

Assessing The Associated Risk Factors of Hypertension Among Adults in Ahiazu Mbaise Local Government Area, IMO State

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Abstract—

Background: Hypertension is a leading cause of morbidity and mortality worldwide and a major public health concern in Nigeria. Its increasing prevalence is closely linked to demographic transitions and unhealthy lifestyle practices. However, local-level data on specific risk factors remain limited in many communities, including Ahiazu Mbaise, Local Government Area of Imo State.

Methods: A cross-sectional descriptive study was conducted among adult residents of Ahiazu Mbaise LGA. Data were collected using structured questionnaires and blood pressure measurements. Information on socio-demographic characteristics, dietary habits, tobacco use, alcohol consumption, physical activity, obesity, and diabetes status was obtained. Descriptive and inferential statistics were used to determine the prevalence of hypertension and its associated risk factors.

Results: The overall prevalence of hypertension among respondents was 65%, with a slightly higher prevalence among males (66.7%) compared to females (64.3%). Hypertension increased markedly with age, peaking at 73.4% among those aged 51–60 years. Obesity was strongly associated with hypertension, as 79.5% of obese respondents were hypertensive compared with 58.2% of non-obese respondents. Physical inactivity also showed a strong relationship, with 81.1% of inactive individuals being hypertensive compared with 52.8% among those who were physically active. High proportions of hypertension were also observed among respondents with unhealthy dietary practices, alcohol consumption, and tobacco use.

Conclusion: Hypertension is highly prevalent among adults in Ahiazu Mbaise, LGA, with several modifiable lifestyle factors contributing to its occurrence. The findings highlight the need for community-based health education, routine screening, and interventions promoting healthy diets, regular physical activity, weight management, and reduced alcohol and tobacco use.

Keywords: Hypertension, Prevalence, Risk Factors, Adults, Obesity, Physical Inactivity, Diet, Alcohol, Tobacco.

I. BACKGROUND

Hypertension is one of the most significant preventable causes of morbidity and mortality worldwide. It is a major risk factor for cardiovascular diseases (CVDs), including stroke, coronary heart disease, heart failure, and chronic kidney disease. The World Health Organization revealed that hypertension affects approximately 1.28 billion adults aged 30–79 years globally, with nearly two-thirds of cases occurring in low- and middle-income countries [1]. Despite its high prevalence, about 46% of adults with hypertension are unaware of their condition, and only a small proportion achieve adequate blood pressure control [1].

Globally, cardiovascular diseases remain the leading cause of death, accounting for an estimated 17.9 million deaths annually, representing about 32% of all global deaths and it happens that hypertension is the most important modifiable risk factor contributing to this burden [1]. The increasing prevalence of hypertension is largely driven by population growth, ageing, urbanization, sedentary lifestyles, unhealthy diets, tobacco use, and harmful alcohol consumption [2]. Over the past three decades, the number of adults living with hypertension has nearly doubled. This increase has been particularly pronounced in low- and middle-income countries, where awareness, treatment, and control rates remain low.

Hypertension is often referred to as the “silent killer” because it typically manifests with no obvious symptoms until serious complications occur. Uncontrolled hypertension significantly increases the risk of stroke, myocardial infarction, heart failure,

kidney failure, and premature death [3]. It is estimated that hypertension accounts for more deaths worldwide than any other modifiable risk factor [2]. The growing burden of hypertension in Africa has been widely linked to rapid urbanization, nutritional transition, increased intake of processed and high-salt foods, reduced physical activity, and rising levels of overweight and obesity. Contemporary reviews and meta-analyses across the continent consistently identify these lifestyle and demographic shifts as major drivers of the hypertension epidemic [4], [5]. In Nigeria, hypertension has become a significant public health concern, with prevalence rates rising over recent decades. A systematic analysis of national data reported an age-adjusted prevalence of approximately 32.5% among adults in 2020, reflecting a substantial increase in the number of affected individuals compared with earlier decades [5]. Similarly, a nationwide survey of Nigerian adults found that about 38% were hypertensive, further confirming the high and increasing burden of the condition across both urban and rural populations [6]. These trends are largely attributed to ongoing lifestyle transitions, urban expansion, dietary changes, and declining levels of physical activity. There are several risk factors which have been revealed in the development of hypertension. These include age, sex, genetic predisposition, obesity, physical inactivity, excessive salt intake, alcohol consumption, and smoking. Age is one of the most important determinants, as blood pressure tends to increase with advancing age due to structural and functional changes in the arterial system [3]. Studies have also shown that men generally have higher blood pressure levels than women in early adulthood, while the prevalence among women increases after menopause [7]. Another major contributor to hypertension is obesity. Excess body weight increases cardiac output and vascular resistance, leading to elevated blood pressure. Additionally, high sodium intake and low consumption of fruits and vegetables have been strongly associated with elevated blood pressure levels [3]. Socioeconomic factors also influence the prevalence and control of hypertension. Individuals from lower socioeconomic backgrounds are more likely to experience uncontrolled hypertension due to limited access to healthcare services, inadequate health education, and financial constraints [1]. In many developing countries, including Nigeria, hypertension remains underdiagnosed and poorly controlled because of weak health systems, limited screening programs,

