



Occurrence of Chronic Medical Conditions among Adults in a Rural Community in South-South Nigeria

Francis Osemhoahu Erah¹, Blessing Ilobekemen Otohbhiale², Idris Omoniyi Iyowun³, Bodeno Ehis⁴ and Noruwa Patience Ekhaton⁵

¹Department of Community Health, Ambrose Alli University, Ekpoma. Email: francozenith@yahoo.com, phone: +2348033546812

²Department of Surgery, Nigerian National Petroleum Corporation Medical Services Limited (NMSL), Abuja, Nigeria. Email: bioajet2013@gmail.com

³Department of Community Health, Ambrose Alli University, Ekpoma.

⁴Department of Community Medicine, Igbinedion University, Okada, Edo State, Nigeria.

⁵Department of Medicine, University of Benin Teaching Hospital, Edo State, Nigeria.

ABSTRACT

Background: Chronic medical conditions are prevalent worldwide and are the leading cause of morbidity and mortality. These conditions limit activities of daily living and have enormous impact on the economy of a family, Community and a country.

Objectives: The aim of this study was to assess the knowledge, self-reported prevalence and risk factors of hypertension, diabetes and asthma among adults of a rural community in Edo state, Nigeria

Methodology: This study was carried out amongst 124 respondents for the questionnaire administration selected using a cluster sampling technique. Data was analysed using IBM SPSS version 23.0. The Chi square test was used to test for association and the level of significance was set as $p < 0.05$.

Results: Majority had poor knowledge of the conditions. 75% had poor knowledge of hypertension, 85.5% had poor knowledge on diabetes, while 89.5% had poor knowledge on asthma. The prevalence of hypertension, diabetes and asthma was found to be 12.9%, 4.0% and 2.4% respectively. The significant risk factors associated with these chronic medical conditions include increasing age, family history alcohol intake, cigarette smoking and lack of regular physical activity.

Conclusion The knowledge of hypertension, diabetes and asthma was generally low among the respondents. The prevalence of hypertension, diabetes and asthma were 12.9%, 4.0% and 2.4% respectively. Risk factors associated with these conditions included increasing age, lack of regular physical exercise, cigarettes smoking, alcohol consumption and family history of the disease.

KEY WORDS: Adults, Chronic, Medical condition, Occurrence, Prevalence, Risk factors.

Introduction

Chronic medical condition is a physical or mental health condition that lasts more than one year and causes functional restrictions or requires ongoing monitoring or treatment (Raghupathi and Raghupathi, 2018 and Buhorff, Ruder and Bauman, 2018).

The population of older people is increasing in all countries of the world. A great majority (two thirds) of those over 60 years old live in developing countries, and this proportion is increasing steadily and will reach nearly three-quarters by the 2030s (Asiyanbola, 2005). However, in a country like Nigeria, where the inability of the government to cope with regular payment of pensions to the retired workforce; living in environments with weak health systems as well as acute lack of geriatrics care, is posing an enormous challenge to the health of older people (Ajomale, 2007). Chronic illnesses are major health concerns in both developing and developed nations (Nugent, 2008). They are a leading cause of mortality in the world, representing 63% of all deaths, 29 million deaths worldwide (Yack, Hawkes, Gould and Hofman 2004). The persistent and multifaceted impact of chronic conditions, which endure for extended periods and potentially a lifetime, necessitates a comprehensive investigation into their influence on an individual's physical, mental, and social well-being, with the goal of developing effective strategies for enhancing the overall quality of life for individuals affected by them. The extent of these conditions is widespread, affecting individuals across all age groups. According to WHO, about 422 million people worldwide have diabetes, the majority living in low-and middle-income countries, and 1.5 million deaths are directly attributed to diabetes each year. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades (WHO, 2020). Hypertension is a serious medical condition and can increase the risk of heart, kidney and others 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 (WHO, 2020). Asthma affected an estimated 262 million people in 2019 and caused 455 000 deaths (WHO, 2020). The prevalence of asthma can exhibit substantial difference across countries and regions. More advanced nations tend to document elevated asthma rates, possibly attributed to improved diagnostic capabilities and environmental influences. Conversely, developing countries may report lower prevalence figures, potentially concealing an underdiagnoses of the true extent of asthma.

