ORIGINAL ARTICLE

Prevalence and Correlates for Hypertension among Full-Time UNZA Academic Staff

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ABSTRACT

Objectives: To determine the prevalence and factors associated with hypertension among full-time UNZA academic staff.

Design: Cross-sectional study.

Main outcome measure: Raised blood pressure.

Results: A total of 100 full time employed University of Zambia staff was enrolled into the study of which 25% were females. Altogether 22% of the participants smoked cigarettes, and 63% of them consumed alcohol. Overall, 40% of the participants were hypertensive. Age was significantly associated with hypertension. On each birthday, participants were 16% (OR=1.16, 95% CI [1.09, 1.23]) more likely to be hypertensive.

Conclusions: The prevalence of hypertension was high and interventions must be put in place to curtail this high rate of hypertension among academic staff of the University of Zambia.

INTRODUCTION

Hypertension is an important public health problem worldwide and it is the most widely recognized modifiable risk factor for cardiovascular disease (CVD), cerebrovascular disease (stroke) and end-stage renal disease [1]. Hypertension is the third 'killer', according to the World Health Organization, accounting for one in every eight deaths worldwide. It increases the risk of stroke, myocardial infarction, congestive heart failure, sudden cardiac death, peripheral vascular disease, and

renal insufficiency. Premature mortality from cardiovascular diseases could be prevented, to a considerable extent, by the effective control of hypertension, a major risk factor for this group of diseases [2].

While prevalence and mortality due to CVD is rapidly declining in most developed countries, it is, in sharp contrast, rising in the developing countries [3]. Most of the literature on the prevalence and correlates for hypertension is from developed countries. However, in a study conducted in the general population in Lusaka district [4] the prevalence of hypertension was 34.8% (38.0% among males and 33.3% among females). The prevalence of hypertension may be higher among the academicians at the University of Zambia who are more affluent than the general population in Lusaka. This is contrary to the suggestion by Ezzati el al [5] who stated that what were commonly regarded as diseases of the rich can no longer be categorized as low prevalence conditions in developing countries. We, therefore, set out to conduct a study to determine the prevalence and correlates for hypertension among academicians in the University of Zambia.

METHODS

This was a cross sectional study conducted at the two campuses of the University of Zambia, namely: Great East Rood Campus and the Ridgeway Campus in the Capital city of Zambia- Lusaka. Participants were included in the study if they were fulltime UNZA academic staff drawn from different schools within the University of Zambia.

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Sampling and sample size

Cluster sampling was used in sampling the participants. Clusters were represented by different schools and samples were drawn from different clusters of the University of Zambia. The University of Zambia has nine Schools in total. The school of Education was divided into two because it has the largest number of full-time lecturers, bringing the number of clusters to ten i.e. School of law, Veterinary Medicine, Natural sciences, Engineering, Mines, Agricultural Science, Medicine (Human), Humanities and Social Sciences, Education 1 and Education 2).

From each of the ten clusters (Schools), ten participants were selected using simple random sampling procedure. The sampling frame was the number of offices for full-time lecturers in each cluster. The sample size was determined using the standard formula; Sample size = $\underline{Z^2 \, x}$ $\underline{P \, x \, (1 - P)}/C^2$; where: Z = 1.96, the factor from the normal distribution. P= Estimated period prevalence. (Percentage picking a choice, expressed as a decimal) and C= Confidence Interval expressed as a decimal = 5 percent. The study was willing to tolerate an absolute sampling error of up to 5 percent. The expected frequency under the study was 7% (UNZA Clinic, 2008 Quarterly reports). The sample size was estimated at 100.

After participants had signed the consent form, a questionnaire was used to collect data and an automatic BP machine was used to measure their blood pressure. The weight and height were also measured using standing scale and height measure respectively. Participants included both those who knew their hypertension status and those who did not know.

The variables that were obtained from the participants using a questionnaire included alcohol consumption, smoking, stress (work overload), physical inactivity, age, height, weight and blood pressure.

Automatic Blood pressure machines were used to avoid certain human errors. Clients were seated in a chair, with their backs supported and their right arm bared at the level of the heart. Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DSP) were measured after the subject had rested for 10 minutes. Measurements were taken thrice (every 2 minutes) and the mean was recorded for all

cases. Confirmation of the blood pressure reading was done for participants who were found to be hypertensive for the first time. Confirmation was based on the initial visit, plus two follow-up visits with two blood pressure readings at each visit. Those found to be hypertensive after confirmation, were referred to UNZA clinic for thorough medical history, physical examinations, routine laboratory tests and other diagnostic procedures.

