KNOWLEDGE AND PRACTICE OF SELECTED BANKERS AND DRIVERS IN LAGOS STATE ABOUT HYPERTENSION

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ABSTRACT

Hypertension is an important risk factor for cardiovascular diseases. Its impact remains a profound public health problem, and adequate knowledge about the disease remains poor in many developing countries. Studies show variable hypertension prevalence among employees in different work environments. The aim of the study was to determine respondents' knowledge about hypertension, document their practices and compare blood pressure readings between two workforce groups. This was a descriptive study about hypertension among bankers and drivers. The study involved 200 bankers and Bus-Rapid Transit (BRT) drivers in Lagos. Approval for the study was obtained from each organization. After informed consent was obtained, semi-structured questionnaires developed for the study were administered to respondents while blood pressure was determined using a digital sphygmomanometer. Data collated were analyzed using descriptive and inferential statistics with IBM SPSS version 20.0. Results were considered statistically significant if $p \leq 0.05$. A response rate of 63% was recorded for the study. Most of the respondents (92.0 %) were aware of hypertension and knowledge of risk factors for hypertension by respondents was good (>50.0 %). About 30% of the respondents believed that hypertension is curable with 84% and 50% believing it can be managed with drugs and prayers, respectively. Knowledge and practice about hypertension were good at 81.5% and 58.5% respectively. Amiloride, 5mg plus hydroclorthiazide, 50mg (Moduretic®) and Aspirin, 75mg (Vasoprin®) were the two most common drugs known by hypertensive patients. About 8% of the respondents were known hypertensives, while the blood pressure (BP) determination showed about 16% in the hypertensive range. The study revealed that respondents' knowledge and practice with respect to hypertension is good but still recommends sensitization of workers through public enlightenment/workplace educational campaigns to improve on deficient areas. In addition, systems should be put in place for regular BP checks for workers.
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KEYWORDS: Hypertension, Workforce, Bankers, Drivers, Knowledge and Practice, Antihypertensive drugs.

INTRODUCTION

Hypertension, a silent killer, is a common disorder and an important risk factor for cardiovascular diseases [1 - 3]. It remains the commonest non-communicable disease in Nigeria with a prevalence of about 20-25 per cent in adult Nigerians [4]. The overall prevalence of hypertension in Nigeria ranges from 8% - 46.4% depending on the study target population, type of measurement and cut-off value used for defining hypertension [5, 6].

Hypertension is defined as persistent elevation of systolic blood pressure of 140 mmHg or greater and/or diastolic blood pressure of 90 mmHg or greater (WHO, 2013) [7, 8]. In a study carried out by the International Collaborative Study of Hypertension in Blacks (ICSHIB), the age-adjusted prevalence of hypertension in Nigeria was 14.5% [9]. Kearney and colleagues observed that the estimated total number of adults with hypertension in 2000 was 957 to 987 million, of which 625 to 654 million were in economically developing countries

[10]. This number is predicted to increase to 216 million by the year 2030 [11, 12].

Hypertension is associated with an increased incidence of cardiovascular mortality due to suboptimal blood pressure control [13]. Despite ongoing research on hypertension and the variety of antihypertensive medications, adherence still remains a major issue resulting in uncontrolled hypertension [14, 15]. Uncontrolled hypertension is associated with serious end organ damage such as heart disease, stroke, blindness and renal disease [16]. Fifty-four per cent of strokes and 47% of cardiac deaths are attributed to sub-optimal blood pressure control [17]. Its impact remains a profound public health problem and adequate knowledge about it remains poor in many developing countries [1].

Hypertension is the most common cause of cardiovascular disease in the African continent [18]. It is a disorder to which both environmental and genetic factors contribute [4]. The prevalence of hypertension increases with age practically in all age groups and sub-populations except in a few pockets of population who are said to be living very close to nature. It is also believed to be more prevalent in Blacks than in White people. This difference has been blamed on factors of heredity, salt intake and greater environmental stress [19]. The work environment can be described as an aggregate for all living and working conditions that may influence the life and health of the workers [20]. Hypertension has also been shown to be more common in both extremes of the socioeconomic class [19]. Studies show variable hypertension prevalence values among employees in different work environments [21 - 23].

