Socio-Demographic Factors as Correlates to High Blood Pressure among Police Officers in Obio/Akpor Local Government Area of Rivers State

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Abstract
The purpose of this study was to examine sociodemographic characteristics as a predictor of high blood pressure among police officers in Rivers State's Obio/Akpor Local Government Area. At a 0.05 alpha level, four objectives and three null hypotheses were established and tested. The study used a descriptive correlational strategy. The study enrolled one thousand, one hundred and forty-two (1,142) police officers. This study enrolled 300 police officers who used Taro Yamene. The sample for the study was selected using a two-stage selection technique. The data collection instrument was a self-administered structured questionnaire titled "Socio-demographic variables and Body Mass Index as Correlates of Hypertension." Cronbach's Alpha was used to determine the validated instrument's reliability coefficient (0.74). The acquired data were analyzed using statistical tools such as mean, standard deviation, ANOVA, and chi-square with the help of SPSS version 25.0. According to the study's findings in Table 1, there was around a 180 (60.6 percent) prevalence of hypertension among police officers in Rivers State's Obio/Akpor Local Government Area. The outcomes of this study established a strong association between body mass index (BMI) and hypertension among police officers in the Obio/Akpor Local Government Area of Rivers State (p.05). The outcomes of this study established a strong link between age and hypertension among police officers in the Obio/Akpor Local Government Area of Rivers State (p.05). The study's findings suggested that there was no significant link between gender and hypertension among police officers in Rivers State's Obio/Akpor Local Government Area (p >.05). It was discovered that police officers had a significant frequency of hypertension. To avoid developing cardiovascular disease, police officers should also make a conscious effort to maintain a healthy balance in their health, notably by monitoring their body mass index, blood pressure, fasting blood sugar, and total serum cholesterol.

Keywords: socio-demographic factors, correlates, high blood pressure, police officers

INTRODUCTION

Generally speaking, police employment is regarded as a dangerous profession that necessitates special attention to the health and safety of its employees. Every country's police force is critical in maintaining public peace, as well as the rule of law and order. For some people, exposure to violence can have a negative impact on their health, either directly or indirectly. It has also been discovered that present police officers are more likely than the general population to be obese and suffer from associated diseases such as hypertension (Alghamdi, et al., 2017). With an increasing number of people choosing to live healthy lifestyles and attempting to maintain a normal body mass index, the rising incidence of cardiovascular disease should cause concern for everyone around the world (BMI). The World Health Organization characterizes weight record (BMI) as a proportion of body weight to stature that can be utilized to decide an individual's gamble of cardiovascular illness (2018). Consequently, it is basic to screen weight record (BMI) consistently to keep a good arrangement of chance elements for cardiovascular infection. An individual with a weight record (BMI) more prominent than 30 is bound to get risk factors for cardiovascular sickness like hypertension and fasting blood glucose. The Centers for Disease Control and Prevention say that preventable noncommunicable illnesses (NCDs), like cardiovascular infection, are turning into a significant obstacle to financial advancement in non-industrial nations (2012). Therefore, dismalness, inability, and demise have expanded.

The World Health Organization assesses that (hypertension) guaranteed 9.4 million lives internationally in 2010, representing 7% of the worldwide infection trouble.

Twenty-two percent of adults over the age of 18 had high blood pressure, which is defined as a systolic and/or diastolic blood pressure of 140/90 mmHg on one or both sides. In 2019, (Parkash et al., 2019), (Cardiovascular disease is growing more prevalent worldwide (Lopez et al., 2016). Noncommunicable diseases (NCDs), which include cardiovascular issues, account for 71% of all global mortality. Noncommunicable illnesses claim 41 million lives worldwide each year. Noncommunicable diseases are rapidly being diagnosed as a public health issue, particularly in more developed countries. African countries were identified as being among the most severely affected in the 2013 World Health Day global brief. Non-communicable diseases, such as cardiovascular disease, are increasing in prevalence in developing nations such as Nigeria (Njoku et al., 2019). According to World Health Organization estimates, over 24% of Nigeria's population died from noncommunicable diseases in 2013. Twenty percent of those fatalities were due to heart disease, cancer, diabetes, and chronic respiratory illnesses. A objective of lowering premature mortality from noncommunicable diseases, such as cardiovascular disease, was included, as were targets for addressing risk factors such as hypertension and fasting blood sugar levels in relation to body mass index.

