

Socio-Demographic Profiling of Patients with Hypertension and Diabetes in Public Hospitals In Nigeria: A Study of University of Benin Teaching Hospital (UBTH) Edo State Nigeria (2018 – 2023)

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DOI: 10.29322/IJSRP.14.04.2024.p14815

[10.29322/IJSRP.14.04.2023.p14815](https://doi.org/10.29322/IJSRP.14.04.2023.p14815)

Paper Received Date: 09th March 2024

Paper Acceptance Date: 11th April 2024

Paper Publication Date: 19th April 2024

Abstract

The paper profiled patients with hypertension and diabetes between year 2018 and 2022 in University of Benin Teaching Hospital (UBTH) Edo State Nigeria. Hypertension and Diabetes are two leading diseases in Africa especially the low-income countries like Nigeria, what is however unknown is the rate of prevalence, pattern of spread and socio-demographic distribution of the diseases in the recent time. Extant literature on diabetes and hypertension were reviewed and the study was anchored on grounded theory. Using qualitative approach, records of reported cases of Hypertension and Diabetes were obtained from the record unit of UBTH, profiled and results statistically analyzed. Result of the analysis showed a high prevalence of the two diseases however, hypertension appeared three times more than diabetes during the period under review. It also showed that, females and adult population recorded the highest figure of cases of hypertension and diabetes compared with males, the elderly and children. Similarly, married men and women were the most affected group by hypertension and diabetes compared with the singles, divorced, and widows/widowers. Some of the reasons adduced to these findings include; increasing work and domestic pressure, poor socio-economic factors, unguarded lifestyle, and lack of physical exercises among the adult population in the society. The paper recommends a critical review of government policy that can improve the socio-economic life of the citizens, adoption of healthy lifestyle, and creating time for regular physical exercises among the adult population.

Keywords: Diabetes, Hypertension, Nigeria, Patients, Public hospitals, Profiling, Socio-demographic, University of Benin Teaching Hospital.

Introduction

Two of the diseases indicted in literature for high mortality in Africa especially Nigeria is hypertension and diabetics. The World Health Organization (WHO) key facts on hypertension revealed that an estimated 1.28 billion adults aged 30–79 years worldwide have hypertension, with about two-thirds of this number living in low- and middle-income countries. An estimated 46% of adults with hypertension are unaware that they have the condition. While less than half of adults (42%) with hypertension are diagnosed and treated. Approximately 1 in 5 adults (21%) with hypertension have it under control. Hypertension is a major cause of premature death worldwide (World Health Organization 1).

Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure. Blood is carried from the heart to all parts of the body in the vessels. Each time the heart beats, it pumps blood into the vessels. Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The higher the pressure, the harder the heart has to pump. It is a serious medical condition and can increase the risk of heart, brain, kidney and other diseases. It is a major cause of premature death worldwide, with upwards of 1 in 4 men and 1 in 5 women – over a billion people – having the condition. The burden of hypertension is felt disproportionately in low- and middle-income countries, where two thirds of cases are found, largely due to increased risk factors in those populations in recent decades (World Health Organization 2).

Diabetes is also very deadly especially among diseases ravaging Nigeria. The World Health Organization (WHO) key facts on diabetes revealed that the number of people with diabetes rose from 108 million in 1980 to 422 million in 2014. Prevalence has been rising more rapidly in low- and middle-income countries than in high-income countries. Diabetes is a major cause of blindness, kidney failure, heart attacks, stroke and lower limb amputation. Between 2000 and 2019, there was a 3% increase in diabetes mortality rates by age. In 2019, diabetes and kidney disease due to diabetes caused an estimated 2 million deaths (World Health Organization 3).

Diabetes on the other hand, is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood glucose. Hyperglycemia, also called raised blood glucose or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body's systems, especially the nerves and blood vessels.

There is no doubt that the declining life expectancy in developing countries like Nigeria is accounted for by hypertension and diabetes but what we probably need to find out further is their magnitude and socio-demographic distribution. This will not only broaden the understanding of the stakeholders but helps in diagnosis and treatment with a view to stemming the tide. Although there are several unreported cases of hypertension and diabetes in the country, it is easier to work on the reported cases in public hospitals than the unreported cases. Thus, this paper examined the trend and distribution of reported cases of hypertension and diabetes between 2018 and 2022 in University of Benin Teaching Hospital (UBTH) Edo State, Nigeria. The two research questions that guided the study are; what is the socio-demographic distribution of hypertension and diabetes cases between 2018 and 2022 and which group is the most prevalent?