Although hypertension is a common disease, knowledge of the disease condition and its risk factors are yet to be fully understood by the Nigerian labour force. The low level of awareness of hypertension is more than a national phenomenon [1, 5, 16, 24] and is probably linked to the overall poor level of education [9]. Hence, there is need to determine the level of awareness in the Nigerian work force. The aim of the study was to determine the knowledge of members of two workforce groups about hypertension, document their practices and compare blood pressure status as a baseline for studies involving other workforce groups.

METHODS

Study location and population
The study was carried out in Lagos State, Nigeria. Although it is the smallest state in Nigeria by land mass, it has the highest population, which is over five per cent of the national estimate. The state has a population of 21 million out of a national estimate of 150 million and is expected to grow by 3% in the next five years [25, 26]. It is the largest cosmopolitan city in Nigeria with a rich and diverse culture of many tribes of different states. Lagos is Nigeria's financial, commercial and industrial nerve centre with over 2,000 manufacturing industries and over 200 financial institutions (Banks, Insurance companies etc) including the nation's premier stock exchange, the Nigeria Stock Exchange [27].

The population utilized for this study were two different work force groups - workers in the banking sector (specifically Bankers defined as someone who conducts the business of banking) and Drivers with the Lagos state Bus Rapid Transit services (BRT). These groups were chosen to be as diverse as possible in terms of educational attainment, age grouping and workplace environment. As explained prior, this is to serve as baseline for other work force groups to be surveyed.

Study design
This study was a descriptive cross-sectional study designed to determine the knowledge and practices of bankers and drivers in relation to their blood pressure control.

Data collection tool
A semi-structured 30-item questionnaire was designed to collect relevant data for this study. The questionnaire had three sections: Section A: Sociodemographic data; Section B: Respondents' knowledge about hypertension, and Section C: Respondents personal blood pressure (BP) history and hypertension risk. The BP of those that consented was recorded in a separate database.

Sampling method and administration
A sample of 100 bankers and 100 drivers from the Lagos State Bus Rapid Transit services (BRT) were selected for this study. The questionnaires were self- and/or interviewer administered to the consenting workers in the two sectors. After the questionnaires were filled, additional consent of the respondents was obtained to check their blood pressures After 5 minutes of rest in the seated position, the blood pressure of each consenting respondent was taken using an automatic sphygmomanometer. The systolic and diastolic blood pressures were recorded separately. A patient was adjudged to

be in the hypertensive range if s/he had BP ≥ 140/90 mmHg (JNC 8 Guidelines).

Data analysis
Data collated were analyzed using descriptive and inferential statistics with IBM SPSS version 20.0. Respondents awareness about hypertension was rated as good or poor, if they responded 'Yes' or 'No' to the question on if they have heard about hypertension. Respondents knowledge about hypertension was rated good or poor based on their responses to the questions on definition (sustained increase in blood pressure = good; others = poor), population affected by hypertension (all age groups = good; all other responses = poor), complications (at least 3 options – good; less than 3 options – poor), risk factors to hypertension (at least 5 options = good; less than 5 options = poor), knowledge on if hypertension is curable (not curable but controllable = good; all others = poor) and how it can be managed (drugs and reduced salt intake = good; all other options – poor). Respondents management of hypertension was rated good or poor based on responses to their knowledge of their hypertension status and how often they check their blood pressure. All good responses were given a score of 3 while poor responses were given a score of 1.

Ethical considerations
Approval to conduct the study was obtained from the management of each bank selected and from the Lagos State Bus Rapid Transit Services. Informed consent was obtained from each respondent before questionnaire administration and before blood pressure determinations were done. The respondents were assured of anonymity and their personal details were not collected deliberately.