A high BMI has been shown to build one's gamble of creating cardiovascular sickness, and it is a basic wellbeing pointer since it brings about metabolic changes that can bring about hypertension and cholesterol (Oladapo et al. 2010). As per Dryvold et al. (2005), both systolic and diastolic pulse are emphatically connected with weight file (BMI), and weight reduction has been demonstrated to fundamentally bring down circulatory strain. As indicated by Neter et al. (2003), BMI isn't just a marker of hazard factors for hypertension, yet additionally a job in its turn of events. As BMI grows, one outcome of this relationship is that hypertension, a significant gamble factor for cardiovascular illness, will turn into a much higher wellbeing trouble, driving

in an expansion in medical care costs (Rahmouni, 2014). Moreover, an expansion in weight file (BMI), a proportion of abundance weight, is associated with weight gain, especially within the sight of instinctive adiposity. People who put on weight and have solid fringe corridors are bound to foster hypertension because of their additional weight (Hall et al., 2015). As per the seventh Joint National Committee on hypertension avoidance, discovery, appraisal, and treatment studies, a 20/100 mm Hg expansion in systolic circulatory strain pairs the gamble of coronary failure or stroke. As indicated by Faramawi et al., for each unit ascend in weight file (BMI), momentary pulse fluctuation (BPV) expanded by 0.25. (2015). As per epidemiological examinations led by Funke and Ibrahim (2013), both weight list (BMI) and pulse are developing internationally, with provincial fluctuations because of populace demography.

Due to the multiple changes that occur in the body as people age, hypertension is a common occurrence among older personnel, particularly police officers. According to World Health Organization (WHO) figures issued this year, more than 85 percent of people who engaged in "premature" deaths died in countries with low or moderate incomes, such as Nigeria (WHO, 2019). The effect of age on BMI and risk factors for cardiovascular disease such as blood pressure cannot be overstated. The association between age and BMI becomes stronger as one ages. This could be because many of the study's participants were students or government employees who were required to live close to their places of employment or school, as Joseph-Shehu et al. (2016) hypothesized. Another argument advanced was that the rising obesity rates linked with an aging population may be explained by older adults engaging in less physical activity but consuming the same number of calories as they did when they were younger (Rolfes et al., 2014). As a result of the excess energy they do not consume, individuals store fat, increasing their risk of obesity and the related health problems of fasting blood sugar and hypertension. High blood pressure has been connected with an increased risk of developing a number of health conditions, including cardiovascular disease, since Nielsen and Andersen (2003). (CVD). Additionally, Wang et al. (2014) discovered that the prevalence of obesity in males and females varied by age group. Males of all ages were found to have the same prevalence of obesity. As women age, the prevalence of general obesity increases, reaching a high in the 70–79 age group.

It is probable that male and female police officers are exposed to varying degrees of hypertension as a result of their jobs. Gender and body mass index (BMI) are inextricably linked in a variety of ways. Preedy (2016) discovered that more women than men were obese across all age groups due to a lack of physical activity. As a result, a number of studies have discovered that women are more likely than men to be overweight or obese (Vuvor, 2015; Funke & Ibrahim, 2015). (2013). Sex hormones' effect on sodium excretion and the renal hemodynamic response to salt may be one of the most likely explanations for men and women having unique blood pressure trends. Menopausal women have been discovered to be more sensitive to salt consumption than premenopausal women. It is vital to gain a better grasp of the relationship between body mass index and blood pressure, as well as any variations between the various categories.