and low awareness levels. Hypertension is said to be a chronic medical condition in which arterial blood pressure remains persistently elevated. According to the 2017 American College of Cardiology/American Heart Association (ACC/AHA) guidelines, hypertension is diagnosed when systolic blood pressure is 130 mmHg or higher and/or diastolic blood pressure is 80 mmHg or higher [3]. However, many international guidelines, including WHO recommendations, still use a threshold of 140/90 mmHg for diagnosis and treatment decisions in the general population [1]. Blood pressure is expressed as two values: systolic and diastolic pressure. Systolic pressure represents the force exerted on artery walls during heart contraction, while diastolic pressure represents the pressure when the heart relaxes between beats. Persistent elevation of these values increases the risk of damage to vital organs such as the heart, brain, kidneys, and eyes.

Despite the availability of effective medications and preventive strategies, hypertension remains poorly controlled in many parts of the world. Global estimates suggest that only about 21% of adults with hypertension have their condition under control [1]. This highlights the need for improved awareness, early detection, and effective management strategies. Given the rising prevalence of hypertension globally and in Nigeria, it has become a major public health concern. Understanding its magnitude, associated risk factors, and complications is essential for developing effective prevention and control programs.

II. METHODS

Study area

The study was carried out in Ahiazu Mbaise Local Government Areas of Imo State. Ahiazu Mbaise Local Government Council is one of the 27 local government that make up Imo state. The Local Government is administered under the terms of the Constitution of the Federal Republic of Nigeria. Its headquarters is in the town of Afo oru. It has an area of 114 km² and an adult population of 157,875 according to 2024 National Population Commission projection. It is approximately located within longitude 7° 12'E -7°20E and latitude 5°30'N-5°38N. The Igbo ethnic group are the dominant tribal affiliation in Ahiazu Mbaise with Igbo and English as the commonly spoken languages.

Study design and sampling

A retrospective study design that deals with observation of risk factors affecting Hypertension was used for the study. A well-structured questionnaire was used for this study to interview participants as it was an ideal approach in determining the difference in risk factor associated with hypertension. The study population consisted of adult residents (18 years and above) in Ahaizu Mbaise Local Government Area, Imo State and they were 419 respondents. A Multi-stage sampling method was adopted for this study.

Data Collection

A well-structured questionnaire was used for this study and they were administered to the respondents with the help of trained field assistants. Blood pressure measurements was also employed. 6 field

assistants were trained for five days and the best four were selected. The information from the respondents was obtained face to face with them as a means for easy explanation and apprehension. The literate respondents were allowed to fill the questionnaire themselves while the non-literate respondents were asked in local languages and responses were filled by the researchers.

Data Analysis

The data was collated by the researcher manually and the entries were made into computer by a statistician. The data was analyzed using Statistical Package for Social Science (SPSS 22.0). based on research questions and hypothesis and was presented in tables. Qualitative data was presented with mean, frequency and percentages while inferential analysis was done using anova.

