medical condition with High Blood Pressure (HBP). Primary hypertension is the most common type

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and over 90% of hypertension cases fall within this category (Mlunde, 2017). While primary hypertension is deep-rooted in genetic, socioeconomic and environmental factors, secondary hypertension may be due to renal, endocrine and cardiovascular causes (World Health Organization, 2017). Although hypertension is asymptomatic, it is usually attributed to severe health problems such as congestive heart failure, cardiovascular disease, renal failure, stroke, cognitive decline, dementia and even death (Hoffman, 2016).

Hypertension increases the hardening of the arteries, thus, predisposing individuals to heart diseases, peripheral vascular diseases, stroke, heart failure and kidney failure. Hypertension is the commonest non-communicable disease in the world and all races are affected. Concerning the prevalence of hypertension, Ahmed *et al* (2011), explained that it is on the increase now in developing countries with adoption of western lifestyle and stress of urbanization, both of which are expected to increase morbidity associated with unhealthy lifestyles. Iyalomhe and Iyalomhe (2010), was of the opinion that hypertension produces disruptions in health, disability and death in the adult population worldwide. Hypertension causes one in every eight deaths worldwide, making it the third leading killer disease in the world. About one billion adults world over, had hypertension in the year 2017 and the number is expected to rise to 1.56 billion in the year 2025 if positive intervention programmes are not made (Ejike, et al 2012).

In Nigeria, hypertension is the commonest non-communicable disease with over 4.3 million Nigerians above the age of fifteen years classified as being hypertensive (Adeloye, *et al* 2015). Ogedegbe (2014), reported that Northern Nigeria like other sub regions in the country is undergoing a rapid epidemiological transition which has led to the last decade seeing a shift in the major causes of death from solely infectious diseases to a combination of communicable and non-communicable diseases (NCDs). The prevalence of hypertension in Nigeria may form a substantial proportion of the total burden in Africa because of the large population of the country currently estimated to be over 170 million (Adeloye, *et al* 2015). With an increasing

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adult population and changing lifestyle of Nigerians, the burden of hypertension may continue to increase as time unfolds (Kayima, *et al* 2013).

Despite all that is known about the adverse health consequences of high blood pressure (BP), it's still poorly prevented among academic staff of universities in Nigeria (Bunker, 2012).The Eighth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC-8), WHO–ISH and the Nigerian Hypertension Society (NHS) guideline for the prevention of hypertension recommends lifestyle modification for all individuals with hypertension or pre- hypertension (Busari, *et al* 2010). Individual's knowledge and awareness of blood pressure play important roles in the ability to successfully control hypertension (Ejike, *et al* 2012).

Knowledge of hypertension is an important prerequisite for an individual to implement desirable behavioural practices towards its prevention. Boulle (2013) stated that patients who are informed about their condition appear to recover earlier than those without knowledge. Increasing knowledge of hypertension is the main focus of primary prevention of cardiovascular diseases. Akinkugbe (2010) reported that individuals' knowledge on hypertension and its prevention as well as physician counselling on a healthy lifestyle and self-care have an independent effect on compliance with the recommended lifestyle behaviours. Meanwhile, factors associated with poor control of hypertension are modifiable through tailored, culturally appropriate patient education and treatment strategies (Dennison, *et al* 2017). Lack of such knowledge will lead to aggravated health problems. Adults should therefore, possess adequate knowledge of risk factors of hypertension in order to prevent the disease.

Regrettably, the researchers observed that most academic staff of federal universities experience different challenges due to ignorance of risk factors and preventive measures of hypertension.The inability to adequately prevent hypertension could be attributed to inadequate

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knowledge of signs and symptoms (such as age, severe headaches, fatigue, body weakness, dizziness, blurred vision, palpitations, inability to effectively move some parts of the body especially the limbs, chest pain), The prevalence of Hypertension in Nigeria forms the substantial burden in Africa because of the large population of the country. In light of the above, the researchers were prompted to conduct this study with the main purpose of assessing the knowledge of hypertension prevention among academic staff of federal universities in the Northern states of Nigeria.