Literature Review

Diabetes mellitus and hypertension are among the most common diseases and cardiovascular risk factors, respectively, worldwide, and their frequency increases with increasing age. The prevalence of hypertension and diabetes in developing countries can be attributed to several factors, which include lifestyle changes, urbanization, globalization, and limited access to healthcare resources. The urbanization and changes in lifestyle pattern, such as increased consumption of processed foods, sedentary behaviour, and reduced physical activity, contributed to the rising prevalence of hypertension and diabetes. Findings from serial surveys show that an increasing prevalence of hypertension and diabetes in developing countries are possibly caused by urbanization, ageing population, changes to dietary habits, and social stress. The high rates of illiteracy, coupled with poor access to healthcare facilities, bad dietary habits, poverty, and high costs of drugs have also contributed to poor management and control of hypertension and diabetes (Ibrahim Mohsen and Damasceno Albertino, 2012).

The prevalence of hypertension and diabetes in developing countries such as Nigeria, can be attributed to several factors, which include lifestyle changes, urbanization, globalization, and limited access to health resources. The rapid urbanization and changes in lifestyle patterns such as increased consumption of processed foods, sedentary behaviour, and reduced physical activity, contributed to the rising prevalence of hypertension and diabetes (World Health Statistics 2012).

Urban areas in developing countries often experience a higher prevalence of hypertension and diabetes compared to rural areas. This can be attributed to factors such as increased stress levels, unhealthy diets, and reduced physical activity (Abdelbagi, Musa, Musa et al, 2021). Globalization has led to the adoption of western dietary patterns and sedentary lifestyles in many developing countries. The shift towards unhealthy diets, high in processed foods and sugary beverages, has contributed to the increased prevalence of hypertension and diabetes. Developing countries often face challenges in providing adequate healthcare resources, including screening, diagnosis, and treatment for hypertension and diabetes. Limited access to healthcare facilities, healthcare professionals, and affordable medication can hinder effective management of these conditions.

The prevalence of hypertension and diabetes among black people can be attributed to combination of genetic, environmental and socio-economic factors. These key factors contribute to the higher prevalence of both hypertension and diabetes. Certain genetic variations and predisposition can increase the risk of developing hypertension and diabetes. Studies have shown that black individuals may have a higher prevalence of genetic markers associated with hypertension and diabetes.

Grounded theory was adopted for this study. The grounded inductive theory has been described by (Leininger et al, 1981) as one approach to the development of inductive theory. According to their argument, if one conceptualizes from the data, and if the data have been accurately recorded, then the constructs and categories must arise fitting the data. Theory grounded in reality must provide an explanation of events as they occur and thus it is less likely to be invalidated by prevailing paradigms. Grounded theory assumes the existence of a process where hypotheses are tested or research question are answered as they arise from the research. The grounded inductive theory postulate that the participants in the study (Patients with Hypertension and Diabetes) were used to back-up the conceptualization of the variables and the relationship that exist between them. In other words, a conceptual framework that link-up the variables in this study are explained with the use of data obtained from them.

Historical background of University of Benin Teaching Hospital

The University of Benin Teaching Hospital (UBTH) located in Benin City, Edo state Nigeria. It is a prominent healthcare institution situated in the South-South geopolitical zones of Nigeria providing medical services to a diverse population across the six geopolitical zones in Nigeria and for people across the globe. It is a multi-specialty Federal Tertiary Health Institution located in Benin City, Edo State in southern Nigeria. The hospital was established as the Midwest Medical Centre in 1971 and renamed University of Benin Teaching Hospital. It was officially opened to the public on the May 12, 1973.

UBTH is one of the largest teaching hospitals in Nigeria with a bed capacity of 900 and is a major referral centre for highly specialized healthcare services for persons within Edo State and the entire south-south region of the country. There are facilities and human resources for virtually all specialties of clinical and laboratory medicine. Apart from being a tertiary health facility, UBTH also offers primary care at the Comprehensive Health Centres in the rural communities of Ogbona and Udo, both in Edo State.