Hypertension, diabetes and asthma can lead to serious health complications, including heart disease, stroke, kidney problems (in the case of hypertension), and long-term respiratory issues (in the case of asthma). Likewise, lifestyle factors play a significant role in the development and progression of these conditions. Research can inform individuals about preventive measures, such as adopting a healthy diet, regular exercise, and avoiding smoking. Understanding how these conditions affect different populations can help address health disparities and ensure that everyone has access to appropriate healthcare and resources. Evidence of gross knowledge of any of the conditions can help stimulate intervention on health awareness amongst people of the community on measures to prevent and effectively manage these conditions. The specific objectives of this study are to determine the knowledge of chronic medical conditions among adults in the community, to ascertain the prevalence of reported hypertension, diabetes mellitus, and asthma among adults in the community and to determine the risk factors to these chronic medical conditions among adults in the community.

Methodology

The study was a descriptive cross sectional study design carried out among 124 residents living in a rural community in south-south Nigeria. The participants were selected from all the adults in the community using a cluster sampling technique. The Community had five clusters and two clusters were randomly selected using Simple random sampling by balloting. All the adults aged 18 years and above who consent to participate in the study were sampled in the selected clusters but those found to be critically ill were excluded from the study and referred to the hospital for expert management. The sample size of 124 was obtained using Cochran formula for cross-sectional surveys with $n = \frac{Z^2 P Q}{d^2}$ where n is sample size, Z = Standard normal deviation, set at 1.96 to correspond to 95% confidence interval, P = The value for 'P' was taken from the prevalence of one of the three chronic medical conditions in the literatures in previous studies reported in this study which was 8.0% (Ozoh, Aderibigbe, Ayul, Desalu, Oridota and Olufemi, 2019). An adapted semi-structured questionnaire (Schapira, Fletcher, Hayes, Eastwood, Petterson and Erth, 2012) was employed for the study having obtained ethical approval from health research ethics committee from the nearest health institution. Statistical test of association between proportions was done by the use of appropriate test statistics using the Statistical Package for the Scientific Solutions (SPSS) version 23. Statistical level of significance was set at $p < 0.05$, Association between the dependent and independent variable was tested using Chi-square test. Results were presented in frequency tables and charts. Twenty questions were asked on knowledge. Good or poor knowledge of respondents were determined by awarding a score of 1 to every correct response and zero to every wrong response to these questions. Total obtainable score for correct response was 20 points (100%). A score of 15 and above (75% - 100%) were taken as good knowledge while a score of less than 15 (less than 75%) were regarded as poor knowledge.

Results

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency, n = 124	Percent
Age group		
<30	37	29.8
31-40	23	18.5
41-50	11	8.9
51-60	18	14.5
61-70	26	21.0
71-80	9	7.3
Sex		
Male	56	45.2
Female	68	54.8
Level of Education		
No formal	15	12.1
Primary	28	22.6
Secondary	31	25.0

Tertiary	50	40.3
Religion		
African traditional religion	5	4.0
Islam	12	9.7
Christianity	107	86.3
Marital status		
Widowed	6	4.8
Single	39	31.5
Married	79	63.7
Occupation		
Entrepreneur	13	10.5
Professional	13	10.5
Highly skilled	31	25.0
Semi-skilled	39	31.5
Unskilled	28	22.6
Tribe		
Esan	88	71.0
Etsako	12	11.4
Yoruba	6	4.8
Igbo	6	4.8
Itsekiri	5	4.0
Ika	2	1.6
Benin	2	1.6
Ijaw	1	0.8

There were more females (54.8%) than males (45.2%). More of the respondents had tertiary level of education (40.3%) and majority of the respondent were Christian (86.3%). More of the respondents were semi-skilled (31.5%) and majority were Esan by tribe (71%).