III. RESULTS

Table 1: Socio-demographic Characteristics of the Subjects under Study

Socio-demographics	Frequency (N=419)	Percentage (%)
Gender		
Male	126	30.0
Female	293	70.0
Age (years)		
18-30	29	6.9
31-40	47	11.2
41-50	122	29.1
51-60	115	27.4
61-70	57	13.6
71-80	22	5.3
81&above	27	6.5
Marital Status		
Single	36	8.6
Married	254	60.6
Separated	27	6.4
Widowed	102	24.4
Highest level of Education		
No Formal	67	16.0
Primary	86	20.5
Secondary	140	33.4
Tertiary	126	30.1
How long have you been leaving in this LGA		
Less than 6 months	11	2.6
6-11 months	8	2.0
12-23 months	59	14.0
24 months and above	341	81.4
Occupation		

Unemployed	42	10.0
Self employed	42	10.0
Farmer	61	14.5
Trader	142	33.9
Civil servant	99	23.6
Business	33	8
Average Monthly Income		
< 18,000	103	24.6
18,000-50,000	95	22.6
51,000-100,00	116	27.7
>100,000	105	25.1

Table 1 shows that the respondents were 419. Majority of the respondents were 41-50 years of age. The males were the least represented, 126 males (30%), while the females have the greater number of 293 (70%) and it happened that majority of the respondents were married.

Table 2: Prevalence of Hypertension among the respondents

Hypertensive Status	Frequency (N=419)	Percentage(%)
Are you hypertensive?		
Yes	272	65.0
No	147	35.0
Are you currently on any hypertensive drug (N=272)		
Yes	155	56.9
No	117	43.1
What is the duration of your hypertensive condition (N=155)		
< 6 months	5	3.2
6-12 months	62	40.0
1-5 years	33	21.3
> 5 years	55	35.5
Have any of your family member been diagnosed of hypertension (N=419)		
Yes	257	61.3
No	51	12.2
No Idea	111	26.50
If Yes, who (N=257)		
Parents	70	27.2
Sibling(s)	36	14.0
Uncle/aunt	48	18.7
Cousins	36	14.0
Others	67	26.1

Table 2 reveals that out of the 272 respondents that were hypertensive in the study, 155 (56.9%) were on hypertensive drugs, while the remaining 117 (43.1%) were not on any kind of hypertensive drugs. On the

duration of the dosage, majority 62 (40%) had been on drug for 6-12months, while others are 55 (35.5%) for 5years above, 33 (21.3%) for 1-5 years, with the least being 5 (3.2%) for less than 6 months. The

particular close family member affected more were parents 70 (27.2%), there is a tie between siblings and cousins with 36 (14.0%) then 67 (26.1%) for non-specific others.

Table 3: Dietary pattern of Respondents

Dietary pattern	Frequency (N=419)	Percentage(%)
How often do you eat fried food		
Never	46	11.0
Once daily	88	21.0
Twice or more weekly	157	37.5
Occasionally	128	30.5
How often do you eat fatty foods		
Never	19	4.5
Once daily	100	24.0
Twice or more weekly	137	32.5
Occasionally	163	39.0
How often do you eat fast food		
Never	67	16.00
Once daily	113	27.00
Twice or more weekly	213	51.00
Occasionally	25	6.00
How often do you take salty food		
Never	36	8.5
Once daily	78	18.5
Twice or more weekly	200	48.0
Occasionally	97	23.0
Other	8	2.0
How often do you eat fruits/ vegetables		
Once daily	184	44.0
Twice or more weekly	92	22.0
Occasionally	88	21.0
Other	55	13.0

Table 3 shows that food that are classified under fried food were eaten once daily by 88(21%), twice or more weekly by 157(37.5%) while the population that Never consumed fried food were 46(11%). For fatty food intake, majority of the respondents take fatty food occasionally 163(39%), while 137(32.5%) consume fatty food twice or more weekly. 100(24%)

of the respondents eat fatty food once daily and the least of all are 19(4.5%) whom never took fatty food as shown in Table 3. Fast-food consumption is represented in the table 3 below, stating that 67(16%) of the respondents never took fast food while 113(27%) patronize fast food daily, 213(51%) indicated they patronize fast food twice or more

weekly and 25(6%) patronize them occasionally. The frequency at which Salty food is being consumed shows that 36(8.5%) never consumed salty food, majority 200(48%) consumed salty food twice or more weekly, followed by those who consumed it occasionally 97(23%) and once daily 78(18.5%) as

represented in Table 3 below. Fruits and vegetables is eaten once daily by majority of the respondent 184(44%), twice or more weekly by 92(22) respondents as well as occasionally by 88(21) and taken randomly at other times by 55(13%) of the respondents.

Table 4: Smoking habits of Respondents.