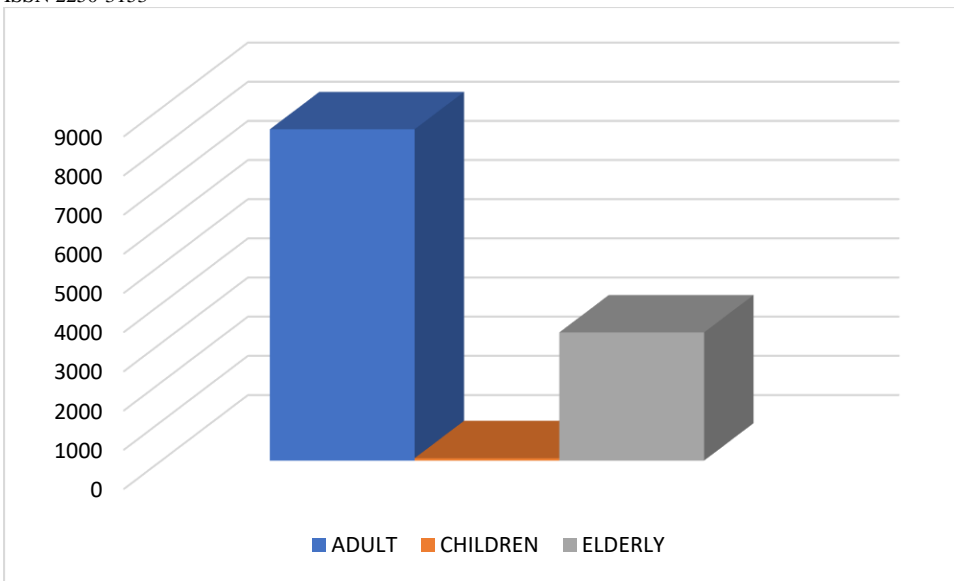
The Hospital is involved in training middle and high-level manpower including Resident Doctors, Nurses, Midwives, Post-basic Nurses, Medical Laboratory Scientists, and Medical Laboratory technologists, Health Record Officers, among others. We also train medical students as the Teaching Hospital of the University of Benin.

Materials and Method

The study utilized cross-sectional descriptive survey design to study a total population of 11,789 hypertensive and 3,325 diabetes cases documented by UBTH between 2018 and 2022. Secondary data (Hospital Records) was obtained from the hospital management and descriptive statistical tools such as frequency distribution, percentage, mean, standard deviation and graphs used for data analysis. Socio-demographic variables such as; age, gender, marital status, occupation of the patients was profiled.

Results

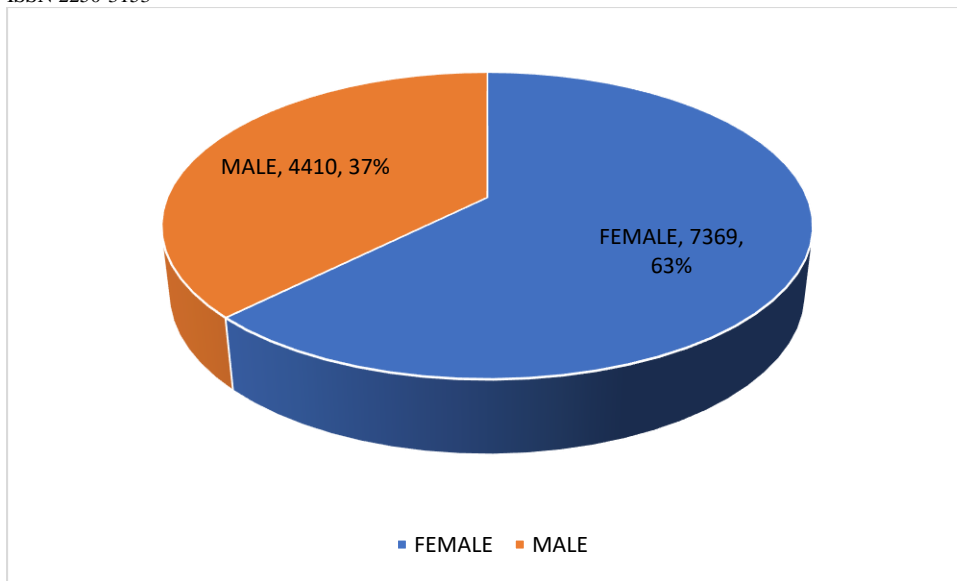
The results of data analysis on figure 1 showed that out of 11,789 hypertension patients recorded during the period under consideration; 71% were adult, 27.7% were elderly, while 0.6% were children. This means that, the adult population are the most affected followed by the elderly group.



