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INCIDENCE OF HIGH BLOOD PRESSURE AMONG APPLICANTS FOR RECRUITMENT INTO NIGERIA POLICE IN OSUN STATE, SOUTHWESTERN NIGERIA

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Abstract

Background: Given the psychological and physiological inflexibilities of emergency workers including law enforcement agents, elevated blood pressure presents serious public health and clinical concerns, Police job is often regarded to as risky profession, hence requires special attention the general health and safety of the officers. This study aims to assess the Incidence of high blood pressure among applicants into the Nigerian police force recruitments in Osun State Nigeria.

Methods: A cross-sectional study design among 165 police force applicants from LGAs in Osun State selected using multistage sampling technique, the research data was aloof from the recruitments' exercise registers and records and analyzed with IBM SPSS software version 25.0 and the statistical level of significance was set at $P<0.05$.

Results: Majority (82.4%) of the applicants have normal blood pressure compared to 17.6% who have high blood pressure, more males (21.0%) have high blood pressure than females (8.7%). A statistically association was revealed between the respondents' blood pressure level and their sociodemographic status (LGAs).

Conclusion: There was a mild incidence of high blood pressure among applicants for police recruitments in Osun State. More common in male than female and in young adults than those who are still in their late adolescent stage.

Key words: Incidence**,** Blood Pressure, Police Officers, Applicants, Recruitments, Osun State

Introduction.

Given the psychological and physiological inflexibilities of emergency workers including law enforcement agents, elevated blood pressure presents serious public health and clinical concerns (Kales et al., 2009). The Strenuous nature of their work may influence cardiovascular disease related to their duty and this may contribute to the risk of cardiovascular diseases mortality and morbidity (Kales et al., 2009). Police job is often regarded to as risky profession, hence requires special attention the general health and safety of the officers (Jeoma & Gentle k, 2022).

Elevated blood pressure was responsible for approximately 9.4million deaths and about 162 million years of life lost in 2010, caused half of all the cases of heart failure and stroke (Campbell et al., 2014). It is of utmost importance to take measures for the early detection of elevated of blood pressure to avoid both its short and long-term consequences, being a preventable a disease (Arredondo, 2019). Operational police personnel are obligatory to respond immediately and vigorously to sudden or random frontline incidents, thus more prone to cardiovascular events than other people due to increased level of cardiometabolic risks (Yates et al., 2021).

And police are more likely than general population to be obese and suffer from associated diseases including hypertension (Jeoma & Gentle k, 2022). Hence, screening at the recruitments level is important to identify the potential applicants that may be at higher risk of the cardiovascular events. This study aim to assess the incidence of high Blood pressure among applicants for the Nigeria police force in Osun State, Southwestern Nigeria.

Studies have looked into the incidence of high blood pressure among police officers and law enforcement agency and emergency responders generally (Arredondo, 2019; Jeoma & Gentle k, 2022; Kales et al., 2009; Shayne & Pitts, 2003; Yates et al., 2021) but none have looked into the area among the applicants into the Nigeria police recruitments.

Materials and Methods

This study was carried out among 165 applicants into the police recruitments in Osun State Southwestern Nigeria, based on the report from the 2006 census, The city is largely dominated by the Yoruba ethnic group. It has an area and population density of 47.0km^2 and 4,557km^2 respectively. there are three senatorial districts in the state, each senatorial districts have 10 Local Government Areas, each LGAs provided 20 applicants for recruitments exercise into the Nigeria Police Force. For the purpose of this study, five out of ten Local Governments Areas were randomly selected from each senatorial districts via balloting. Eleven applicants were selected from each selected local governments using simple random sampling employing balloting. The minimum sample size was 150 and was increased to 165 after adjusting for 10% non-response rate. High blood pressure above was adjudged in this study when the systolic was 130 or higher and when the diastolic was 80 or higher following the 2017 American College of Cardiology/American Heart Association Guideline for the prevention, detection, evaluation and management of high blood pressure in Adults (CDC, 2017).

The ethical approval was obtained from Health research and ethics committee of Adeleke, university Ede, Osun State. Nigeria. Needed Information was obtained from the applicants screening registers, information obtained include sociodemographic characteristics, and the screening test results of hepatitis B

Data Analysis

Data analysis was done using IBM SPSS software version 20.0, the tabular form was used for results presentation while chi-square and logistic regression for a test of significance were done as appropriate with significant differences at p less than 0.05.