Research question

What is the knowledge of hypertension prevention among academic staff of Federal Universities in the Northern states of Nigeria?

Hypothesis

Academic Staff of Federal Universities in Northern states of Nigeria are not significantly knowledgeable about hypertension prevention.

Methodology

An ex-post facto research design was used for this study. Ex-post facto means after- the -fact research in which the investigation starts after the fact has occurred without interference from the researcher. In ex-post facto research design, experimentation is not feasible. The researcher identifies extent that already occurs or conditions that already are present and then collects data or information to investigate possible relationship between factors and subsequent characteristics of behaviour (Salkind, 2010).

The population of the study comprised of twenty thousand, two hundred and fifteen (20,215) academic staff of the twenty Federal Universities in the Northern Nigeria.

Table 1: Population Distribution of Academic staff

S/N	Name of Institution	Academics Staff
1	Ahmadu Bello University, Zaria.	2,731
2	Abubakar Tafawa Belewa, Bauchi	1,129
3	Bayero University Kano	1,386

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4	Federal University, Birnin Kebbi	769
5	Federal University, Dutse	792
6	Federal University, Dutsin-Ma	801
7	Federal University, Gashua	823
8	Federal University, Gusau	791
9	Federal University, Lafia	630
10	Federal University, Lokoja	740
11	Federal University, Kashere	587
12	Federal University Of Technology, Yola	795
13	Federal University, Wukari	692
14	University of Abuja	1,129
15	University of Agriculture Makurdi	1,142
16	University of Ilorin	1,440
17	University of Jos	1,083
18	University of Maiduguri	1,725
19	Federal University of Technology, Minna	703
20	Usmanu Danfodio University Sokoto	786
	Total	**20,215**

Source: Establishment and Human Resources Dept. of the Universities/ Bursary Department, 2019

The sample for this study comprised of 740 academic staff which was drawn from the population of 20,215 in the 20 Federal Universities of the Northern States of Nigeria.

Research Advisor (2006) stressed that for a population of more than 20,215, the sample size for the study should be 370 at 0.05 level of significance, 5% margin of error and 95% confidence interval. Therefore, for the purpose of generalization of the findings of this study, sample size for the study is multiplied by two (that is, 370 × 2 = 740) hence; seven hundred and forty (740) respondents from the twenty (20) selected Federal Universities in the Northern states of Nigeria were used for this study. In order to draw the desired sample, multi-stage sampling technique was employed. Multi-stage sampling technique involves more than two sampling techniques and for this study the following multi-stage sampling techniques were used:

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Stage I: Stratified sampling technique was used to stratify the Northern states of Nigeria into the already existing three geo-political zones for all higher institutions as follows: North-East zone, North-Central zone and North-West zone.

Stage II: Simple random sampling technique was used to select two (2) Federal Universities from each of the geo-political zones, thus, a total of six (6) Federal Universities were sampled for the purpose of this study.

Stage III: Proportionate sampling technique was used to obtain the number of respondents needed in each Federal University based on the number of academic staff and their gender. The choice of proportionate sampling technique gave an equal opportunity to all academic staff within the six (6) selected universities.

Stage IV: The allocated number of respondents for each university was achieved through purposive sampling procedure. In this case, the researchers administered a copy of the questionnaire to any academic staff present in the premises of the university until the required copies of the questionnaire were distributed.

Table 2: Proportionately Sampled Respondents per Federal University

Zone	Name of University	Male Academic Staff	Sample Size Selected	Female Academic Staff	Sample Size Selected	Total Sample Size Selected
North-Central	Uni. Ilorin	873	106	567	69	175
	Uni. Jos	711	86	372	45	131
North-East	Fed. Uni. Gashua	621	75	202	24	99
	Abubakar Tafawa Belewa Uni.	412	50	258	31	81
North-West	Bayero Uni. Kano	852	103	462	56	159
	Usmanu Danfodio Uni. Sokoto	541	65	245	30	95
Total	**6**	**4010**	**485**	**2106**	**255**	**740**

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The instrument used for data collection was a researcher-developed close-ended questionnaire titled "Assessment of Knowledge of hypertension prevention among academic Staff of Federal Universities in the Northern states of Nigeria". The questionnaire consisted of two sections. Section A consists of four (4) items on demographic characteristics of the respondents. Section B consists of ten (10) items on knowledge of hypertension prevention among academic staff of Federal Universities in Northern states of Nigeria.