Source: 2023 Authors Field Report

Fig 1: Bar chart showing the Distribution of Hypertensive Patients by Age groups

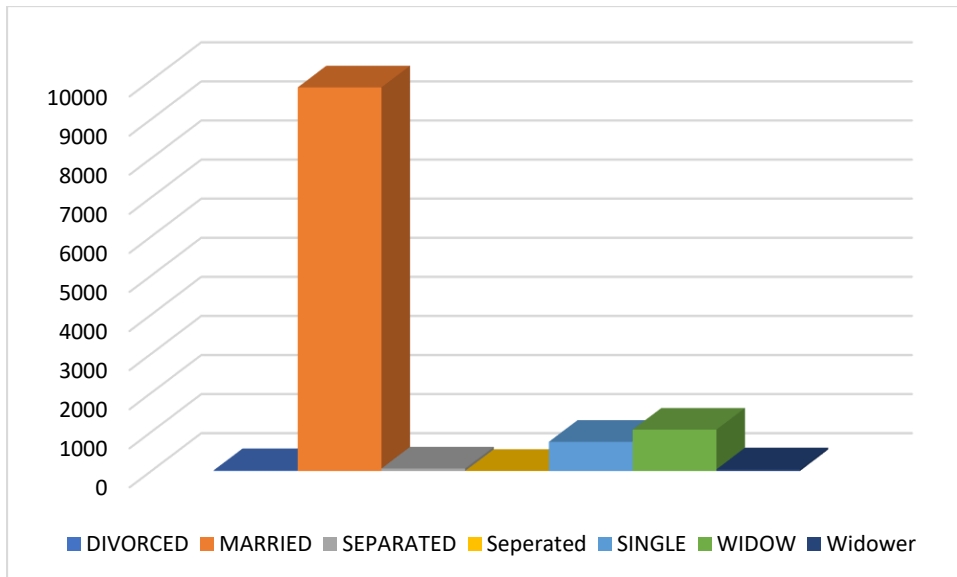
The findings of this study on figure 2 revealed that, 63% of the patients who reported cases of hypertension were females while 37% were males. This implies that significant number of females had cases of hypertension during the period under review.



Source: 2023 Authors Field Report

Fig 2: Pie chart showing the Distribution of Respondents with Hypertension by Gender

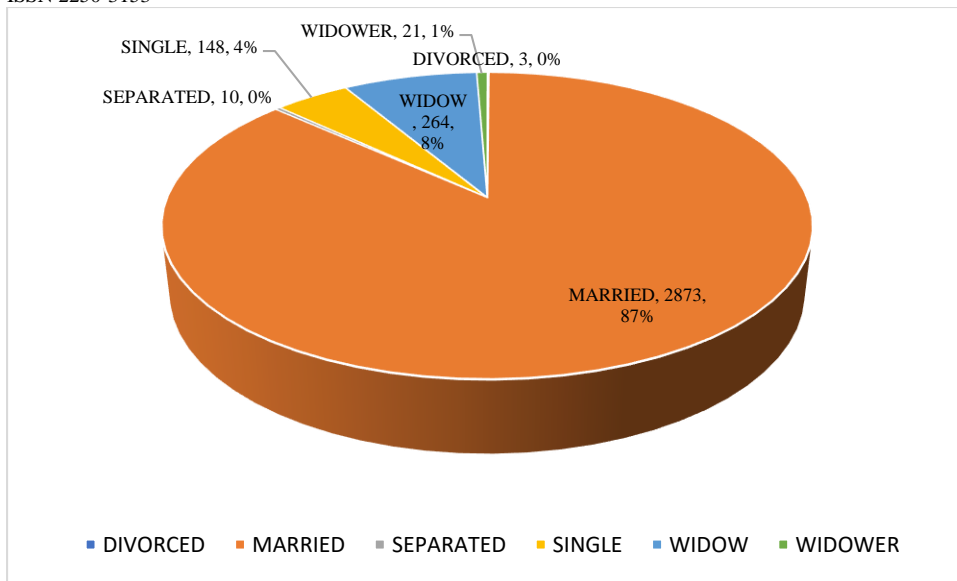
Figure 3 indicated the distribution of hypertensive patients by marital status. Out of 11,789 patients with hypertension reported during the period under review, 0.4 % were divorced, 83.3 % were married, 0.6 % were separated, 6.3% were singles, 9.0% were widows, while 0.4 % were widowers. Thus, majority of patients with hypertension within the period under review are married men and women.