RESULTS
Overall, 125 questionnaires were completely filled and returned, representing a participation rate of 62.5% (125/200). For the two workforce groups, this represented a participation rate of 74% and 51% for the Bankers and Drivers, respectively.

Section 1: Sociodemographic Data of the Respondents
More males (68.8%) than females took part in the study. About 44% of the respondents had attained a first degree in a higher institution while 28.8% had only attained secondary school education (Table 1).

Section 2: Respondents Knowledge and Awareness about Hypertension
Over 90% of the respondents were aware of hypertension with about 64% hearing the term from the media while 48% heard of it from a health worker. Most of the respondents (73.6%) thought hypertension is a common problem (amongst all age groups) in Nigeria. About 78% of the respondents could define the term 'hypertension' and about 82% have heard of the risk factors for hypertension (Table 2).

The main risk factors for hypertension known by the respondents were stress (about 77%), obesity (58%) and high salt intake (54%) (Figure 1).

Section 3: Respondents Knowledge of Management and Practice about hypertension
About half of the respondents believed that hypertension is not curable while majority believed that it can be managed with drugs (84%) and reduction in salt intake (62%). About 8% of the respondents had never checked their blood pressure while 92% of the respondents had not been previously diagnosed for hypertension (Table 3).

Only 12.8% of the respondents knew some drugs used in treatment of hypertension. Moduretic® (amiloride, 5mg plus hydroclorothiazide, 50mg) and Vasoprin® (Aspirin, 75mg) were the most commonly known antihypertensive agents (Figure 2).

About 14% of the respondents thought they were at risk of developing hypertension. The result further shows that 21.6% believed they needed to reduce their weight while 10.4% had actually been advised to reduce their weight; 40% regularly exercise while 6.4% never exercise; 20% consume alcohol and 8.8% of the respondents' smoke (Table 4).

The knowledge and practice of the respondents is largely good with knowledge seeming to be better than practice (Table 5). The drivers also presented with better results than the bankers. A statistically significant difference ($p < 0.05$) exists in the knowledge and practice ratings of the respondents.