Inactivity and a sedentary lifestyle are two of the most prevalent modifiable risk factors for cardiovascular disease (CVD). NCDs are "non-communicable diseases" (WHO, 2019). However,

additional risk factors such as an individual's upbringing, lifestyle, and environment can all contribute to an individual's risk of getting cardiovascular disease. Teachers in public secondary schools are among the numerous Nigerians who have died as a result of stumbling and collapsing as a result of the varied repercussions of cardiovascular disease risk factors. Teachers were rushed to the hospital in Port Harcourt, Rivers State, after a diabetic teacher fainted in the staff room. This is just one of numerous examples. Due to the scarcity of research in Nigeria that examine BMI and cardiovascular risk factors, it is likely that many of these cases go unnoticed. As a result, research into strategies to tackle this health problem is vital in Rivers State, as it is only a teacher who is alive and well who can execute his or her job properly and efficiently. In light of this, researchers in Rivers State's Obio-Akpor Local Government Area investigated the association between the sociodemographic features of police personnel and their risk of hypertension.

Objectives of the Study

The objective of this study was to investigate socio-demographic factors as correlates to high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers State. Specifically, this study attempts to achieve the following objectives:

1. To examine the prevalence of high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers State.
2. To examine the relationship between Body Mass Index (BMI) and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state.
3. To examine the relationship between age and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state.
4. To examine the relationship between gender and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state.

Hypotheses

The following null hypotheses were tested in this study at 0.05 alpha level.

1. There is no significant relationship between Body Mass Index (BMI) and high blood pressure among police officers in Obio-Akpor Local Government Area of Rivers state.
2. There is no significant relationship between age and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state.
3. There is no significant relationship between gender and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state.

Research design: The descriptive correlational research design was used for this study. This design compares or investigates the relationships between naturally occurring events and their outcomes.

Population of the study: This study looked at all police officers in the Obio/Akpor Local Government Area of Rivers State. In the Obio-Akpor Local Government Area, there are 1,142 cops (Office of the Commission of Police Rivers State, 2021).

Sample and Sampling Techniques: The study used Taro Yamene, the study's sample size was 300 police officers (1967). The sample for the study was selected using a two-step selection technique. In the first stage, a proportionate sample approach was used to pick police officers as respondents, with the number of respondents determined based on the size of the entire population. A total of 300 people completed the survey on the days it was administered, and these people were subsequently randomly picked for the second stage using the accidental sampling technique.

Instrument for Data Collection: The data collecting instrument was a standardized self-administered questionnaire titled "Socio-demographic variables and Body Mass Index as predictors of hypertension among police personnel." Four sections comprised the questionnaire: A, B, and C. Section A was created to extract personal information from respondents, whereas Section B focused on the Body Mass Index of Police Officers (height and weight). Section C recorded officers' blood pressure.

Reliability of Instrument: Split-half method was used to determined the degree of internal consistency of the validated instrument. 10 police officers in Port Harcourt were subjected to participate in the study that is homogenous to the area of study. The reliability index was determine using Cronbach Alpha was 0.74.

Method of Data Analysis: The data collected were analyzed using statistical tool of mean, standard deviation, ANOVA and chi-square with the aid of the Statistical Product for Service Solution (SPSS) version 25.0.

Results

Frequency and percentage distribution of respondents on the prevalence of high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers State

Variable	Category	N	%
High Blood Pressure	Yes	183	60.6
	No	119	39.4

Table 1 reveal the frequency and percentage distribution of respondents on the prevalence of high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers State. The table indicated that 180(60.6%) police officers in Obio/Akpor had high blood pressure while 119(39.4%) have never had high blood pressure.

H_{01}: There is no significant relationship between Body Mass Index (BMI) and high blood

pressure among police officers in Obio/Akpor Local Government Area of Rivers state.

Table 2: ANOVA test on the significant relationship between Body mass index and high blood pressure

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**p-value**
1	Regression	18445.157	1	18445.157	31.113	.000[b]
	Residual	177851.532	300	592.838		
	Total	196296.689	301			

a. Dependent Variable: Diastolic
b. Predictors: (Constant), BMI status

The result of F-statistic shows that there was a significant relationship between Body Mass Index (BMI) and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state ($F_{1, 300}=31.113$, $p<.05$). The null hypothesis was rejected at 0.05 alpha level.