Source: 2023 Authors Field Report

Fig 3: Histogram showing the Marital status Distribution of Respondents with Hypertension.

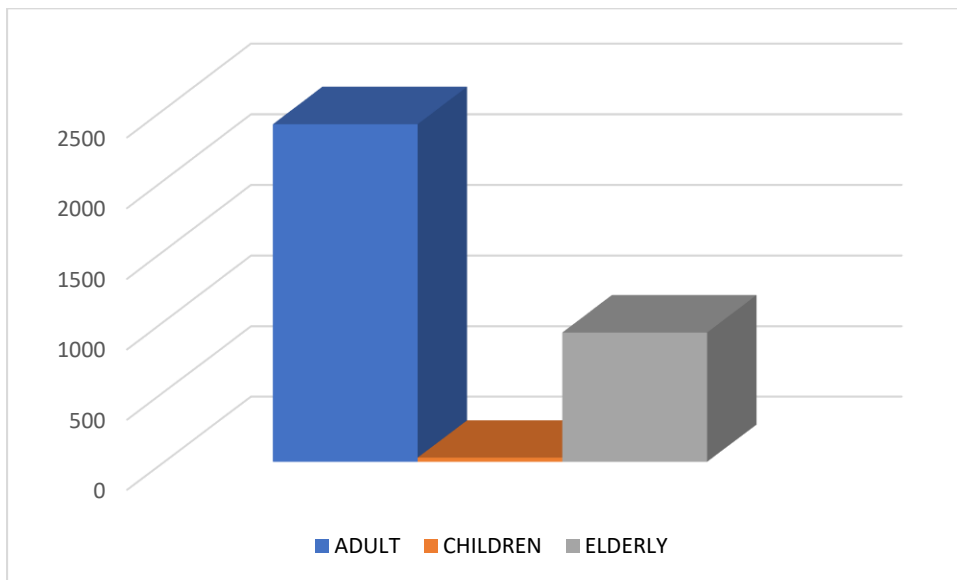
Figure 4 displayed the distribution of diabetes patients by marital status. A total of 3,325 patients with diabetes were recorded during the five- year period, out of which; 0.3 % were divorced, 86.4% were married, 0.3 % were separated, 4.5 % were single, 7.9 % were widow, 0.6 % are widower. From the analysis therefore, the highest percentage of diabetic's patients are married, and the number is outrageously high.



Source: 2023 Authors Field Report

Fig 4: Pie chart showing the Distribution of Diabetes Patients by Marital status

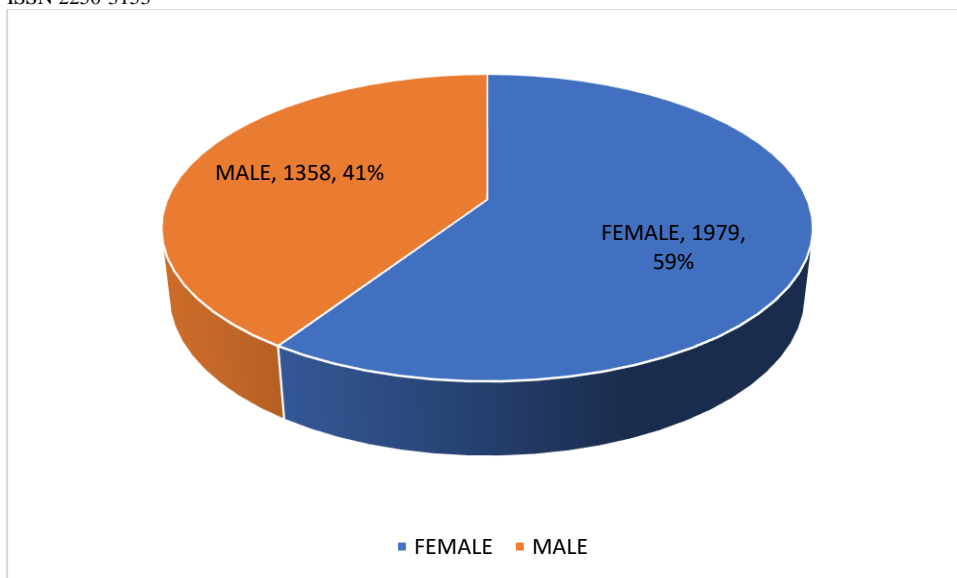
Figure 5 showed the distribution of patients with diabetes by age groups. A total of 3,344 diabetics patients was recorded during the five - year period under consideration. The highest percentage of the patients were adults (71.6 %), followed by the elderly (27.5 %), while the least was from the children (0.9%).



