Current Research in Diabetes & Obesity Journal
ISSN: 2476-1435

Juniper Publishers
key to the Researchers

Review Article
Volume 18 Issue 2 - July 2025
DOI: 10.19080/CRDOJ.2025.18.555983

Curr Res Diabetes Obes J

Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria

Mosimabale Margret Meka[1], Sanni Simbiat Moyomola[2,4], Umeaku O Patricia[3] and Olanrewaju Omoniyi Isaac[2,4*]

[1]*Department of Nutrition and Dietetics, Federal Polytechnic, Nigeria*

[2]*Department of Nutrition and Dietetics, Rufus Giwa Polytechnic, Nigeria*

[3]*Department of Nutrition and Dietetics, Obafemi Awolowo University Teaching Hospital, Nigeria*

[4]*Department of Human Nutrition and Dietetics, Afe Babalola University Ado Ekiti, Nigeria*

Submission: July 07, 2025; **Published:** July 30, 2025

***Corresponding author:** Olanrewaju Omoniyi Isaac, Department of Nutrition and Dietetics, Rufus Giwa Polytechnic, Nigeria, Department of Human Nutrition and Dietetics, Afe Babalola University Ado Ekiti, Nigeria

Abstract

Background: The burden of non-communicable diseases (NCDs) continues to increase globally especially in developing countries, with different risk factors contributing to the surge. The rural dwellers are now having their own share of the burden

Objective: This study aimed to prevalence and risk of non-communicable diseases among geriatric population in rural area of Owo local government, Ondo state, Nigeria

Methods: The study was a descriptive cross-sectional study in design, which involved 346 elderly (aged 60–90) who were systematically sampled from six rural communities in the Owo Local Government Area, Ondo State. A structured, interviewer-administered questionnaire was used to elicit data from the respondents on demographical characteristics, medical and lifestyle pattern and dietary habits of the respondent. Anthropometric status, random blood glucose and high blood pressure were assessed using anthropometric indices, glucometer and a digital sphygmomanometer, respectively, in line with World Health Organization standards. Descriptive statistics, chi-square, and correlation were employed using statistics package for social science, version 25, was used to analyze the generated data. The level of significance was determined using a probability of ($p<0.05$).

Result: findings shows that about 15.3%, 11.0%, and 4.6% drink alcoholic beverages, sniff tobacco, and smoke cigarettes respectively while 23.1% and 3.1% are on hypertensive drugs and confirmed diabetics. About 16.5% ate less than 3 times per day. Breakfast was skipped by (36.6%) while 15% ate outside the home. Central obesity as revealed by WC, WHTR, and WHR are 33.8%, 30.3%, and 30.6%, respectively. About 36.7% and 23% had elevated systolic and diastolic blood pressure, respectively. SBP correlated with ADL score ($r = 0.353$, $P = 0.003$) while 20.1% of the respondent had an elevated blood glucose level.

Conclusion: The prevalence of diabetes, hypertension and central obesity and factors associated with them are high among the respondents in the rural area. This suggests the need for intervention and policy directions to manage NCD burden in rural communities in Nigeria.

Keywords: Non-communicable Diseases; geriatric population; rural area; diabetes; obesity

Abbreviations: NCDs: Non-Communicable Diseases; LMICs: Low and Middle-Income Countries; HSB: Health Seeking Behaviors, WHR: Waist-Hip Ratio; SPSS: Statistical Package for the Social Sciences; SBP: Systolic Blood Pressures; DBP: Diastolic Blood Pressures; CVD: Cardiovascular Disease; WHTR: Waist-to-Height Ratio

Introduction

The burden of non-communicable diseases (NCDs) continues to increase globally especially in developing countries, with different risk factors contributing to the surge (Panda, Mahapatra and Persai, 2018). This is a result of rapid urbanization, and westernization of lifestyle and dietary habits (Uloko et al., 2018, Isreal et al., 2020). Low and middle-income countries (LMICs) are likely to suffer a greater burden of these diseases compared to the developed nations because of their limited healthcare financing for NCDs, and their relatively weak and unprepared health systems for these diseases (Kamada et al., 2017; Kanagala et al., 2021).

In African nations, deaths from NCDs are projected to exceed the combined deaths of communicable nutritional diseases and maternal and perinatal deaths as the most common causes of death by 2030 WHO, [1]. It is expected to have the world's largest increase in NCD deaths over the next decade due to the epidemi-

ologic transition of disease (Isreal et al., 2020, Panda, Mahapatra and Persai, 2018,). The countries of Sub-Saharan Africa are thus facing a triple burden; with a weak health system, a heavy load of infectious diseases and an increasing health burden due to NCDs (Kamada et al., 2017; Kanagala et al., 2021).