Smoking Habit	Frequency (N=419)	Percentage(%)
Do you presently smoke tobacco		
Yes	88	21.0
No	331	79.0
The type of tobacco you smoke (N=88)		
Cigarette	19	21.1
Cigar	9	10.5
Snuff	60	68.4
How often do you smoke tobacco		
Once daily	49	55.3
Twice or more weekly	18	21.1
Occasionally	21	23.7
How many sticks do you take per day (N = 28)		
3 sticks	19	66.7
4 sticks	9	33.3

Table 4 indicates that the smoking status of the respondents was also represented in the table 4 below. 88(21%) of the respondents consume tobacco while a greater percentage of population 331(79%) do not smoke. Among the population who smoke tobacco, 19(21.1%) consume Cigarette, 9(10.5%) smoke Cigar while 60(68.4) took snuff. Majority

consume it at least once daily 49(55.3%), while 21(23.7%) consume it occasionally, then 18(21.1%) consume it twice or more weekly. Among those who smoke cigar 9(10.5) and cigarettes 19(21.1), 19(66.7%) take 1-3 sticks daily while 9(33.3%) smoke above 4 sticks a day.

Table 5: Physical Activity of Respondents

Physical Activity	Frequency (N=419)	Percentage(%)
Physically active		
Yes	410	98.0
No	9	2.0
Do you practice regular exercise (N=410)		
Yes	235	57.5

No		175	42.5
If yes, how long now have you been on regular exercise	(N=235)		
< 6 months		57	24.3
6-12 months		43	18.3
1-5 years		19	7.8
> 5 years		116	49.6
How best can we measure your level of physical activity	(N=235)		
< 30 mins, 2-3 times per week		82	34.8
30-60 mins, 2-3 per week		96	40.9
1-3 hrs, 2-3 times per week		57	24.3

Table 5 shows that majority of the respondents 410 (98%) are physically active while the remaining 9(2%) are physically inactive either due to disease or disabilities. Among respondents who are physically active, a larger number 235(57%) indicated that they practice regular exercise while 175(42.5%) mentioned they don't practice regularly. When asked about the duration of exercise, majority of the respondents indicated that they began exercise for more than 5 years 116(49.6%), a large number

43(18.3%) indicated to have started exercising for 6-12 months, while 57(24.3%) indicated in less than 6 months and finally, 19(7.8%) reported to have exercised for 1-5 years. Regarding the level and intensity of physical activity, majority of the respondents 96(40.9%) reported to exercise 30-60 minutes 2-3 times per week while 82(34.8%) and 57(24.3%) of the respondent indicated that they exercise less than 30 minutes 2-3 times every week and 1-3 hours 2-3 times every week respectively.

Table 6: Alcohol consumption habit of Respondents

Alcohol consumption	Frequency (N=419)	Percentage(%)
How often do you drink alcohol		
Never	242	58.0
Once daily	34	8.0
Twice or more weekly	63	15.0
Occasionally	80	19.0
How best can we measure your alcohol consumption	(N=177)	
< 14 units per week	120	67.9
14-20 units per week	27	15.5
21 units and above per week	30	16.7

Table 6 above presents that the Alcoholic consumption level of the respondents of this study. Most respondent indicated they never took alcohol 242(58%), while 80(19%) indicated they occasionally consume alcohol, the remaining respondents took alcohol once daily 34(8%) and twice or more weekly 63(15%) respectively as shown in the table below indicating that majority of the population abstained from alcohol. Among those who

consumed alcohol 177(42%), 120(67.9) consume at the frequency of less than 14 units per week, while 27(15.5%) consume alcohol at the frequency of 14-20 units per week, while 30(16.7%) consume alcohol at the frequency of 21 units and above each week. This indicates that majority consume low amount of alcohol <14 unit per week among the alcohol consumers in the respondents.

Table 7: Diabetes Status among Respondents

Diabetes Status	Frequency (N=419)	Percentage(%)
Have you ever been diagnosed of diabetes		
Yes	187	44.6
No	232	55.4
If yes, for how long (N=187)		
< 6 months	30	16.0
1-5 years	67	36.0
> 5 years	90	48.0
Are you currently on any antiglycemic agent/drug (N=187)		
Yes	161	86.0
No	26	14.0

Table 7 reveals the diabetic status of the respondents of this study. 187(44.5%) of the respondent indicated to be diabetic while the non-diabetic respondents were 232(55.5%). The duration of the diabetic condition was less than 6 months for 30(16%) of the respondents and 1-5 years for 67(36%) of the respondents while majority 90(48%) of the respondents indicated to have been diagnosed of diabetes for more than 5 years. Among those that are diabetic 187(44.5), 161(86%) were on drug while 26(14%) were not on any kind of anti-glycemic agent/drugs.