Source: 2023 Authors Field Report

Fig 5: Bar chart showing the Distribution of Diabetes Patients by Age group

Figure 6 is a Pie chart showing gender distribution of the diabetic's patients recorded during the five- year period. Three thousand three hundred and forty-four diabetics patients' cases were recorded, out of which 59.4% were females, while 40.6 % are males.



Source: 2023 Authors Field Report

Fig 6: Pie chart showing the Distribution of Diabetes Patients by Gender

Discussion

The paper examined 11,789 reported cases of hypertension and 3,344 diabetics between year 2018 and 2022 in University of Benin Teaching Hospital, and analyzed the data graphically using frequency distribution and percentages. The study aimed at profiling the patients using; age groups, gender and marital status, and also identify the most prevalent group among them. The paper revealed that hypertension and diabetes are prevalent during the period under review. Hypertension occurred three times more than diabetes during the period under review meaning, hypertension cases is highly more prevalent than diabetes in public hospitals in Nigeria.

The difference in prevalence ratio is consistent with the World Health Organization (WHO) key facts on hypertension which revealed that about, 1.28 billion adults aged 30–79 years worldwide have hypertension, with about two-thirds of this number living in low- and middle-income countries (World Health Organization 1) whereas, the WHO key facts on diabetes revealed that the number of people with diabetes rose from 108 million in 1980 to 422 million in 2014. Prevalence has been rising more rapidly in low- and middle-income countries than in high-income countries (World Health Organization 3).

The paper also revealed that, adult population were the most vulnerable group affected by hypertension and diabetes during 2018 and 2022. About two third of the total number of reported cases of hypertension and diabetes were from adult population, and more than twice the number of the elderly with hypertension and diabetes cases. This confirmed the WHO report that approximately 1 in 5 adults (21%) with hypertension have it under control and hypertension appeared to be a major cause of premature death worldwide (World Health Organization 1). It went further to say that, an estimated 46% of adults with hypertension may not be aware that they have the condition while less than half of adults (42%) with hypertension are diagnosed and treated. Approximately 1 in 5 adults (21%) with hypertension have it under control. Hypertension is a major cause of premature death worldwide. In a similar finding, there was a 3% increase in age-standardized mortality rates from diabetes between year 2000 and 2019, and this occurred in lower-middle-income countries, the mortality rate due to diabetes increased 13% (World Health Organization 1).

This study also indicated that more cases of hypertension and diabetes came from females than males during the period under consideration. In fact, almost double the number of cases for men were recorded for females in hypertension while slightly higher figure of men was recorded for females in diabetes. This finding is not consistent with literature as gender has not been found to be a very strong determinant of hypertension and diabetes. Although the African Region of the World Health Organization (WHO) has the highest prevalence of hypertension (27%) the increase was traced principally to a rise in hypertension risk factors in African population (Chobanian & Hill, 2000).

Several studies have reported the increasing prevalence of hypertension in Africa and Nigeria being the most populous country in Africa, is also a major contributor to the increasing burden of hypertension in the continent. Between 1995 and 2020, the estimated age-adjusted prevalence of hypertension increased from 8.5% to 32.5 but specifically, gender has not been fingered as an issue in hypertension. Findings from serial surveys had also confirmed an increasing prevalence of hypertension and diabetes in developing

countries and attributed this to urbanization, ageing population, changes to dietary habits, and social stress (Damasceno Albertino, 2012). The high rates of illiteracy, poor access to healthcare facilities, bad dietary habits, poverty, and high costs of drugs have also contributed to poor management and control of hypertension and diabetes in developing countries like Nigeria. (Mohsen & Albertino, 2012).