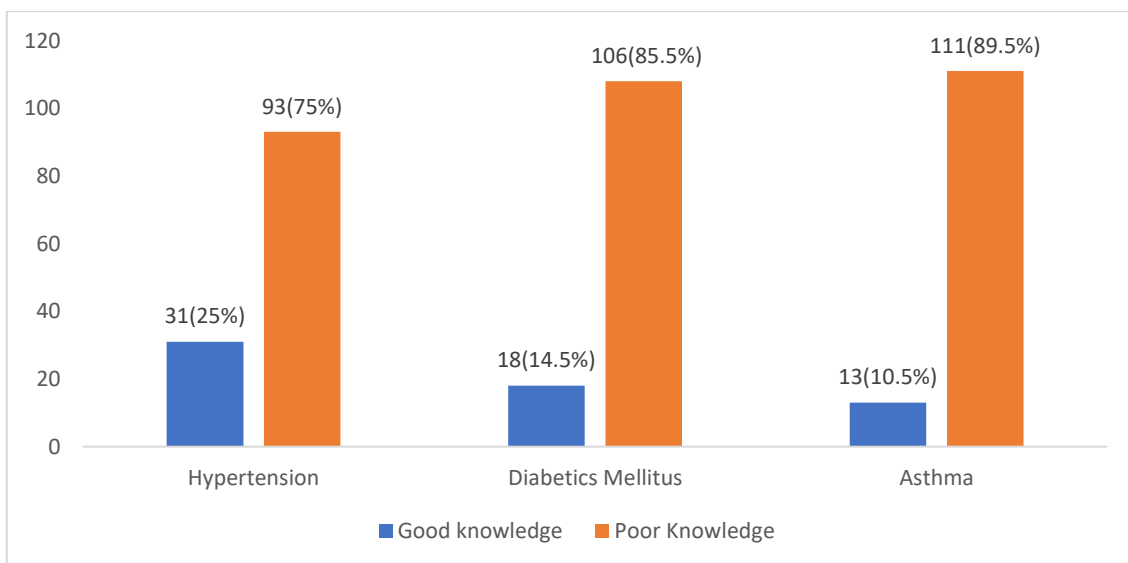


Fig. 1: knowledge of Hypertension, Diabetics Mellitus and Asthma among respondents

Majority of the respondents had poor knowledge of hypertension (75%), Diabetics Mellitus (85.5%) and Asthma (89.5%).

Table 2: Self-reported diagnosis of chronic medical conditions

Variables	Frequency n=124	Percent
Self-reported Diagnosis of HTN		
Yes	14	12.9
No	108	87.1
Self-reported diagnosis of DM		
Yes	5	4
No	119	96
Self-reported diagnosis of Asthma		
Yes	3	2.4
No	121	97.6

HTN= Hypertension

The prevalence of hypertension, diabetics and Asthma among the respondents were 12.5%, 4% and 2.5% respectively

Table 3: Risk factors for chronic medical conditions

Variables*	Frequency, n= 124	Percent
Family history of HTN		
Yes	53	42.7
No	71	57.3
Family history of DM		
Yes	17	13.7
No	107	86.3
Family history of Asthma		
Yes	12	9.7
No	112	90.3
Exercise		
Rarely	3	2.4
Regularly	24	19.4
Occasionally	97	78.2
Environment		
Smoky	1	0.8
Clean	33	26.6
Dusty	90	72.6
Smoking		
Occasionally	7	5.6
Never	117	94.4
Salt intake		
High	2	1.6

Low	27	21.8
Normal	95	76.6
Alcohol intake		
Daily	1	0.8
Never	40	32.3
Occasionally	83	66.9
Fruits and vegetable diet		
Rarely	1	0.8
Regularly	5	4.0
Occasionally	118	95.2

* Multiple responses, HTN=Hypertension

Family history of hypertension, Diabetes Mellitus and Asthma among the respondents were 42.7%, 13.7% and 9.5% respectively. Majority live in dusty environment (72.6%), a fifth of them exercise regularly and majority never smoke (94.4%). A few (0.8%) took alcohol daily and rarely eats fruits and vegetables (0.8%).