IV. DISCUSSION

This study assessed the Risk Factors of Hypertension Among Middle-Aged Adults in Ahaizu Mbaise Local Government Area, Imo State. The present study found a high overall prevalence of hypertension of 65%, with occurrence increasing progressively after the fourth decade of life and peaking in the sixth decade. This age-related increase in hypertension is consistent with contemporary epidemiological evidence both globally and within Nigeria. A large nationally representative survey conducted using the WHO STEPwise approach reported an age-standardized hypertension prevalence of 38.1% among Nigerian adults, with prevalence increasing sharply from 6.8% among individuals younger than 30 years to 63.0% among those aged 70 years and above [8]. This confirms the strong association

between advancing age and hypertension observed in the present study. Similar patterns have also been reported in other Nigerian nationwide surveys, where the mean age of hypertensive individuals was significantly higher than that of normotensive adults, further reinforcing the role of age as a major determinant of elevated blood pressure [5]. The high prevalence observed in this study may also reflect the ongoing epidemiological transition occurring in many low- and middle-income countries, including Nigeria. Rapid urbanization, dietary changes, reduced physical activity, and increasing life expectancy have contributed to a growing burden of non-communicable diseases, particularly hypertension. In the Nigerian nationwide survey, prevalence was especially high in the southern regions, reaching 52.8% in the South-East, which is geographically similar to the present study area [8]. This regional pattern further supports the plausibility of the high prevalence recorded in the present study. The predominance of respondents aged 51–60 years in this study also aligns with contemporary literature indicating that middle-aged adults represent a high-risk group for hypertension. Ageing is associated with structural and functional changes in the cardiovascular system, including arterial stiffening, endothelial dysfunction, and increased peripheral resistance, all of which contribute to elevated blood pressure. Furthermore, prolonged exposure to lifestyle-related risk factors such as high salt intake, obesity, alcohol consumption, and physical inactivity

tends to manifest clinically during middle age [5]. In addition, demographic patterns such as rural–urban migration may partly explain the higher proportion of older adults in the study population. Younger individuals often migrate to urban centres for employment and education, leaving behind an ageing rural population with a higher burden of chronic diseases. National survey data have shown that hypertension prevalence increases with age across both rural and urban populations in Nigeria, suggesting that demographic shifts may influence disease distribution patterns [8].

The present study found that excess salt intake and unhealthy dietary patterns were associated with hypertension among adults in Ahiazu Mbaise LGA. This finding is consistent with global and regional evidence indicating that dietary habits, particularly high sodium intake and low consumption of fruits and vegetables, are major modifiable risk factors for hypertension. The World Health Organization reported that excessive salt intake is one of the leading behavioural causes of raised blood pressure globally, contributing significantly to the burden of cardiovascular diseases [9]. In Nigeria, the nationwide survey conducted by [8] identified unhealthy dietary patterns, including high salt intake, as key behavioural determinants of hypertension among adults. Similarly, the systematic analysis by [5] reported that lifestyle factors such as unhealthy diet and obesity are major drivers of the increasing hypertension burden in Nigeria. At the regional level, a systematic review of hypertension in West Africa found that poor dietary habits and high salt consumption were consistently associated with increased hypertension prevalence across populations [10]. These findings support the present study's observation that frequent consumption of salty foods may have contributed to the high prevalence of hypertension in the study population.

This study observed a relatively low prevalence of smoking among respondents, although tobacco use was associated with hypertension among those who smoked. This finding aligns with global evidence demonstrating the hypertensive effects of tobacco consumption. According to the [9], tobacco use contributes to elevated blood pressure through mechanisms such as increased sympathetic nervous system activity, vascular inflammation, and arterial stiffness. In Nigeria, a nationwide analysis of socio-demographic and lifestyle factors associated with

hypertension reported that behavioural risk factors, including tobacco use, significantly contributed to elevated blood pressure among adults [11]. Similarly, [12] found that smoking was significantly associated with both hypertension and diabetes among adults in Enugu State. Although smoking prevalence was low in this present study, its presence still represents an important modifiable risk factor for hypertension. This finding is consistent with evidence that even low levels of tobacco exposure can contribute to cardiovascular risk over time [9].