Sixteen percent of the respondents had their systolic and diastolic blood pressures in the hypertensive range when checked (Table 6). Table 7 presents the statistical manipulation of the data obtained for measured blood pressure of the respondents. The table shows that the differences in the systolic and diastolic blood pressures between the bankers and the drivers is not statistically significant though the mean values is somewhat higher for the drivers than the bankers.
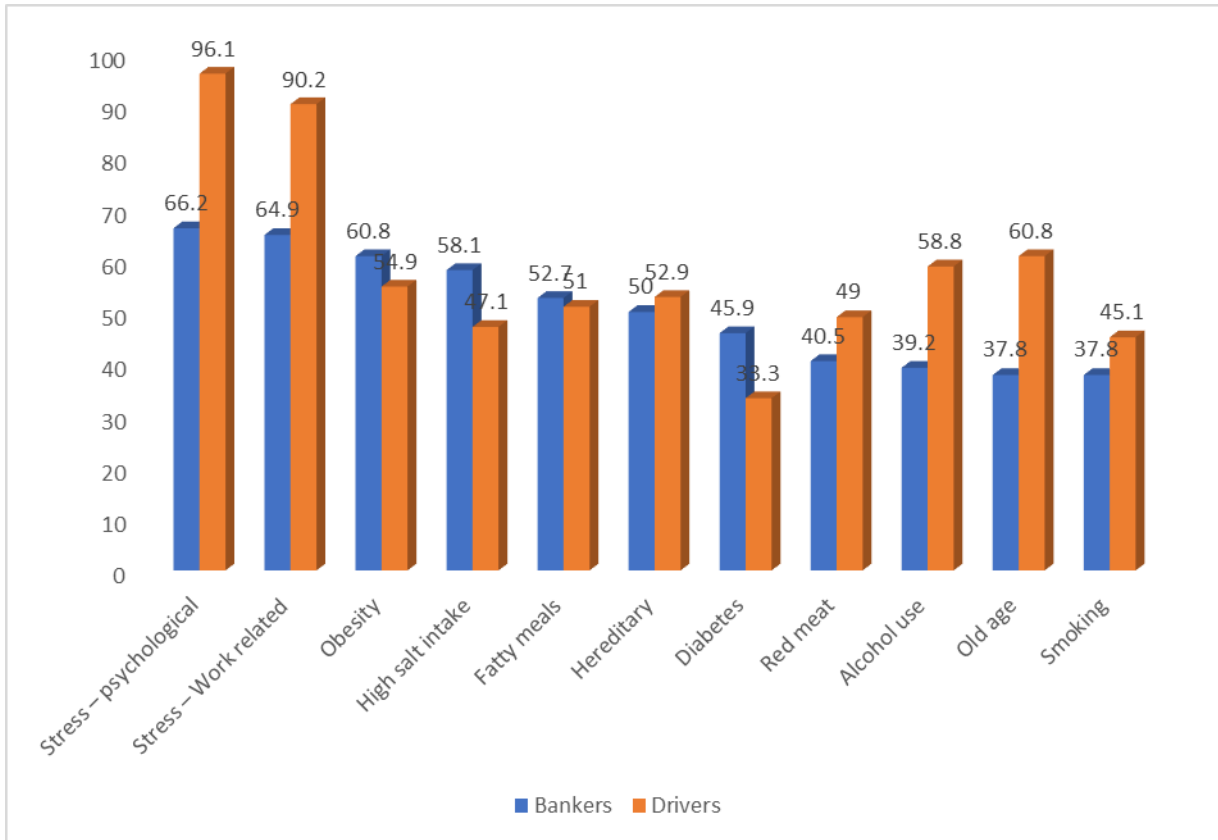
Table 1: Sociodemographic Data of respondents

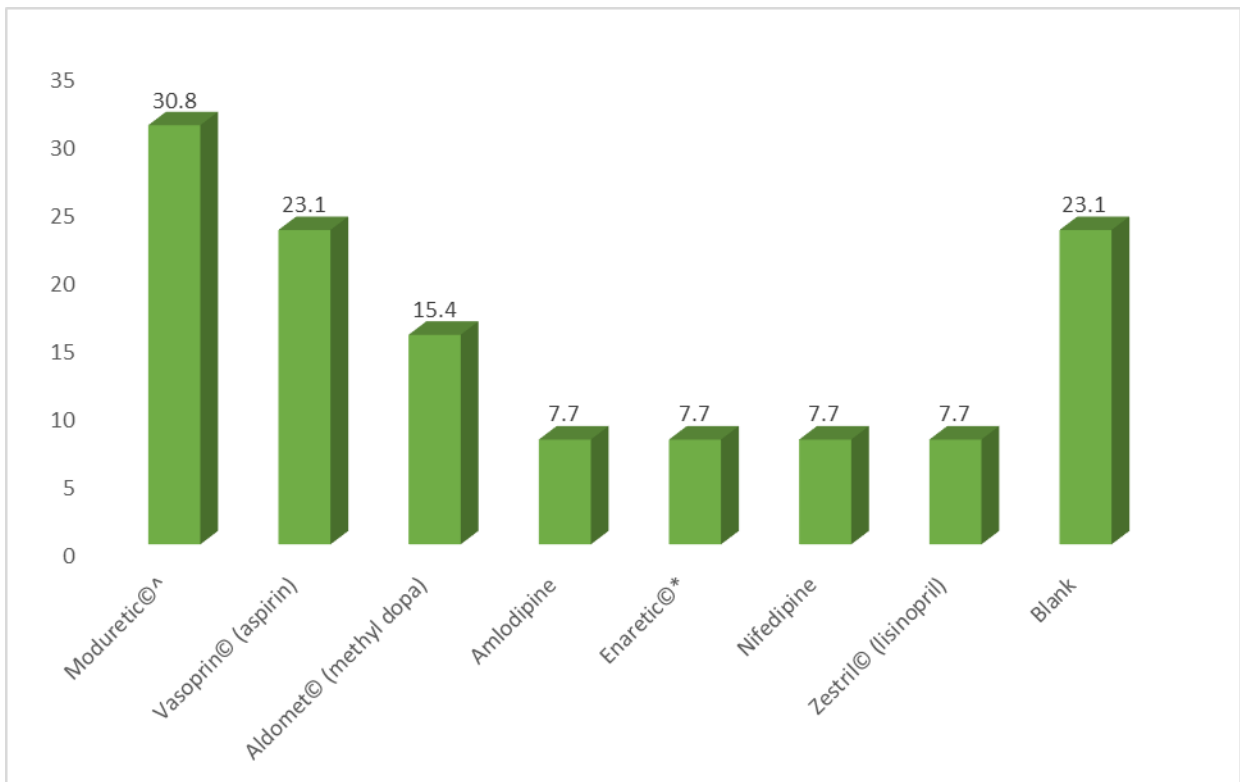| Items	Bankers % (N= 74)	Drivers% (N= 51)	TOTAL% (N=125)
Gender			
Male	47.3	100	68.8
Female	52.7	0.0	31.2
Highest level of education			
None	0.0	5.9	2.4
*FSLC	0.0	9.8	4.0
ᵅSSCE	4.1	64.7	28.8
First Degree	70.3	5.9	44.0
Masters	13.5	0.0	8.0
PhD	6.8	0.0	4.0
Others	5.4	13.7	8.8