Cardiovascular diseases, diabetes mellitus, cancers, osteoarthritis, mental illness, and injuries are among the major NCDs in this region, resulting in high morbidity and mortality (Addo et al., 2019). In addition, these disease cause pains, disability, loss of income, disruption of family stability, and an impaired quality of life (Isreal et al., 2020, Panda, Mahapatra and Persai, 2018). NCDs are often associated with older age groups but evidence shows that more than nine million of all deaths attributed to NCDs occur before the age of 60. Of these, 90% occurred in low- and middle-income countries. Children, adults and the elderly are all vulnerable to the risk factors that contribute to NCDs WHO, [1].

Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancer (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million, including kidney disease deaths caused by diabetes). These four groups of diseases account for over 80% of all premature NCD deaths. Tobacco use, physical inactivity, the harmful use of alcohol, and unhealthy diets all increase the risk of dying from an NCD (Global Burden of Disease Collaborative Network, 2020).

Ondo State, particularly the rural districts of Owo local government, lacks scientific data on the prevalence and risk factors of non-communicable diseases. To have a viable intervention to address the massive health, nutritional, and psychological issues that work against the elderly quality of life and health status of elderly, Itis crucial to continuously examine the prevalence and risk factors of non-communicable diseases among this age group without which viable intervention may be difficult to plan. In order to lower the rate of non-communicable diseases and enhance the well-being of the elderly in the study region, information from this study would be suitable to develop treatments aimed at reduction in the prevalence of non-communicable diseases and health condition of the elderly.

Healthy aging aims to increase years of life as well as years of healthy, active aging. Unfortunately, as people age, chronic diseases become more prevalent and are sometimes seen as an unavoidable aspect of getting older. The WHO estimates that the risk of CVD, stroke, and type 2 diabetes would be reduced by 80% if the main risk factors for chronic illness (smoking, inactivity, and poor diet) are avoided. The study investigated the prevalence and risk factors of non-communicable diseases among older people in rural area of Owo local government, Ondo state, Nigeria

Materials and Method

Study design

The study was a descriptive cross-sectional study in design to assess the prevalence and risk factors of non-communicable diseases among older people in rural area of Owo local government, Ondo state, Nigeria.

Study area

The study was carried out in Owo local government area of Ondo State, south west Nigeria. When Ondo State was established in 1976 from the ancient western state, Owo was one of the first local governments to be established. Located roughly between latitudes 7o 111 and 7o1831 and longitudes 5o 351 and 5o 5831 East of the Greenwich meridian is the city of Owo (Smith, 1989). It is located in the southwest of Nigeria, at the southern edge of the Yoruba Hills (1,130 feet (344 meters) above sea level), and at the junction of the roads leading to Akure, Kabba, and Benin City (Smith, 2011). The local government has a total population of 218 886, of whom 108 457 are women and 110 429 men, according to the national censor for 2006 (NPC, 2006). While farmers and traders predominate in rural areas, civil servants make up the majority of the population in the local government headquarters. In general, Christianity and Islam are the two main religions practiced by the people of Owo. The Federal Medical Centre, Achievers University, and a number of other financial institutions are located in the Owo Local Government Area, which is also home to the first higher education facility in the state of Ondo (Rufus Giwa Polytechnic, Owo, formerly Ondo State Polytechnic, Owo.

Study Population

A total of 346 study population consisted of apparently healthy male and female elderly aged 60-90years.

Sample size determination

The sample size was determined using the formula for descriptive studies (Araoye, 2008)

$$n = z^2_{1-\alpha/2} p(1-p)$$

$$d^2$$

P is the proportion of the factor under investigation i.e., 9.4 (9.4% represents the prevalence of diabetes mellitus in Ondo State, Nigeria (Adebambo et al., 2021).

$$z = 1.96$$

$$p = 9.4\% = 0.094$$

$$q = (1-p) = 1 - 0.094 = 0.906$$

$$d = 5\% = 0.05$$

$$n = \frac{1.96^2 \times 0.094 \times 0.906}{0.05^2}$$

$$N = 131$$

Adjusting the sample size for 10% non-response rate

$$N_F = \frac{n}{1-f}$$

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

$$= \frac{131}{1-10\%} = \frac{131}{1-0.1}$$

$$= \frac{131}{0.9} = n_F = 146$$

In other to give room for more participants since it's a cross sectional and prevalence study, the researcher increases the sample size 350while information was retrieved from 346 respondents by the interviewer