Modified four-point Likert scale was used for sections B to D as follows:

Strongly agree (SA) = 4,
Agree (A) = 3,
Disagree (D) = 2,
Strongly disagree (SD) =1.

Therefore, any mean score of 2.5 and above was accepted or positive and any mean score that was below 2.5 will not be acceptable or regarded negative. In order to establish the face and content validity of the instrument for this study, the researchers sent five copies of the drafted of the researcher-structured questionnaire were submitted to five lecturers in the Department of Human Kinetics and Health Education and Nursing Science for vetting. The jurors vetted and assessed the instrument; their corrections were taken into consideration and reflected in the final clean copies that were distributed to the respondents.

An introductory letter was obtained from the Department of Human Kinetics and Health Education. The letter was used by the researcher as a tool for obtaining permission for data collection in the Federal Universities. Six research assistants (One research assistant for each of the sampled universities) were instructed by the researcher on procedures for data collection. The focus of the research was discussed with the research assistants so that they were able to explain clearly to the respondents how they were expected to fill the copies of questionnaire distributed to them. To collect data for this study, a total of seven hundred and forty (740) copies of the questionnaire were distributed to academic staff of the Federal Universities in the

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six (6) states/sampled Federal Universities using purposive sampling technique. In each of the Federal University, the researcher and one research assistant administered the questionnaire to the respondents as they embarked on office to office visitation. The researchers and assistant sought for consent or willingness to fill the copies of the questionnaire. Upon obtaining consent, the researcher administered the questionnaire. This procedure continued until the copies of questionnaire meant for that particular university have been administered. The described procedure was used by the researcher and her research assistants until all the sampled Federal Universities have been visited and copies of the questionnaire for respondents per sampled Federal University have been distributed using accidental sampling procedure. All copies of questionnaire distributed were retrieved for analyses. The procedure for data collection took six (6) weeks.

Descriptive statistics of frequencies, percentages, mean and standard deviation were used to describe the demographic information of the respondents and answered the research questions on knowledge, attitude and practice of hypertension prevention among academic staff in selected Federal Universities in Northern Nigeria respectively. Inferential statistics of one sample t-test was used to test the formulated null hypotheses.

Results

Research Question: What is the knowledge of hypertension prevention among academic staff of Federal Universities in the Northern States of Nigeria?

Table 3: Mean scores of responses on knowledge of hypertension prevention among academic staff of Federal Universities in the Northern States of Nigeria.

S/NO	Statement	Mean	SD
1	I prefer to have a job at a workplace free from stress that predisposes me to hypertension	2.80	1.01
2	I am aware that is not healthy to smoking tobacco as it increases the risk of hypertension	2.55	1.05
3	Tobacco smoking increases blood pressure	3.14	0.81
4	I know that hypertension can be controlled through regular blood pressure checks	3.34	0.84

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5	The age of an individual can predispose to hypertension	3.02	0.95
6	Early reporting of signs and symptoms can reduce the severity of the disease	2.98	1.07
7	Foods high in fat/sodium dietary substance can cause hypertension	3.39	0.81
8	Engaging in exercises regularly can lower blood pressure	2.51	1.18
9	I am aware that reduced intake of fruits and vegetable can increase blood pressure	3.00	1.01
10	I know that obesity can increase the risk of hypertension	3.09	0.95
	Aggregate mean score	**2.98**	**0.97**

Table 3 shows that the respondents have the knowledge of hypertension prevention as all of the mean scores of responses were above 2.50. The most desired knowledge about hypertension has to do with prevention methods which was influenced by the knowledge of the respondents as reflected in items 1, 4, 5, 6, 8 and 10 in which they are aware by variables; free from stress, controlled regular blood pressure, predispose to hypertension, reporting of signs and symptoms, regular exercise, and risk of hypertension respectively. However, the knowledge of hypertension has enabled the academic staff of Federal Universities in the Northern states of Nigeria to avoid food and substances that can cause the disease. This is reflected in items 2, 3, 7, and 9 in which smoking tobacco increase the risk of hypertension, tobacco smoking increases blood pressure, foods high in fat/sodium cause hypertension and reduced intake of fruits and vegetable can increase blood pressure respectively. The aggregate mean score of 2.98 and SD of 1.07 indicated that academic staff of federal universities in Northern states of Nigeria are knowledgeable of hypertension prevention.