However, we may situate the high rate of hypertension in women to absence or lack of sufficient physical exercises. Most Nigerian women work round the clock to support their families and meet other demands. Economically, they engage in trading activities to support their families financially, they cook, clean houses, do laundry services at home, more involved in religious activities in churches and mosques, and a host of other activities that left them with little or no time for physical exercises (Ibrahim & Damasceno, 2012). Ironically, physical activity and/or exercise such as casual or brisk walking has been shown to effectively delay development of hypertension and reduce blood pressure (BP). Most professional and government organizations now recommend moderate-intensity aerobic exercise for at least 30 min at least 3 days a week or resistance exercise 2–3 days a week. Generally, exercise sessions can either be continuous for 30 min or made up of short intervals of at least 10 min for a daily total of 30 min. Regular daily exercise can provide a 5 mmHg decrease in SBP, which could be translated into a 9% reduction in mortality from coronary heart disease, a 14% reduction in mortality due to stroke and a 7% reduction in all-cause mortality (Ibrahim & Damasceno, 2012).

Another possible reason the reason for high rate of hypertension among women may be traceable to increase in feminine roles and sometimes conflicting responsibilities confronting women in Nigeria. In contemporary time, elite women combine domestic responsibilities with workplace demand (which might be sometimes administrative/managerial), and increasing political participation in governance. These are by no means stressful and can affect the health condition of the individual whenever there is conflict (Carey & Muntner 2019).

The marital status profiling of the hypertensive and diabetes patients showed that a very high proportion of the patients are married. This finding is strange as hypertension and diabetes have not been closely related to marital status. However, World Health Statistics (2019) indicated that hypertension is closely related to the rapid urbanization and changes in lifestyle patterns such as increased consumption of processed foods, sedentary behaviour, and reduced physical activity, have greatly contributed to the rising prevalence of hypertension and diabetes. Many married men and women worked and lived in urban centers where consumption of processed foods and sedentary behaviours are rampant, coupled with less time for physical activity. This finding could also be attributed to the pressure of family and domestic demands that often confront married men and women in the traditional African society which is not present for singles as evident from the lower rate of hypertension posted by the singles in the study. Abdelbagi, Musa, Musa (2021) reported that, globalization has led to the adoption of western dietary patterns and sedentary lifestyles in many developing countries and the shift towards unhealthy diets, high in processed foods and sugary beverages, has contributed to the increased prevalence of hypertension and diabetes.

Conclusion

From the findings of this study, it could be concluded that hypertension and diabetes were highly prevalent in Nigeria as indicated by the number of reported cases in UBTH between 2018 and 2022. Although, the rate of reported cases of hypertension was higher than diabetes, the two followed the same pattern of socio-demographic distribution. Adults, females, and married people were highly affected by hypertension and diabetes during the five- year period of review. This pattern of manifestation is a pointer to the increasing vulnerability of these categories of people in the society especially in low- income countries like Nigeria. Many reasons were adduced to this occurrence, ranging from unguided lifestyle, poor dietary standard, lack of physical exercises and many other risk factors.

A cursory look at the pattern and spread of distribution showed that the group of people mostly affected by these two diseases are in their active working ages and constitute the most economically viable population in the economy. Concerted efforts should to be made by the Federal, State, and Local governments in Nigeria to bring the rate of these diseases down considerably through improved health care services and introduction of socio-security services to the citizenry. Management of various organizations should improve the working conditions of their employees, while the individuals should review their life style in relation to the health requirements peculiar to them. The various ministries of health and hospital management should equip the hypertension and diabetes ward with necessary equipment's and trained personnel that can cope with the uosurge in these two diseases. Government should also create investment friendly environment that can pull many people out of government jobs and make them entrepreneurs.

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APPENDIX 1: MAP OF NIGERIA SHOWING THE SIX GEOPOLITICAL ZONES



APPENDIX 2: MAP OF NIGERIA SHOWING THE THIRTY- SIX STATES OF THE FEDERATION

