Original Research Article

High Prevalence of Hypertension among Residents of Ilorin

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Abstract

Purpose: The objective of this study is to determine the prevalence of hypertension among respondents of Ilorin west LGA.
Methods: This was a descriptive study conducted among 270 residents in Ilorin West LGA selected using a multistage sampling technique.
Results: The prevalence of stages 1 and 2 hypertension among respondents was 16.7% and 11.9% respectively.

About half 134 (49.6%) of the respondents had systolic and diastolic blood pressure in the pre-hypertensive stage.
Conclusion: There is a high prevalence of hypertension among the respondents.

Keywords: Blood pressure, Hypertension, Prevalence, Ilorin

Introduction

Hypertension is fast becoming a public health problem in the world, statistics of its prevalence in many developed countries show that a lot of attention needs to be devoted towards alleviating the burden the disease poses to the world. In the US, studies have shown that one adult in three has high blood pressure; in United Kingdom, over 16 million people are affected by hypertension which is also responsible directly for half of all strokes and heart attacks; its prevalence according to the WHO in Iran is 43.8%, Sudan 19.8%, Oman 27.6% and Jordan 36% [1,2].

The prevalence of cardiovascular disease risk factors is increasing dramatically in urban areas of low and middle-income African countries.[3,4]. In countries such as Nigeria, Ghana and South Africa, the prevalence of chronic diseases is increasing, even as the threat of communicable and poverty-related diseases (malaria, infant mortality, cholera, malnutrition) still exists [5-8]. In South Africa, CVD is the second leading cause of death after HIV accounting for up to 40% of deaths among adults. [9] Studies in Tanzania have reported high rates of hypertension in both urban and rural areas, particularly among the obese and elderly [10]. Similarly, earlier studies in Ghana reported a hypertension prevalence of 4.5% among rural dwellers and 8% to 13% in urban dwellers. [11]. An urban hospital survey in Zaire, revealed that hypertension constituted 70.7% of all CVDs seen, and was more frequent in the higher socioeconomic classes.[12]. In a survey of 2000 adults in the Cameroons, hypertension was present in 14.7% of the entire population and 8% of subjects under 30 years. [13]. Here in Nigeria, according to a recent national survey, the prevalence of hypertension in the general adult population was found to be between 10 and 12% and that hypertension is the dominant risk factor for stroke. [14,15]. A follow up study of 1200 adults from the rural district of Igboora-pa, Oyo State, Nigeria, reported that the relative risk of death in people with hypertension was 1.6 within three years [16,17]. Another study in South Western Nigeria showed that of 1004 cardiovascular disease patients, hypertension accounted for 353 (32%), [18] while another study carried out in North central Nigeria showed that prevalence of high coronary heart disease risk in newly diagnosed hypertensive patients was 22% [19].

The objective of this study therefore, was to determine the prevalence of hypertension among residents of Ilorin West Local Government Area.

Methods

Setting

Ilorin West Local Government Area (LGA) is one of the LGA that make up Ilorin metropolis, the capital

city of Kwara State. It is situated in the middle belt of Nigeria. According to the 2006 population figures the LGA has about 364,666 people. The two predominant religions are Islam and Christianity. The area has one tertiary health institution, two state owned secondary health centres, numerous primary health centres and private health centres.

Study design

This was a descriptive cross sectional study involving 270 respondents.

Study population

Adult residents of the LGA who were 18 years of age and above made up the study population.

Sampling technique

Ten out of the twelve political districts of Ilorin West LGA were selected using simple random sampling by simple balloting, thereafter, twenty seven households that met the inclusion criteria in each selected district were selected using systematic sampling technique as follows: (i) Households were sampled at interval of three households until a total of 27 households meeting the inclusion criteria were sampled; (ii) only one member of the household meeting the inclusion criteria was selected from the household. This was done using simple balloting in households where more than one member met the inclusion criteria; (iii) The index house was determined using Grid method in which a bottle was spun in the estimated centre of the district. The direction of the bottle after been spun determined the starting point of the sampling.