Results

Table 1: Sociodemographic Characteristics (n=165)

Variables	Sub-variables	Frequency	Percentage (%)
Age	16-19 Years	33	20.0
	20-26 Years	132	80.0
Sex	Male	119	72.1
	Female	46	27.9
Local Government Areas	Ifedayo	11	6.67
	Ifelodun	11	6.67
	Boluwaduro	11	6.67
	Ila	11	6.67
	Odo Otin	11	6.67
	Ede North	11	6.67
	Irewole	11	6.67
	Ejigbo	11	6.67
	Isokan	11	6.67
	Ife North	11	6.67
	Ife South	11	6.67
	Atakunmosa West	11	6.67
	Atakunmosa East	11	6.67
	Obokun	11	6.67
	Egbedore	11	6.67

Table 1 shows the sociodemographic characteristics of the respondents. Majority (80.0) of the applicants in selected were between the 20-26 years compared to only 20% that were in 16-19 years age bracket. More than a two-thirds (75.1%). There were eleven participants each equal 6.67% per each Local Governments Areas.

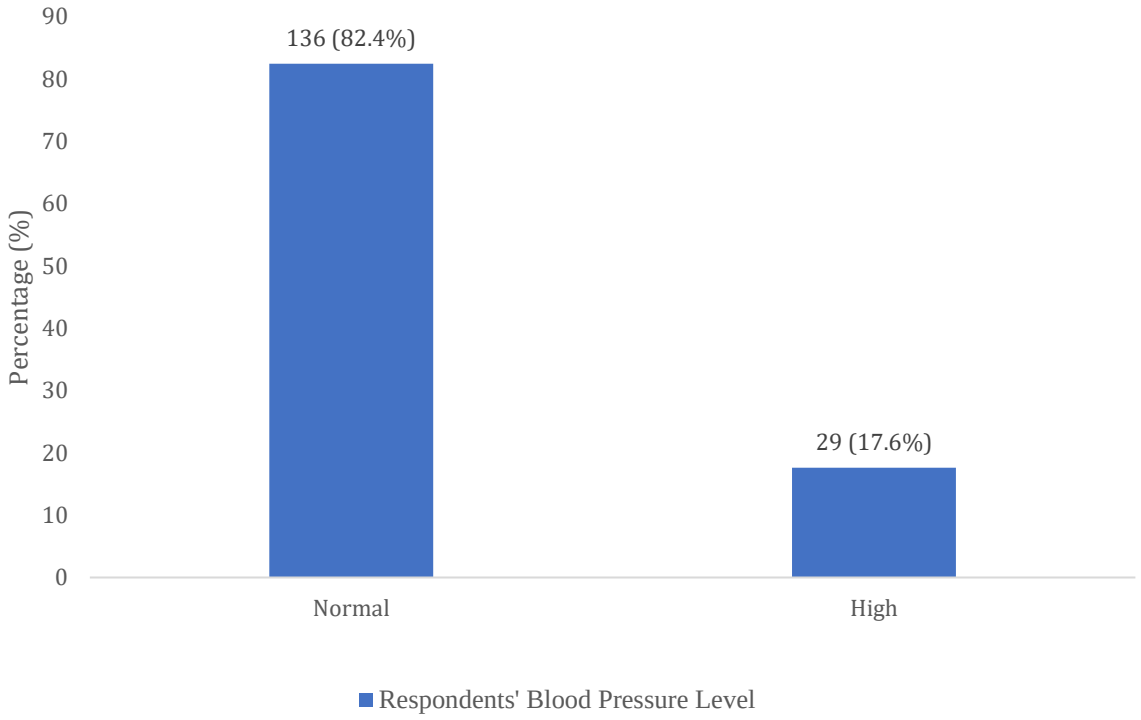

Figure 1: Blood Pressure Level of the Respondents

Figure one shows the respondents' blood pressures level, majority (82.4%) were found to have Normal blood pressure, while 17.6 were found to have high blood pressure (figure 1).