This study revealed that most respondents were physically active in terms of daily routine activities, but fewer engaged in structured or regular exercise. This finding is consistent with contemporary evidence showing that insufficient physical activity is a major contributor to hypertension. [9] identifies physical inactivity as a key modifiable risk factor for hypertension, emphasizing that regular physical activity improves vascular function, reduces body weight, and lowers blood pressure. In Nigeria, [13] reported a statistically significant association between low physical activity and increased cardiovascular risk among patients with hypertension and diabetes. Similarly, [11], in a nationwide survey, identified physical inactivity as one of the major lifestyle factors associated with hypertension among Nigerian adults. These findings support the present study's observation that although many respondents engaged in routine daily activities, the lack of structured or regular exercise may have contributed to the high prevalence of hypertension.

Again, this present study showed that a large proportion of respondents who consumed alcohol were hypertensive, indicating a strong relationship between alcohol consumption and hypertension. This finding is consistent with global evidence showing the hypertensive effects of excessive alcohol intake. [9] recognizes alcohol consumption as a major modifiable risk factor for hypertension, noting that excessive intake increases blood pressure through mechanisms such as increased sympathetic activity and impaired vascular function.

In Nigeria, [11] reported that alcohol consumption was significantly associated with hypertension in the nationwide lifestyle and socio-demographic survey. Similarly, [12] found a significant association between alcohol consumption and hypertension among adults in Enugu State. These findings

corroborate the results of the present study, suggesting that alcohol consumption remains a significant behavioural determinant of hypertension among Nigerian adults.

This present study also found an association between diabetes and hypertension among the study population. This observation is consistent with contemporary evidence showing that the two conditions frequently coexist due to shared risk factors such as obesity, sedentary lifestyle, unhealthy diet, and ageing. The [9] identifies diabetes as an important comorbidity associated with hypertension and increased cardiovascular risk. Similarly, [5] reported that metabolic risk factors, including diabetes and obesity, contribute significantly to the rising burden of hypertension in Nigeria. In a hospital-based study, [14] reported a high prevalence of hypertension among patients with type 2 diabetes, emphasizing the close relationship between the two conditions. Likewise, [12] found that diabetes was significantly associated with hypertension among adults in Enugu State. These findings support the results of the present study and underscore the need for integrated screening and management strategies for both hypertension and diabetes among middle-aged and older adults.

V. CONCLUSION

This study has attempted to have a survey into the risk factors of hypertension and the prevalence of hypertension in Ahiazu Mbaise, L.G.A in Imo State. It was observed that increase in age, obesity, sedentary lifestyles, tobacco use and excessive salt intake is associated with increased risk of hypertension. With 65% prevalence of hypertension among the adult population, Ahiazu Mbaise is facing serious challenges in preventing hypertension as majority of the respondents have a great risk of hypertension. The high prevalence indicates a higher risk of the complications. Moreover, the attitude toward hypertension was poor. This means that People's awareness and effort towards the control of hypertension still remain poor. Perhaps, further qualitative study might be required to probe deep into the fundamental reasons for such negative attitude. In the main time, one of the cornerstones to achieving positive decrease in the prevailing risk factors hypertension is through public education. This calls for compulsory screening and educative programme in the form of seminars and conferences for all

categories of citizen to enhance awareness of hypertension and its risk factors.

VI. RECOMMENDATIONS

1. Based on the result and findings of this research, the investigator recommends that the reduction in intake of salty and unhealthy diets and it likes in other to decrease the risk of hypertension.
2. Adequate treatment and management care should be given to elderly persons with increased risk of hypertension due to age.
3. This subpopulation needs special attention including provision of accessible and equipped health facilities. Specific interventions should focus upon providing large scale of population screening for hypertension and adequate blood pressure control to mitigate the mortality and morbidity associated with hypertension while lowering of cost drug treatment for hypertension and its complication
4. There is need for a public health strategy that includes primary prevention via changes in the lifestyles of the general population, such as weight reduction, restriction of smoking and alcohol, increased physical activities and restriction in saturated fats and dietary sodium, would result in a lower prevalence of hypertension.

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