Table 4: Age, sex and occupation with prevalence of hypertension

Variable	Diagnosis of HTN		Total (%)	χ^2	p-value
	Yes	No			
Age					
31-40	2(8.7%)	21(91.3%)	23 (100)	13.508	0.008
41-50	2(18.2%)	9(81.8%)	11 (100)		
51-60	3(16.7%)	15(83.3%)	18 (100)		
61-70	7(26.9%)	19(73.1%)	26 (100)		
71-80	2(22.2%)	7(77.8%)	9 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		
Sex					
Male	9(16.1%)	47(83.9%)	56 (100)	0.912	0.34
Female	7(10.3%)	61(89.7%)	68 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		
Occupation					
Entrepreneur	4(30.8%)	9(69.2%)	13 (100)	3.725	0.434
Professional	1(7.7%)	12(92.3%)	13 (100)		
Highly skilled	3(9.7%)	28(90.3%)	31 (100)		
Semi-skilled	5(12.8%)	34(87.2%)	39 (100)		
Unskilled	3(10.7%)	25(89.3%)	28 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		

HTN= hypertension, χ^2 = Chi-square

More of the respondent in the age group 61-70 years (26.9%) had hypertension as compared to other age group and this association was found to be statistically significant. P=0.008. More Entrepreneur (30.8%) had hypertension as compared to other occupations but this association was not statistically significant. P=0.434

Table 5: Age, Sex and Occupation with prevalence of Diabetes

Variable	Diagnosis of DM		Total (%)	χ^2	p-value
	Yes	No			
Age					
31-40	2(8.7%)	21(91.3%)	23 (100)	6.072	0.153
61-70	3(11.5%)	23(88.5%)	26 (100)		
Total	5(4%)	119(96%)	124 (100)		
Sex					
Male	1(1.79%)	55(98.2%)	56 (100)	1.321	0.25
Female	4(5.88%)	64(94.1%)	68 (100)		
Total	5(4%)	119(96%)	124 (100)		
Occupation					
Highly skilled	3(9.7%)	28(90.3%)	31 (100)	3.344	0.431
Semi-skilled	2(5.12%)	37(94.8%)	39 (100)		
Total	5(4%)	119(96%)	124 (100)		

DM= Diabetics Mellitus, χ^2 = Chi-square

More respondents in the age group 61-70year (11.5%) had DM when compared to other age group but this association is not statistically significant. P=0.153

Table 6: Age, Sex and Occupation with prevalence of asthma

Variable	Diagnosis of Asthma		Total (%)	χ^2	p-value
	Yes	No			
Age					
<30	1(2.7%)	36(97.3%)	37 (100)	3.372	0.718
61-70	2(7.69%)	24(92.3%)	26 (100)		
Total	3(2.4%)	121(97.6%)	124 (100)		
Sex					
Female	3(4.4%)	65(95.6%)	68 (100)	2.511	0.113
Total	3(2.4%)	121(97.6%)	124 (100)		
Occupation					
Entrepreneur	1(7.7%)	12(92.3%)	13 (100)	5.259	0.098
Professional	1(7.7%)	12(92.3%)	13 (100)		
Unskilled	1(3.6%)	27(96.4%)	28 (100)		
Total	3(2.42%)	121(97.6%)	124 (100)		

χ^2 = Chi-square

More Entrepreneur and professionals (both 17.7%) had Asthma as compared to other occupation but his association is not statistically significant. P=0.098

Table 7: Knowledge and prevalence of hypertension

Knowledge of HTN	Diagnosis of HTN		Total (%)	χ^2	p-value
	Yes	No			
Poor	6(6.5%)	87(93.5%)	93 (100)	13.778	0.001
Good	10(32.3%)	21(67.7%)	31 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		

HTN= hypertension, χ^2 = Chi-square

More respondents with good knowledge had hypertension and this association was found to be statistically significant. P=0.001

Table 8: Knowledge and prevalence of diabetes

Knowledge of DM	Diagnosis of DM		Total (%)	Fisher exact	p-value
	Yes	No			
Poor	5(4.3%)	101(95.7%)	116 (100)	0.878	0.35
Good	0(0%)	18(100)	18 (100)		
Total	5(4%)	119(96%)	124 (100)		

DM= Diabetics Mellitus, χ^2 = Chi-square

More respondents with poor knowledge had DM but this association was not statistically significant. P=0.350

Table 9: knowledge and prevalence of asthma

Knowledge of Asthma	Diagnosis of Asthma		Total (%)	χ^2	p-value
	Yes	No			
Poor	2(1.8%)	109(98.2%)	111 (100)	1.697	0.193
Good	1(7.7%)	12(92.3%)	13 (100)		
Total	3(2.4%)	121(97.6%)	124 (100)		