Sampling Procedure

Simple random sampling technique and systematic sampling procedure were adopted in the selection of wards, communities and respondent. A total of eleven (11) wards existed in the study area, six (6) randomly selected. One (1) rural community was selected from each of the ward for the study making a total of six (6) rural communities in the study area. Sixty (60) respondents were sampled from each of the community for the study. Older persons (60-90years) resident in the area for not less than six months who are willing to participate in the study was recruited while older persons who are unwilling to be part of the study, those who are severally ill or on wheelchairs at the time of the study was excluded

Methods of data collection

Interviewer-administered pretested semi- structured questionnaire was use to source for information from the respondents by the Research Assistants, who were graduate of Nutrition and public health. The questionnaire contained questions on social-demographical characteristics, dietary habit of the respondents, medical and lifestyle patterns, and health seeking behaviors of the respondent

Height

Participants' heights were measured using a Stadiometer while standing upright, barefoot, with their backs to the height meter and their eyes straight ahead in the Frankfurt posture. The height was measured and the measurement was accurate to 0.1 cm (WHO, 1995; 2008).

Waist circumference

A non-stretch tape measure (Butterfly, China) was used to measure waist circumference in accordance with WHO guidelines. The tape rule was placed at the midpoint between the lower rib margin and iliac crest. To the nearest 0.1 cm, measurements were obtained and recorded (WHO, 2004; 2011).

Hip Circumferences

Hip circumference was measured by wrapping a horizontally oriented tape around the hip at its widest point, with the measurement being taken to the nearest 0.1cm.

Anthropometric Indices Measured

With the use of the Waist-Hip Ratio (WHR) and waist circumference, truncal obesity was identified (WC). By dividing the waist circumference by the hip circumference, the waist-hip ratio (WHR) was determined. Lesser readings were regarded as normal, but WHR >0.85 for females and >0.95 for males was considered abnormal (WHO, 2004). WC >102 cm for men and 88 cm for women was considered abnormal, whereas lower levels were considered normal (WHO, 2004). BMI (kg/m^2) = was used to determine the body mass index (WHO, 2008). Underweight BMI (18.5), Normal BMI (>18.5 24.99), Overweight BMI (>25 29.99), and Obesity BMI (>30 kg/m^2) were the four categories for Body Mass Index (WHO, 2008).

Random blood sugar test

About 10 mL of blood was taken from each participant at a random time regardless of time of meal consumption. Digital glucometer (oxymoron) was used to determine the blood glucose level of the respondents. A blood sugar level of less than 200 milligrams per liter (200mg/dL) or 11.1millimoles per liter (mmol/L) is regarded as normal blood glucose while a blood sugar level of equal to 200 milligrams per liter (200mg/dL) is higher suggests diabetes (IDF, 2015; ADA, 2013).

Blood pressure measurement

After participants had rested for at least five minutes, their blood pressure was checked in the left arm while they were seated (WHO, 2017). Around the exposed arm, the 12.5 cm broad cuff was applied evenly and snugly, with the lower border resting 2.5 cm above the antecubital fossa. The systolic (SBP) and diastolic (DBP) blood pressures were determined from the first and fifth Korotkoff sounds, respectively. After a 10-minute break, the average of two different readings was calculated and recorded to the nearest 2 mm (Table 1).

Ethical considerations

Ethical approval was obtained from the office of the health commissioner, Owo local Government Health Department (No. OWLG/12/22/7961/T/134) while informed written consent from the study participants was obtained after the objectives of the study were explained to them before participating in the study

Statistical analysis

Data were collated, coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 25 software. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp. Absolute numbers and simple percentages were used to describe categorical variables such nutritional status. The qualitative variables (such as sex, occupation and educational level) were expressed in frequencies and percentages. The Chi-square test was used to assess the significance of associations between categorical variables. Level of significance was set at $p<0.05$.

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

Table 1: World Health Organization, 2017.

Category	Systolic Blood Pressure (mmHg)	Diastolic Blood Pressure (mmHg)
Optimal BP	<120	<80
Normal BP	120-129	80-84
Pre-Hypertension	130-139	85-89
Hypertension grade 1	140-159	90-99
Hypertension grade 2	160-179	100-109
Hypertension grade 3	>180	>110

Socio- demographic characteristics of the respondents

Tables 2a & 2b express the socio-demographic characteristics of the respondents. A total of 346 respondents participated in the study with an average age of 72 ±2.4years. About two-third (37.6%) of the respondents were within the age of 60-64-years. More than half (59%) of the respondent were female while (41%) were male. Majority of the respondents were still married (61.8%) as at the time of data collection while 33.8% of them had already lost their spouse. Christianity (84.4%) and Yoruba (82.6%) were the predominant religion practiced and ethnicity of the respondents. Although, Igbos were made up 8.7% while Ebira 3.5% tribe were also found among the participant (Table 2).