*First school leaving certificate; ᵅSenior School Certificate Examination.

Table 2: Respondents knowledge and awareness of hypertension (HTN)

ITEMS	Bankers%(n= 74)	Drivers% (n= 51)	TOTAL%(n=125)
Heard about hypertension			
No	4.1	13.7	8.0
Yes	95.9	86.3	92.0
Hypertension information source			
Family Member	50.0	25.5	40.0
Mass media	68.9	54.9	64.0
Health workers	62.2	27.5	48.0
Others	4.1	2.0	3.2
Hypertension is common			
No	12.2	7.8	10.4
Yes	74.3	72.5	73.6
Don't know	13.5	19.6	16.0
Affected population for hypertension			
Men	20.3	11.8	16.8
Women	16.2	5.9	12
People >50 years of age	56.2	15.7	39.2
People <50 years of age	9.5	9.8	9.6
All age groups	27.4	58.8	40.0
Don't know	2.7	2.0	2.4
Definition of hypertension			
Increased heartbeat	41.1	19.6	32.0
Sustained increase in BP	81.1	72.5	77.6
Increased breathing rate	31.1	15.7	24.0
Decrease in BP	13.5	3.9	9.6
Chest Pain	13.5	9.8	12.0
Others	5.4	0.0	3.2
I'm aware of complications of hypertension			
Heart failure	68.9	78.4	72.8
Stroke	75.7	92.2	82.4
Kidney failure	27.0	70.6	44.8
Brain damage	16.2	58.8	33.6
Coronary artery disease	14.9	0.0	8.8
I'm aware of risk factors for hypertension			
No	27.0	5.9	18.4
Yes	73.0	94.1	81.6

Figure 1: Risk factors for hypertension known by respondents.

Figure 2: Antihypertensive drugs known by respondents.
Key: ^(Amiloride + hydrochlorothiazide); *(Enalapril + hydrochlorothiazide).