Table 2: Association Between the Respondents' Blood Pressure Level and their Sociodemographic Characteristics (n=165)

Variables	Sub-variables	Respondents' Blood Pressure Level		Statistics
		Normal BP % (n=136)	High BP % (n=29)	
Age	16-19 Years	30 (90.9)	3 (9.1)	$x^2 = 2.050$
	20-26 Years	106 (80.3)	26 (19.7)	$p = 0.152$
Sex	Male	94 (79.0)	25 (21.0)	$x^2 = 3.472$
	Female	42 (91.3)	4 (8.7)	$p = 0.062$
LGAs	Ifedayo		11 (100.0)	$x^2 = 51.888$# **$p < 0.0001$**
	Ifelodun	10 (90.9)	1 (9.1)	
	Boluwaduro	11 (100.0)		
	Ila	11 (100.0)		
	Odo Otin	9 (81.8)	2 (18.2)	
	Ede North	10 (90.9)	1 (9.1)	
	Irewole	10 (90.9)	1 (9.1)	
	Ejigbo	9 (81.8)	2 (18.2)	
	Isokan	10 (90.9)	1 (9.1)	
	Ife North	8 (72.7)	3 (27.3)	
	Ife South	10 (90.9)	1 (9.1)	

	Atakunmosa West	9 (81.8)	2 (18.2)	
	Atakunmosa East	9 (81.8)	2 (18.2)	
	Obokun	10 (90.9)	1 (9.1)	
	Egbedore	10 (90.9)	1 (9.1)	

#Likelihhod ratio,

Table 2 shows the association between the respondents' blood pressure level and their Sociodemographic Characteristics. Although not statistically significant, more (19.7%) of the applicants in within 20-26 years were found to have high blood pressure compared to those in 16-19 years age bracket (9.1%), more males (21.0%) were also found to have high blood pressure than females (8.7%). There was a statistically significant association between the respondents' blood pressure level and their Local Government Areas, majority of the respondents in all the selected local governments have normal blood pressure, $p<0.0001$. (Table 2)

Table 3: Binary logistic regression of the outcome variable "Respondents' Blood Pressure Level" and their socio-demographic predictors (n = 165)

Variables	Variable Categories	P Value	Odds Ratio	95% Confidence Interval	
				Lower	Upper
Age	16-19 Years (Reference)	0.623	1.431	0.343	5.966
Sex	Male (Reference)	0.068	0.142	0.017	1.158

Table 3 shows the binary logistic regression of the outcome variable "respondents' blood pressure status" and their socio-demographic predictors. None of the sociodemographic predictors was statistically significant

Discussion

This study assessed the incidence of high blood pressure among applicants for recruitment into Nigeria police in Osun state, southwestern Nigeria. The mean age of the respondents was 22.08 ± 2.428. majority of the respondents were between the age of 20 and 26 years which is not in line with a Nigerian study conducted on High blood pressure among police officers where a little above half of their respondents were 25-40 years old (Jeoma & Gentle k, 2022). More than two-thirds of the respondents in this study were male which is similar to Arredondo (2019) study on incidence of Hypertension among police officers where every eight out ten respondents were male (Arredondo, 2019), however, this finding is contrast with Yates's 2021 study on predictors of hypertension among police officers where majority of their respondents were female (Yates et al., 2021) the higher proportion of the male participants could be attributed to the prejudice belief that due to the rigor and nature of the work males are the best fit for the job, thereby attracting more male applicants than females.

The majority of the respondents in this study have normal blood pressure which correlate with Arredondo (2019) study on hypertension in a high-risk working group (police officers where more than two-thirds had normal blood pressure (Arredondo, 2019). However, this finding is not in tandem with that of another study where about three-quarters of the emergency responders including police officers were found to have high blood pressure (Kales et al., 2009). High proportion of normal blood pressure in this study could be attributed to the fact that the respondents are still applicants that have not being really exposed to strenuous situation of the police job.

The prevalence of High blood pressure was higher male than in female in this study which is similar to the prevalence reported by Fikenzer *et al* (2014) study where more male have high blood pressure than females

(Fikenzer et al., 2014). This finding is also in line with Jeoma and Gentle (2022) study where more of the respondents with high blood pressure were males compared to the females (Jeoma & Gentle k, 2022)

This finding revealed a statistically significant association between blood pressure level and the respondents' LGAs: although majority from all the LGAs have normal blood pressure, however, all the selected respondents from Boluwaduro and Ila were found to have normal blood pressure $p<0.0001$, this finding may be limited by the sample size, hence further study may look into the incidence of blood pressure and its associated factors in this LGAs.

Conclusion

This study revealed a mild incidence of high blood pressure among applicants of Nigerian police force in Osun State southwestern Nigeria, the incidence was found to be more among the males than females, it was common among the young adults' applicants than those the late adolescents. Although there was no statistically significant association when relating the blood pressure level with the respondents' sociodemographic characteristics in the binary logistic regression model. However, females are seven times less likely to have high blood pressure compared to their male applicants (OR: 0.142) while young adults are about one and a half time more likely to have high blood pressure than the adolescents'' applicants (OR: 1.431).

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Conflict of Interest: None

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