χ^2 = Chi-square

More respondents with good knowledge of asthma had asthma but this was not statistically significant. P=0.193

Table 10: Risk factors and prevalence of hypertension

Risk Factors	Diagnosis of HTN		Total (%)	Test statistic	p-value
	Yes	No			
Family History					
No	1(1.41%)	70(98.6%)	71 (100)	$\chi^2=19.530$	0.001
Yes	15(28.3%)	38((71.7%)	53 (100)		
Total	16(12.9%)	108((87.1%)	124 (100)		
Salt intake					
High	0(0%)	2(100%)	2 (100)	Fisher's exact	0.636
Low	2(7.41%)	25(92.6%)	27 (100)		
Normal	14(14.7%)	81(85.3%)	95 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		
Fruits & Vegetables					

Rarely	0(0%)	1(100%)	1 (100)	Fisher's exact	0.571
Regularly	1(20%)	4(80%)	5 (100)		
Occasionally	15(12.7%)	103(87.3%)	118 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		
Smoking					
Occasionally	1(14.3%)	6(85.7%)	7 (100)	0.013	0.91
Never	15(12.8%)	102(87.2%)	117 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		
Alcohol					
Daily	0(0%)	1(100%)	1 (100)	Fisher's exact	0.633
Never	4(10%)	36(90%)	40 (100)		
Occasionally	12(14.5%)	71(85.5%)	83 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		
Exercise					
Rarely	0(0%)	3(100%)	3 (100)	Fisher's exact	0.153
Regularly	6(25%)	18(75%)	24 (100)		
Occasionally	10(10.3%)	87(89.7%)	97 (100)		
Total	16(12.9%)	108(87.1%)	124 (100)		

HTN= hypertension, χ^2 = Chi-square

More of the respondents with family history of hypertension (28.3%) had hypertension and this was found to be statistically significant with $p=0.001$. none of the other risk factors was found to be statistically significant

Table 11: Risk factors and prevalence of diabetes

Risk Factors	Diagnosis of DM		Total (%)	Fisher's exact	P-value
	Yes	No			
Family History					
No	0(0%)	107(100%)	107 (100)		0.001
Yes	5(29.4%)	12(70.6%)	17 (100)		
Total	5(4%)	119(96%)	124 (100)		
Fruits and Vegetables					
Rarely	0(0%)	1(100%)	1 (100)		0.776
Regularly	0(0%)	5(100%)	5 (100)		
Occasionally	5(4.2%)	113(95.8%)	118 (100)		
Total	5(4%)	119(96%)	124 (100)		
Smoking					
Occasionally	0(0%)	7(100%)	7 (100)		0.577
Never	5(4.3%)	112(95.7%)	117(100)		
Total	5(4%)	119(96%)	124 (100)		
Alcohol					

Daily	0(0%)	1(100%)	1 (100)	0.674
Never	2(5%)	38(95%)	40 (100)	
Occasionally	3(3.6%)	80(96.4%)	83 (100)	
Total	5(4%)	119(96%)	124 (100)	

DM= Diabetics Mellitus, χ^2 = Chi-square

More of the respondents with family history of DM had DM (29.4%) and this was found to be statistically significant. P=0.001. None other risk factors was statistically significant.

Table 12: Risk factors and prevalence of asthma

Risk Factors	Diagnosis of asthma		Total (%)	Fisher's exact	P-vale
	Yes	No			
Family History					
No	0(0%)	112(100%)	112 (100)	28.694	0.001
Yes	3(25%)	9(75%)	12 (100)		
Total	3(2.4%)	121(97.6%)	124 (100)		
Smoking					
Occasionally	0(0%)	7(100%)	7 (100)	0.184	0.668
Never	3(2.6%)	114(97.7%)	114(100)		
Total	3(2.4%)	121(97.6%)	124 (100)		
Environment					
Smoky	0(0%)	1(100%)	1 (100)	2.346	0.945
Clean	1(3%)	32(97%)	33 (100)		
Dusty	2(2.2%)	88(97.8%)	90 (100)		
Total	3(2.4%)	121(97.6%)	124 (100)		

More of the respondents with family history of asthma had asthma (25%) and this association was found to be statistically significant. P=0.001