The analysis was performed using the statistical software package for social scientists (SPSS) 15.0 for windows. Questionnaires were given identification numbers serially from 001 to 100. Both open ended and closed ended questions were coded by assigning numbers to response categories. The coded questions were then entered into the computer. Logistic regression analysis was conducted to detect and quantify the association between exposure factors and the outcome.

Definition of hypertension

We defined hypertension as systolic blood pressure of 140 mm Hg or more and/or diastolic blood pressure of 90 mm Hg or more. Confirmation of high blood pressure was based on the initial visit, plus two follow-up visits with at least two blood pressure readings at each visit. Participants who had been on treatment for hypertension and those who already knew that they had hypertension but were not on treatment for some reasons were also classified as being hypertensive.

RESULTS

A total of 100 participants took part in the survey of which 25% were females. The mean age was 43 (SD 9.2) years. Most (88%) of the participants were married. While 22% of the participants smoked cigarettes, 63% of them consumed alcohol. Overall, 40% of the participants were hypertensive. These results are shown in Table 1 on the next page.

In bivariate analyses, stress (OR=0.65, 95% CI [0.43, 0.98]) and age (OR=1.16, 95% CI [1.09, 1.23]) were significantly associated with hypertension (Table 2).

In multivariate analysis, age was the only factor that was significantly associated with hypertension. On each birthday, participants were 16% (95% CI [1.09, 1.23]) more likely to be hypertension.

Table 1. Description of the sample

Factor	Mean (SD)
Age years	43.1 (9.2)
	n (%)
Sex	
Male	75 (75)
Female	25 (25)
Marital status	
Married	88 (88)
Not married	12 (12)
Smoked cigarettes	
Yes	22 (22)
No	78 (78)
Consumed alcohol	
Yes	63 (63)
No	37 (37)
Hyp ertensive	
Yes	40 (40)
No	60 (60)

Table 2. Factors associated with hypertension.

	Hypertension		
	Yes	No	
Factor	Mean (SD)	Mean (SD)	OR (95% CI)
Age years	49 (7.6)	39 (8.2)	1.16 (1.09, 1.23)
Body mass index	26 (3.3)	26 (3.7)	0.97 (0.86, 1.08)
	n (%)	n (%)	
Sex			
Male	30 (75)	45 (75)	1.00 (0.63, 1.59)
Female	10 (25)	15 (25)	1
Marital status			
Married	37 (93)	51 (85)	1.48 (0.74, 2.93)
Not married	3 (7)	9 (15)	1
Consumed alcohol			
Yes	25 (63)	38 (63)	0.98 (0.65, 1.49)
No	15 (37)	22 (37)	1
Engaged in physical activity			
Yes	18 (30)	17 (43)	1.31 (0.87, 1.99)
No	42 (70)	23 (57)	1
Smoked cigarettes			
Yes	5 (13)	17 (28)	0.60 (0.35, 1.04)
No	35 (87)	43 (72)	1
Stressed			
Yes	19 (48)	41 (68)	0.65 (0.43, 0.98)
No	21 (52)	19 (32)	1

DISCUSSION

The prevalence of hypertension among full-time UNZA lecturers was 40%. This finding shows that hypertension is very prevalent among full-time UNZA academic staff. We found no other similar studies whose results we can compare ours with. However, in a study conducted in the general population in Lusaka district, Zambia, the prevalence of hypertension (34.8%) was lower than what we observed in our population.

In our study, older age was significantly associated with hypertension. This result is similar to what Goma et al[4] found in Lusaka district that persons aged 45 years or older were more likely to be hypertensive compared to persons aged less than 35 years. In this same study, alcohol consumption and male gender were in addition significantly associated with hypertension. We found no significant association between alcohol consumption and sex on one hand and hypertension on the other hand.

The study had a number of limitations and some of these include the misreporting, as the data was collected through self-completion of the questionnaire, it is possible to have deliberate misreporting. There may also be recall bias; in that participants may fail to recall whether or not they had a previous diagnosis of hypertension. Assessment of smoking status was not validated by biomarkers, such as nicotine or cotinine levels or exhaled carbon monoxide; it is difficult to estimate the extent of any reporting biases that may have occurred. Only a quarter of the participants were females, and the study may not have been powered enough to compare the exposure factors between sexes. It is not possible to relate the observed associations to causality since in a cross sectional study both the exposure and the outcomes have already occurred.

In conclusion, we found a high proportion of lecturers with hypertension. Interventions should be designed to reduce this high prevalence of hypertension among UNZA lecturers.

Finally to the participants, we thank you for your cooperation.

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