Hypothesis: Academic Staff of Federal Universities in Northern states of Nigeria are not significantly knowledgeable about hypertension prevention.

Table 4: One sample t-test analysis on Knowledge of academic staff of federal universities in the Northern states of Nigeria about hypertension prevention.

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Variable	Mean	Std.	Df	t-value	P-value.
Knowledge	2.982	0.967	734	32.123	0.02

t (9) = 1.833. P< 0.05

A careful observation of Table 4 revealed that the respondents were knowledgeable about hypertension prevention. This is because the one-sample t-test calculated value is 32.123 greater than the t-critical is 1.833 at degree of freedom 734 with probability value 0.02 is less than 0.05 level of significance. Thus, this result did not support the sub-hypothesis (null) which stated that "Academic Staff of Federal Universities in Northern states of Nigeria are not significantly knowledgeable about hypertension prevention", therefore the hypothesis was rejected.

Discussion

The primary purpose of this study was to assess the knowledge of hypertension prevention among academic staff of Federal Universities in the Northern states of Nigeria. Finding of this study revealed academic staff of federal universities in the Northern states of Nigeria are knowledgeable about hypertension prevention with a p-value of 0.02.The finding of this study agree with Anowie and Darkwa (2015), who found that most academic staffin university of Lagos knew that cardiovascular diseases could occur as a result of excess work load in office, it was observed that majority of the participants mentioned that the condition had no signs and symptoms, while the remaining correctly pointed out that hypertension had several signs and symptoms. Some of the signs and symptoms identified included headache and dizziness, fainting and stroke. The main signs and symptoms of the condition specifically mentioned by the participants were headaches or dizziness and stroke while minimal knowledge on the consequences of untreated hypertension was shown (Anowie & Darkwa 2015).

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The finding of this study is also supported by Jimoh (2010), who acknowledged that knowledge is a critical determinant of behaviour change and lifestyle practices regarding hypertension. The social, economic and environmental factors are also important in hypertension control. Adequate knowledge through health education and health promotion heavily influences lifestyles change regarding hypertension, which means that people should adapt to behaviour or lifestyles that help them maintain an optimal health status. Also, a lack of knowledge could result in significant patient anxiety and inappropriate use of medical services. Hypertension if left unchecked especially in the rural area where the population is mostly uneducated, increases its incidence, cases of stroke, heart failure, glaucoma and renal failure (Osuala Eunice, 2017).

Almas, *et al* (2012), found that specific knowledge about hypertension prevention among university staff in Belgium is often required to help university staff to deal with it and stressed that education in general may not be enough to achieve that. The analysis was carried out at α-level of 0.05 and only participants' level of education significantly influenced their knowledge (P= 0.02), this implies that participants who had high level of education found to have adequate knowledge about hypertension prevention than those without high educational background.

The finding of this study is in contrary with Odedosu, *et al* (2012) whose findings revealed that lack of knowledge about hypertension prevention among academic staff in university of Abuja Nigeria, inability to engage in healthy lifestyles, health beliefs and side effects of certain medications to be major barriers that impede management of the condition among hypertensive patients.

Conclusion

Based on the finding of this study, the following conclusion was drawn;

Knowledge of hypertension prevention exists among academic staff of federal universities in Northern states of Nigeria.

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Recommendations.

Health educators should double effort in ensuring that knowledge of Universities academic staff and the general populace about hypertension prevention is sustained by promoting the importance of activities such as exercise, rest and relaxation.

Activities that can as well improve people's knowledge such as health intervention programmes (video play, radio jingles and print media intervention) should be made available through health education for federal universities academic staff, in order to improved knowledge of hypertension prevention.

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