DISCUSSION

Majority of the respondents in this study had poor knowledge of hypertension. This is similar to studies carried out in Auchi (Iyalomhen, Iyalomhen and Iyalomhen, 2010), Ghana (Agyei-Baffour, Tetteh, Quansah and Boateng, 2018), and Zimbabwe (Chimberengwa and Naidoo, 20129) where poor knowledge of hypertension among respondents was predominant, but in contradict studies done in South Africa (Jongen, Lalla-Edward and Vos, 2019) and Michigan, US(Oliveria, Chan, Macarthy, Davis and Hill, 2005) where majority of the participants had good knowledge of hypertension. Poor knowledge of hypertension may lead to delays in diagnosis, inadequate management, and failure to adopt lifestyle changes or adhere to prescribed treatments. This can result in increased morbidity and mortality from complications related to uncontrolled hypertension. Lack of awareness and education may further widen these disparities by impeding access to preventive measures, diagnosis, and appropriate treatment.

The knowledge of DM was also found to be poor among the participants in this study as 85.5% had poor knowledge on diabetes. This is similar to studies carried out in Egor (Obarisiagbon and Obi, 2020) and UAE (Al-maskari, El-Sadig, Al-Kaabi, Afandi, Negelkerke and Yeatts, 2013) but in contrast to studies carried out in Igbo-Ora (Adetona, Ogbo and Aina, 2019) and Ethiopia (Shiferaw, Gatew, Afessa, Asebu, Petrucka and Aynalem, 2020) where majority of the study participants had good knowledge on DM. Lack of awareness about the symptoms and risk factors of diabetes can lead to delayed diagnosis and treatment. Uncontrolled diabetes can result in serious complications such as cardiovascular disease, kidney failure, nerve damage, blindness, and lower limb amputations. Early detection and management are crucial for preventing or delaying these complications. Diabetes imposes a substantial burden on individuals, families, healthcare systems, and society as a whole. Poorly managed diabetes contributes to increased healthcare costs, hospital admissions, disability, and premature mortality. Inadequate knowledge about diabetes prevention, self-management, and complications exacerbates this burden.

Concerning the knowledge of Asthma, majority of participants (89.5%) had poor knowledge of Asthma. This is in tandem with a study done in Zambia (Jumbe and Chabala, 2016) but in contrast to a study carried out in Edo state (Odiyi and Ajayi, 2009) where the mean knowledge score of Asthma was

8.04±1.79 over a maximum possible score of 14 (range of 4 to 14) corresponding to 57.4% which was thought to be average performance. Lack of awareness about asthma symptoms and triggers can result in under-diagnosis and under-treatment of the condition. Individuals may dismiss symptoms such as wheezing, shortness of breath, chest tightness, and coughing as temporary or unrelated to asthma, leading to delays in seeking medical care. Under-treatment can exacerbate symptoms, increase the risk of asthma attacks, and result in decreased quality of life. Poorly controlled asthma can lead to frequent exacerbations, emergency department visits, hospitalizations, and missed school or work days. The economic burden associated with asthma-related healthcare utilization and productivity losses is substantial for individuals, families, healthcare systems, and society as a whole. Asthma symptoms can significantly impair quality of life by limiting physical activity, disrupting sleep, causing anxiety or depression, and interfering with daily activities. Poorly managed asthma can lead to functional impairment, decreased exercise tolerance, and reduced overall well-being. Lack of knowledge about asthma triggers, symptom management, and medication adherence can exacerbate these challenges.

The self-reported prevalence of hypertension in this study was found to be 12.9%. This was in contrast to studies done in Ayua (Egbi, Ahmed and Madubuko, 2011), Udo (Omuemu, Okojie and Omuemu, 2007), Ibusa (Ofili, Ncama and Sartorius, 2015), Ghana (Agyei-Baffour, Tetteh, Quansah and Boateng, 2018), and US (Chobufo, Gayam, Soluny, Rahman, Enoru, Foryoung, 2020) where the reported prevalence of hypertension was 27.9%, 20.2%, 44%, 21.4%, and 49.64% respectively. Hypertension is a major risk factor for various cardiovascular diseases, including heart attacks, strokes, heart failure, and peripheral vascular disease. It significantly increases the risk of morbidity and mortality associated with these conditions. Because it typically has no symptoms in its early stages and coincident poor health seeking behaviour, many people with hypertension are unaware of their condition until it causes complications such as heart disease, stroke, or kidney damage.