Table 3: Respondents' knowledge of management and practice of hypertension

ITEMS	Bankers % (n= 74)	Drivers% (n= 51)	TOTAL% (n=125)
Hypertension is Curable			
It is Curable	20.2	49.0	32.0
Not curable but controllable	58.1	45.1	52.8
Not curable nor controllable	12.1	0.0	6.4
Don't know	9.5	5.9	8.8
Hypertension Management			
Taking drugs	75.7	96.1	84.0
Reduced salt intake	59.5	66.7	62.4
Exercise	59.5	66.7	62.4
Prayers	36.5	58.8	45.6
Herbal remedies	13.5	70.6	36.8
Cannot be managed	2.7	2.0	2.4
Drugs used for hypertension			
No	86.5	88.2	87.2
Yes	13.5	11.8	12.8
Period blood pressure was last checked			
Less than 4 weeks ago	28.4	41.2	33.6
1 to 3 Months ago	21.6	23.5	22.4
3 to 6 Months ago	10.8	9.8	10.4
More than 6 Months ago	10.8	2.0	7.2
Can't Remember	20.3	15.7	18.4
Never checked my BP	8.1	7.8	8.0
Rating of blood pressure			
Normal BP	63.5	62.7	63.2
Moderate BP	17.6	3.9	12.0
High BP	5.4	7.8	6.4
I don't know	13.6	25.5	18.4
Respondents hypertension status			
Not previously diagnosed	97.3	88.2	92.0
Previously diagnosed	2.7	11.8	8.0

Table 4: Respondents and Risk Factors for Hypertension

Items	Bankers % (n = 74)	Drivers% (n = 51)	TOTAL% (n =125)
Risk of developing hypertension			
No	63.5	82.4	71.2
Yes	12.2	17.6	14.4
I don't know	24.3	0.0	14.4
Respondents of need to reduce weight			
No	54.1	88.2	68.0
Yes	28.4	11.8	21.6
Don't think so	17.6	0.0	10.4
Respondents informed to reduce weight			
No	82.4	100	89.6
Yes	17.6	0.0	10.4
Respondents exercise pattern			
Regularly	39.2	31.2	40.0
Rarely	60.8	43.1	53.6
Never	0.0	15.7	6.4
Respondents alcohol status			
No	60.8	33.3	49.6
Yes	13.5	29.4	20.0
Occasionally	25.7	37.3	30.4
Respondents smoking status			
No	98.6	78.4	90.4
Yes	0.0	21.6	8.8
Occasionally	1.4	0.0	0.8
Respondents salt intake consciousness			
No	27.0	47.1	35.2
Yes	73.0	52.9	64.8

Table 5: Respondents' Knowledge and Practice Rating

Variables	Bankers % (n= 74)	Drivers% (n= 51)	Total% (n=125)	p-value
Knowledge rating				
Poor	24	13	18.5	0.00001*
Good	76	87	81.5	
Practice rating				
Poor	48	35	41.5	0.007*
Good	52	65	58.5	

Key: * = statistically significant.

Table 6: Blood pressure determinations

Blood pressure range (mmHg)	Total% (N= 125)
Systolic BP	
<90	0.8
90-109	17.1
110-129	46.5
130-139	19.4
>139	16.3
Diastolic BP	
<70	16.8
71 – 80	32.0
81 – 90	35.2
>90	16.0

Table 7: Statistics of systolic blood pressure

Items	Mean	N	SD	SEM	t-test Sig. (2-tailed)
Bankers systolic	124.0577	74	17.16747	2.38070	0.530
Driver systolic	126.0962	51	16.01134	2.22037	
Bankers diastolic	80.1154	74	11.5090	1.59601	0.199
Driver diastolic	97.7692	51	96.9159	13.43982	

Key: N = Sample size; SD = Standard Deviation; SEM = Standard Error of mean.

DISCUSSION

The study showed that respondents overall had good levels of hypertension knowledge and practice though there were areas of poor knowledge in both groups. The result obtained in this study was higher than in a previous study [28] and comparable to others [29, 30]. In this study more males participated simply because all of the BRT drivers were men. However, a previous study also had more males as study respondents [29]. The study showed that most of the respondents knew the definition of hypertension as sustained increase in blood pressure, similar to the result obtained in a previous study [30]. Popular sources of information about hypertension among the workers are family members, mass media and health workers.