Data collection

Information about respondents' demographic data was obtained using an interviewer administered questionnaire. The blood pressure measurement was repeated two days after the first set of measurements.

Data analysis

The data obtained from the questionnaire and physical measurements were analysed using the Statistical Package for Social Sciences (SPSS version 15, Chicago, IL US). Results were presented as means ± SD or frequencies (percentages). Student's

t-tests and Pearson correlation were used to compare differences and test associations of variables. P values < 0.05 were considered significant.

Results

Of the 270 respondents majority were males 144 (53.3%), the most commonly occurring age range was between 21 to 40 years 178(65.9%). Most of them had a tertiary education 130(48.1%) and were married 164(60.7%). Other demographics are as shown in table 1.

Majority 233 (86.3%) of the respondents claimed they were non hypertensive while only 37 (13.7%) affirmed that they were known hypertensives. After the screening 77(28.6%) of the respondents had either stage 1 or 2 hypertension yielding a prevalence of 14.9% of undiagnosed hypertension in the population screened. Table 2 shows the distribution of respondents by classification of hypertension according to the Seventh Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7).

Table 1: Distribution of sociodemographic data of respondents

Socio demographic data	Frequency n= 270 (%)
Ages (yr)	
≤ 20	16 (5.9)
21 - 30	93 (34.4)
31 - 40	85 (31.5)
41 - 50	47 (17.4)
51 - 60	21 (7.8)
> 60	8 (3.0)
Gender	
Male	144 (53.3)
Female	126 (46.7)
Educational status	
No formal education	9 (3.3)
Primary education	26 (9.6)
Secondary education	105 (38.9)
Tertiary education	130 (48.1)
Marital status	
Single	97 (35.9)
Married	164 (60.7)
Widowed	7 (2.6)
Divorced	1 (0.4)
Separated	1 (0.4)
Religion	
Islam	87 (32.2)
Christianity	183 (67.8)

Table 2: Distribution of respondents by classification of hypertension according to JNC7

Blood pressure		Interpretation	Frequency (%)
Systolic (mmHg)	Diastolic (mmHg)		
< 120 and	Less than 80	Normal	59 (21.9)
120 -139 or	80- 89	Prehypertension	134 (49.6)
140- 159 or	90- 99	Stage 1 hypertension	45 (16.7)
≥ 160 or	≥ 100	Stage 2 hypertension	32 (11.9)
Total			270 (100)

p < 0.001

Table 4: Association between respondents' classification of hypertension based on JNC7 and their educational status

Educational status	Classification of hypertension				Total (%)
	Normal (%)	Prehypertension (%)	Stage 1 (%)	Stage 2 (%)	
None	0 (0)	2 (22.2)	5 (55.6)	2 (22.2)	9 (100)
Primary	3 (11.5)	13 (50.0)	4 (15.4)	6 (23.1)	26 (100)
Secondary	21 (20.0)	46 (43.8)	26 (24.8)	12 (11.4)	105 (100)
Tertiary	35 (26.9)	73 (56.2)	10 (7.7)	12 (9.2)	130 (100)
Total	**59 (21.9)**	**134 (49.6)**	**45 (16.7)**	**32 (11.9)**	**270 (100)**

p < 0.001

Table 5: Relationship between respondents knowledge of their bp status and hypertension stage

		Classification of hypertension				Total (%)
		Normal (%)	Prehypertension (%)	Stage 1 (%)	Stage 2 (%)	
Awareness of hypertension	Yes	1 (2.7)	12 (32.4)	12 (32.4)	12 (32.4)	37 (100)
	No	58 (24.9)	122 (52.4)	33 (14.2)	20 (8.6)	233 (100)
Total		59 (21.9)	134 (49.6)	45 (16.7)	32 (11.9)	270 (100)

p = 0.0001

About half 134 (49.6%) of the respondents had systolic and diastolic blood pressure in the pre-hypertensive stage. The average systolic and diastolic pressures among respondents were 128.86 ±19.80 and 82.62 ±13.31 mmHg respectively. Median and modal systolic values were 125.5 and 120 mmHg while median and modal diastolic values for the population under study were 81.50 and 80 mmHg respectively. Minimum and maximum values for systolic blood pressures were 86 and 222 mmHg respectively while minimum and maximum values for diastolic blood pressures were 50 and 127 mmHg respectively.