The self-reported prevalence of DM in this study was found to be 4.0%. This was similar to studies done in Egor (Obarisiagbon et al, 2020) and Ghana (Gatimu, Milimo and Sebastin, 2016) where the reported prevalence was 4.0% and 3.95% respectively, but in contrast to studies done in Ayua (Egbi and Ahmed, 2020) and UK (Whicher, O'Neil, and Holt, 2020) where higher prevalence of DM was reported to be 13.9% and 7% respectively. Certain populations are disproportionately affected by diabetes, including racial and ethnic minorities, socioeconomically disadvantaged groups, and individuals living in low- and middle-income countries like the study population. Addressing disparities in diabetes prevalence and outcomes requires attention to social determinants of health, access to healthcare, and culturally sensitive interventions. The self-reported prevalence of Asthma in this study was found to be 2.4%. This is in contrast to studies done in Ilorin (Ozoh et. al, 2019) where the prevalence of asthma was found to be lower (1.1%), and in Lagos (Tripathy, 2018)(8.0%) and China (Huang, yang, Yang Zhao, Zhang, Bai and Kang, 2019)(4.2%) where the prevalence of asthma was found to be higher. The report of a systematic analysis on an estimate of asthma prevalence in Africa published in 2013 suggest an increasing prevalence of asthma in Africa over the past two decades. Due to the paucity of data, it is believed that the true prevalence of asthma may still be under-estimated (Adeloye, Chan, Rudan and Campbell, 2013). Asthma prevalence varies among different demographic groups and geographic regions. Understanding these disparities is crucial for addressing inequities in healthcare access, quality of care, and environmental factors that contribute to asthma development and exacerbations.

Significant risk factors of hypertension observed in the respondents in this study were increasing age, family history, male sex, alcohol intake, inadequate intake of fruits and vegetables, and lack of regular physical exercise. This was similar to the studies done in Ayua (Adetona, et al, 2019 and Egbi et al, 2021), Ibusa (Ofili et al, 2015) and Ghana (Dai, Addai, Nutakorm, Osei-Kwakpe, Larnyo, Oppong and Boahemaa, 2022) but in contrast with a study carried out in Igbeagu Community of Ebonyi State, South-Eastern Nigeria (Ugwuyam, Ezenkwa, Nwobim Ogbanshi, Idolo and Nnabo, 2022) where consumption of red meat and increase number of children in the family were recognized as risk factors for hypertension. Identifying and managing risk factors for hypertension are crucial components of preventive healthcare strategies. Public health initiatives focusing on education, screening, and early intervention can help identify individuals at risk and implement appropriate interventions to prevent hypertension or manage it effectively. Addressing the risk factors associated with hypertension is essential for promoting public health, preventing associated complications, reducing healthcare costs, and improving the overall well-being of populations.

In addition, with regards to DM, significant associated risk factors in this study were family history and inadequate intake of fruits and vegetables as all the reported diabetics had positive family history and only occasionally take fruits and vegetables. This was similar to the results of a systematic review and Meta-Analysis carried out in Nigeria (Uloko, Musa, Ramalan, Gezawa, Puepet, Uloko, Borodo and Sada, 2018) and a similar systematic review and Meta-Analysis carried out in Ghana (Asamaoh-Boaheng, Sarto-Kantanka, Tuffour, Eghan and Mbanya, 2019) and Dai et al, 2022); but was in contrast to the result of a study conducted in China where older age, higher Body Mass Index (BMI) and having more comorbidities were independently, significantly, and positively associated with diabetes (Hu, Wan and Yu, 2017). Many risk factors for diabetes, such as unhealthy diet, physical inactivity, and obesity, are modifiable through lifestyle changes. Public health interventions aimed at promoting healthier lifestyles can prevent or delay the onset of diabetes and its complications, improving overall well-being and quality of life. Concerning the risk factors for asthma, the reported risk factors among respondents in this study were family history and dusty environment, as all the reported asthmatics had positive family history of asthma and 2/3rd of asthmatics reportedly reside in a dusty environment. This was similar to the result of a systematic review of literature done in 2015 (Toskala and Kennedy, 2015), but in contrast to the result of another study done in Finland which revealed that the risk factors of asthma were associated with male sex, age, a low education level, no professional training, ever smoking, ≥2 siblings, ≥1 chronic comorbidity and non-steroidal anti-inflammatory drug (NSAID)-exacerbated respiratory disease (NERD) (Topilla-Salmi, Lemmentyinen and Chanoine, 2021). Identifying and managing risk factors for asthma are crucial for preventive healthcare strategies. Public health efforts focusing on education, environmental control measures, and access to appropriate healthcare can help prevent asthma exacerbations and improve overall respiratory health in populations. Certain lifestyle factors, such as obesity and physical inactivity, can increase the risk of asthma or worsen asthma symptoms. Public health initiatives promoting healthy lifestyles can help reduce the prevalence of these risk factors and improve asthma outcomes. There was statistical significance between the age of participants and prevalence of HTN as the majority of those with hypertension were in the older age group of 61-70 (p=0.008). This was similar to a study done in Ayua (Egbi et al, 2021) where the incidence of hypertension also correlated with increasing age in the participants and another study done in Ghana where there was a 53.72%