The results showed that the respondents in this study had higher levels of knowledge of some risk factors for hypertension compared to some previous studies. There was greater awareness of the roles of hereditary, increasing age and alcohol use as risk factors for hypertension [30, 31]. However, fewer of the respondents recognized high salt intake as a risk factor for hypertension. This study also documents like in a previous study that many people believe that stress and thinking/worrying are major risk factors or even causes of hypertension [20, 29, 30].

Just about half of the respondents knew that hypertension cannot be cured but can be managed. This is better than earlier reports carried out in Nigeria and the United States [30, 32].

Literature shows that lifestyle modification such as increased physical activity, reduction in weight and salt intake and reduction or elimination of alcohol helps in lowering blood pressure [8, 33 - 35]. However, the results obtained from this study did not show that respondents took these lifestyle modifications seriously with most not engaged in weight reduction, alcohol intake reduction or regular exercises. Many of the respondents gave a positive response to being conscious of their salt intake. This was in line with a previous study which showed that lower sodium intake and adherence to Dietary Approaches to Stop Hypertension (DASH) helped to lower blood pressure [36].

The prevalence of systolic hypertension and diastolic hypertension in this study was comparable to another study in which the value of assessed blood pressure and prior knowledge of hypertension status were 22.1% and 14.5% respectively [37]. In previous studies in Nigeria, over 60% of the assessed population were not aware of their

hypertension status [1, 16] while in a study in Saudi Arabia about 45% of the assessed population did not know their status [38].

Though very few of the respondents knew any of the drugs used in management of hypertension, it is instructive that Vasoprin® is listed as the second most known drug used by hypertensives. Vasoprin®, commonly known as low-dose aspirin is commonly prescribed as part of the treatment regimen for hypertensive patients because of its usefulness in the primary prevention of stroke and myocardial infarction. Though current medical thinking is moving away from the one-dose-fits-all strategy [39, 40, 41] it is understandable that respondents would recognize it as it is very commonly prescribed for hypertensive patients. Moduretic® (amiloride, 5mg plus hydroclorothiazide, 50mg) and Aldomet® (Methyldopa, 250mg) were the most common and third most commonly known drugs in the study. As in this study, poor knowledge of antihypertensive drugs was recorded in a previous study among hypertensive patients [29].

The mean systolic blood pressure for both groups in this study was slightly lower than that obtained from a previous study in south-eastern Nigeria. The mean diastolic blood pressure obtained from drivers in this study was higher than that from the same study while those of the bankers was lower [42]. The mean systolic BP of the bankers and drivers was similar while the mean diastolic BP of the drivers was somewhat higher than that of the bankers. This could be due to a difference in the work environments – drivers work in unstable noisy areas while bankers operate within a stable, quiet environment. Previous studies show an association between noise exposure and blood pressure and ischemic heart disease [43, 44]. However, the differences in the BP between the drivers and the bankers were not statistically significant with *p*-values of 0.53 for the systolic blood pressure and 0.199 for the diastolic blood pressures.

Type of occupation appeared to have no effect on respondents' knowledge and practice with respect to hypertension. However, the drivers seemed to be more aware than the bankers especially with regards to risk factors. This is unlike the result obtained in a previous study where it was documented that level of education may have positive impact on knowledge and awareness about the risk factors and complications of hypertension [45]. However, this result may have been influenced by a health seminar conducted with the BRT drivers around the time of the study, the bankers' busy schedules and the educational exposure of some of the drivers.

CONCLUSIONS

The study showed that respondents' knowledge and practice with respect to hypertension is good with more room for improvement with regards to practice than knowledge. It is recommended that sensitization of workers through public enlightenment/workplace educational campaigns be engaged in regularly to enhance their practice and that systems be put in place for regular BP checks for workers.

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