Gender specific blood pressure statistics, revealed that mean male systolic and diastolic blood pressure 130.29 ±18.36 and 81.68 ±14.12 was marginally higher than that of the females 127.62 ± 20.96 and 83.44 ±12.57 respectively. However, the difference was not statistically significant (p>0.05).

There was a statistical association between the respondents' age and their distribution into the JNC7 classification (p < 0.05) (table 3). Less than 20% of respondents below or equal to 40 years of age had either stage 1 or 2 hypertension while 40% of those aged above 40 years had either stage 1 or 2 hypertension.

Educational status of the respondents was found to influence their classification (p<0.05) (table 4). Only few of the respondents with tertiary education had either stage 1 or 2 of hypertension while majority of those without any formal education had either stage 1 or 2 of hypertension.

A larger number of respondents who were unaware of their BP status were more likely to have prehypertension, stage 1 or stage 2 hypertension compared to their counterparts who knew their BP status. (p>0.05) (table 5). More than half of those who said they were not hypertensive were pre-hypertensive while about one-fourth of them had normal blood pressure. On the other hand about one third of those who said they had hypertension had stage 1 and 2 hypertension respectively

Discussion

The respondents in this study cut across all age groups ranging from the young, middle aged and the elderly. Majority of the respondents were married. This may be because majority of the respondents also were within marriageable age range. Only a few of the respondents agreed they were hypertensive but after the BP screening, the number of respondents who claimed they were not hypertensive but had stage 1 and 2 levels of hypertension were twice the number of corresponding respondents who knew they were hypertensive. This shows that the prevalence of undiagnosed hypertension is actually high among the respondents (14.9%). A wide range of prevalence of hypertension has been reported in literature. A national survey in Nigeria reported the prevalence of hypertension in the general adult population to be between 10 and 12%, another study in Ibadan reported a value of 21% [20,21]. Some other studies have reported similar prevalence rates as this present study. A study conducted in two ethnic populations in Northern Nigeria had a prevalence rate of hypertension of 24.8% and about 13.9% of them were aware they were hypertensive, another study conducted in a low income semi urban community in North east Nigeria also reported a prevalence of 25.2% [22,23]. A lower value of prevalence of 18.3% was obtained in one study in a rural community in Niger Delta region in Nigeria [24]. Higher values were obtained from a study carried out in a semi urban community and rural community in South east Nigeria where values of 36.6% and 46.4% were obtained respectively. [25,26] Outside Nigeria reports show varying prevalence rates. A survey in Cameroon gave a value of 14.7% and 65% among an elderly population in Costa Rica. [27,28]. A multi ethnic Asian population showed that 84.4% of those

who had hypertension were actually aware they were hypertensive [29].

In this study about half of the population had pre-hypertension. Pre hypertension is associated with increased risk for cardiovascular disease [30] and if not promptly monitored and properly managed, may degenerate to hypertensive stages which may eventually increase the population of those with the disease. The prevalence of prehypertension obtained from this study is higher than that obtained from similar studies in North east Nigeria and Central China which revealed figures of 40.3% and 42.7% respectively but lower (58.7%) than that obtained from a study carried out in another part of Northern Nigeria [22,24,31].

Age and educational status influenced the blood pressure of the population under study. Expectedly, more of the younger respondents had normal blood pressure compared to the older respondents. This agrees to similar studies done in the Niger Delta region of Nigeria, another Nigerian rural community, Ashanti in Ghana and Costa Rica. [23,26,29,32]. In this study lower educational status was associated with increase in blood pressure. This may be because respondents with higher educational qualification may have better knowledge of measures that prevent hypertension. In this study, more respondents with tertiary education also had normal blood pressure compared to others with lower educational status.

Conclusion

The prevalence of stages 1 and 2 hypertension among respondents were 16.7% and 11.9% respectively. Prevalence was high compared to many other studies.

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