hypertension prevalence rate among older adults. Hypertension prevalence tends to increase with increasing age. ($B = -0.18$, $OR = 0.84$, $p < 0.017$) (Dai, Addai-Dansoh, Nutakor, Osei-Kwakye, 2022). Hypertension is a common condition, particularly among older adults. As individuals age, the prevalence of hypertension increases significantly. The impact of this is easily noticed and efforts should be put in place to limit the morbidity associated with this condition as the older age group contribute to the working class of a country. This can have adverse impact on the economy of the country.

Furthermore, findings from this study showed that the association between knowledge and prevalence of hypertension was found to be statistically significant ($p=0.001$) as majority of hypertensive respondents had good knowledge of hypertension. This was similar to result obtained in a study in Lebanon (Ugwuya et al, 2022). Good knowledge among the hypertensives can be due to the fact that living with hypertension can prompt individuals to seek out information to better manage their condition. They may become more knowledgeable through their own experiences with monitoring blood pressure, medication adherence, lifestyle changes, and interactions with healthcare professionals. Regarding the association between prevalence and risk factors for hypertension, statistical significance was only observed in family history of hypertension ($p=0.001$). This was similar to a study carried out amongst Chinese elderly participants which showed participants with positive family history had a significantly higher prevalence of hypertension (67.5%, 95% CI: 63.3–71.7) than those without (47.9%, 95% CI: 45.2–50.6), and even among participants without hypertension, the blood pressure levels were higher with positive family history (Liu, He and Jiang, 2015). This was also similar to results obtained in Sri Lanka (Ramasinghe, Cooray, Jayawardena, Katulande, 2015). Although majority of the reported hypertensive occasionally use alcohol, there was no statistical significance as the p value observed was 0.633. Similar association between prevalence of diabetes and risk factors of diabetes was also noticed as statistical significance was only observed in family history of diabetes ($p=0.001$). This was similar to the result obtained in a study done in China which concluded that family history risk categories of diabetes have a significant, independent, and graded association with the prevalence of this disease in the Chinese population (Zhan, Yang, Xiao and Xing, 2015). Similar result was also obtained in the NHANES study (Annis, Caulder Cook and Duquette, 2015). Other risk factors did not show statistical significance. Also, regarding the association between prevalence of asthma and risk factors of asthma, statistical significance was only observed in family history of asthma ($p=0.001$). This result was similar to that obtained in a study conducted in the US result of which revealed that 84.7% of respondents had familial risk for asthma (Liu, Valdez, Yoon, Crocker, Moonesinghe and Rhoury, 2009). Other risk factors did not show statistical significance. A positive family history of hypertension, diabetes, or asthma serves as an important indicator of an individual's susceptibility to these conditions. It underscores the importance of proactive health management, including lifestyle modifications and regular medical monitoring, to mitigate risks and optimize health outcomes.

Conclusion

Findings from this study showed that majority of the respondents have poor knowledge of hypertension, diabetes and asthma. Family history was the most significant risk factor for all three conditions. Other risk factors, such as alcohol intake and inadequate diet, are prevalent in the community, while smoking is less common.

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