H_{02}: There is no significant relationship between age and high blood pressure among police officers in Obio-Akpor Local Government Area of Rivers state.

Table 3: Summary of Chi-Square analysis on the relationship between age and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state

HBP * Age Crosstabulation					
Count		**Age**			
		25-40	**41-55**	**56 and above**	**Total**
HBP	No	87	30	2	119
	Yes	92	89	2	183
Total		179	119	4	302

The result show that there was a significant relationship between age and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state ($X^2=16.573$, $df=2$, $p<.05$) the null hypothesis was rejected at 0.05 alpha level.

H_{03}: There is no significant relationship between gender and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state.

Table 4: Summary of Chi-Square analysis on the relationship between gender and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state

HBP * Gender Crosstabulation			
		Gender	**Total**

Count		Female	Male	
HBP	No	41	78	119
	Yes	81	102	183
Total		122	180	302

Table 4 showed the summary of Chi-Square analysis on the relationship between gender and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state. The result showed that there was no significant relationship between gender and high blood pressure among police officers in Obio/Akpor Local Government Area of Rivers state (X^2=2.881, df=1, p>.05). The null hypothesis was retained at 0.05 alpha level.

Discussions of Findings

Prevalence of high blood pressure among police officers

Table 1 shows that there were 180 police officers in Rivers state's Obio/Akpor Local Government Area who had high blood pressure, according to the findings of the study in Table 1. According to this, it appears that the majority of police officers have high blood pressure, which could raise the risk of hypertension in the general population. Due to their 24-hour availability, this is hardly a surprise. Stabouli et al. (2005) observed that 75% of respondents had hypertension, which is in line with this study's findings. Funke and Ibrahim (2013) found that 63.6% of those polled had high blood pressure, which is in line with their previous findings. Contrary to the findings of this study, Vuvor (2017) found that only 32.5 percent of individuals were hypertensive. In the United States, 5.0% of the population has hypertension, according to Chowdhury et al. (2018). A study by Khanam et al. found that only 30% of workers had hypertension (2019). Rodriguez, et al (2006) also found that 7 percent of Eritreans suffer from hypertension. There may be a difference in results because of the participants' ages and the nature of their jobs in each study.

Body Mass Index (BMI) and high blood pressure among police officers

This study found an impressive relationship among obesity and hypertension in the Obio/Akpor Local Government Area of Rivers State's police faculty (p.05) (p.05). As per Ehud et al., (2015), who observed a solid relationship among's BMI and pulse, both systolic and diastolic circulatory strain expanded as BMI expanded. This study uncovered a comparative example. A good connection among's BMI and circulatory strain was displayed in a past report by Funke and Ibrahim (2013), who inspected the connection between pulse and BMI. Joseph-Shehu, et al (2016) uncovered a positive and significant association among BMI and circulatory strain (p=0.004), and this study's discoveries support their discoveries. As per Dryvold et al. (2005), weight list (BMI) was viewed as well related with both systolic and diastolic pulse. An individual's probability of having hypertension might increment on the off chance that they eat a great deal of unhealthy and elevated cholesterol food sources consistently. A higher BMI is connected with a more serious gamble of creating degenerative illnesses, for example, hypertension. Oladapo, et al. (2010) found a high connection between weight record (BMI) and pulse in grown-ups in Yoruba country, and these discoveries are comparable. Saxon et al. (2010) noticed a critical positive relationship among BMI and circulatory strain, and these discoveries

support their discoveries. As indicated by Vuvor (2017), a specialist in Ghana, BMI and circulatory strain are connected in grown-ups. Anyanwu, et al. (2010) uncovered weight to be a positive gamble factor for the improvement of hypertension in a review directed in Nigeria, and these new information back up their discoveries. Wang, et al. (2011) found a connection between's hypertension and variant BMI, for example, heftiness, which is predictable with this study's discoveries. Research systems and test qualities, for example, the way that they were essentially grown-ups who were reasonable maintaining various sources of income just to earn enough to get by, could make sense of the likeness between this review and the others that have preceded it.

Age and high blood pressure among police officers

Age and high blood pressure were found to be significantly linked among police officers in the Obio/Akpor Local Government Area of Rivers State, according to the results of this study (p.05). Degenerative disorders like high blood pressure are more common among the elderly, according to the findings of this study. According to Mungreiphy, et al. (2011), who looked at the link between BMI, blood pressure, and age, this finding is in line with theirs. They found that the mean systolic and diastolic blood pressure in older patients and participants with a higher BMI was greater. High blood pressure was shown to be more common and to have higher mean systolic and diastolic values as BMI increased with age, according to Brown and colleagues (2004). Rolfes, et al. (2014) hypothesized that the rise in obesity rates with advancing age could be due to the fact that older adults engage in less physical activity while consuming the same amount of calories as they did when they were younger. As a result, the unspent energy is stored as fat, increasing their risks of becoming obese or overweight. The findings of this study complement those of Vuvor (2017), who found that younger people had the highest percentage of respondents with normal BMI, whereas elderly persons had the majority of obese respondents. The hypothesis was evaluated, and the results demonstrated a significant association between BMI and age (p0.05). This finding is consistent with Wang, et al (2014), who discovered a statistically significant relationship between age and BMI. The similarities between the two studies could be due to a resemblance in the demographic investigated.

Gender and high blood pressure among police officers

In Rivers State's Obio/Akpor Local Government Area, no measurably huge connection was found between hypertension and gender among cops (p>.05). Since hypertension influences the two genders similarly, this study's discoveries are to be expected. With regards to hypertension, people are similarly in danger of fostering the condition. In any case, this study's discoveries go against earlier examination that recognized gender variation in BMI. As per Vuvor (2017), most of young men (41.0 percent) had a typical BMI, at this point this study showed that young ladies were almost certain than guys to be overweight or large. While Preedy (2016) demonstrated that ladies were almost certain than men to be corpulent at each age range examined, the discoveries of this study go against those of Preedy (2016). This study's discoveries struggle with those of Ataei, et alearlier .'s work (2009), who found that in an example of 3186 Tehran-region kids, guys had a higher BMI than young ladies. It's likewise important that the discoveries in this study vary from the discoveries of Carroll, et al (2010), who expressed that guys have a more noteworthy level of overweight, heftiness and hazard for weight than females, which is connected to hypertension in men. Dissimilar to Almir et al. (2014), this study tracked down no

distinctions in sexual orientation in BMI or active work among members. At the 0.05 degree of importance, the T-test discoveries show a measurably huge contrast among female and male understudies in the factual factors. As Funke and Ibrahim (2013) noted, female respondents were almost certain than male respondents, perhaps on the grounds that they were more averse to participate in normal activity. There is no proof to back up Wang, et al (2014's) guarantee that guys and females have various paces of stoutness. Guys of any age were displayed to have a similar predominance of weight, no matter what their age. As the female populace ages, the recurrence of general weight rises, topping in the 70-79 age bunch. On account of the assorted exploration populaces and areas, this disparity might be connected with an absence of normalization.

Conclusion

High blood pressure was shown to be a common problem among police personnel, according to the results of the study. In Rivers State's Obio/Akpor Local Government Area, a substantial association was established between age, BMI, and high blood pressure among the police personnel.

Recommendations

The following recommendations were made based on the findings of the study:

1. The police service commission should form a health team in each school comprising basically of physical and health education teachers who may be responsible for monitoring the body mass index of the teachers either monthly or quarterly.
2. Health posts should be made available at every police station by the authority to enable police officers monitor their blood pressure by at will by going there for such routine check.
3. The police officers should also make conscious effort to maintain a balance in their health particularly monitoring their body mass index, blood pressure, fasten blood sugar and total serum cholesterol to avoid been victims of any form of cardiovascular diseases.
4. Government should create fitness centers in police stations and make it mandatory for officers in order reduce diseases associated with overweight.

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