Table 2: Socio-Demographic Characteristics of the Subjects.

Variable	Male	Female	Total (%)	X^2	P value
Age (years)					
60-64	52(36.6)	78(38.2)	130 (37.6)	19.71	0.001*
65-70	22(15.5)	34(16.7)	56(16.2)		
71-74	19(13.4)	43(21.1)	62(17.9)		
75-80	28(19.7)	28(13.7)	56(16.2)		
81-90	21(14.8)	21(10.3)	42(12.1)		
Total	142(100.0)	204((100.0)	346 (100.0)		
Marital status					
Married	115((81.0)	99(48.5)	214 (61.8)	43.218	0.000*
Widow/Widower	21(14.8)	96(47.1)	117(33.8)		
Separated	4(2.8)	2(0.9)	6 (1.7)		
Divorced	2(1.4)	7(3.4)	9(2.6)		
Total	142(100.0)	204(100.0)	346 (100.0)		
Religion					
Christianity	128(90.1)	164(80.4)	292 (84.4)	6.632	0.157
Islam	12(8.4)	32(15.7)	44 (12.7)		
Traditionalist	1(0.7)	2(0.9)	3 (0.9)		
Brotherhood	1(0.7)	0(0.0)	1 (0.3)		
Jehovah witness	0(0.0)	6(2.9)	5(1.7)		
Total	142(100.0)	204(100.0)	346 (100.0)		
Ethnicity					
Yoruba	109(76.8)	177(86.8)	286 (82.6)	13.157a	0.011*
Igbo	17(11.8)	13(6.4)	30 (8.7)		
Hausa	4(2.8)	3(1.5)	7 (2.0)		
Ebira	6 (4.2)	6(2.9)	12 (3.5)		
Edo	6 (4.2)	5(2.5)	11(3.2)		
Total	142(100.0)	204(100.0)	346 (100.0)		

*Significant at $p < 0.05$.

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

Medical history and lifestyles pattern of the Respondents

Table 3 presents the medical history and lifestyles pattern of the respondents. Twenty-three-point one percent (23.1%) of the respondents was on hypertensive drug, similarly, 21.1% had diabetes mellitus while 15.3% 11.0% and 4.6% drinks alcoholic beverage, use tobacco and smoke as at the time of data collection. This act was predominantly among male participants. Engagement in physical exercise was less than fifty percent of the respondents. More than half did not involve in exercise (Table 3).

Table 3: Medical history and lifestyles pattern of the Respondents.

Variable	Male	Female	Total (%)	X^2	P value
On hypertensive drug					
Yes	25(17.6)	55 (29.0)	80 (23.1)	21.069	0.016*
No	117(82.4)	129(71.0)	231 (76.9)		
Total	142(100.0)	204(100.0)	346(100.0		
Confirmed diabetic					
Yes	28(19.7)	45 (22.00)	73(21.1)	18.231	0.013*
No	114(80.3)	159(78.0)	273(78.9)		
Total	142(100.0)	204(100.0)	346(100.0		
Drinks alcohol					
Yes	44(30.0)	9(4.4)	53(15.3)	45.58	0.000*
No	98(70.0)	195(95.6)	293(84.7)		
Total	142(100.0)	204(100.0)	346(100.0)		
Smoke cigarette					
Yes	16(11.3)	0(0.0)	16(4.6)	24.1	0.001*
No	126(88.7)	204(100.0)	330(95.4)		
Total	142(100.0)	204(100.0)	346(100.0)		
Takes tobacco					
Yes	17(12.0)	21(10.3)	38(11.0)	0.241	0.373
No	125(88.0)	183(89.7)	313(89.0)		
Total	142 (41.0)	204(100.0)	346(100.0)		
Engaged in exercise once in week					
Yes	83(58.5)	71(34.8)	154(44.5)	18.955	0.003*
No	59(41.5)	133 (65.2)	192(55.5)		
Total	142 (41.0)	204(100.0)	346(100.0)		

Health seeking behaviors (HSB) of the respondents

Health seeking behavior of the respondent revealed that only 46.2% had a good health seeking behaviors, meaning that this set of elderly always approach the either the health centers, hospital and pharmacy to seek for treatment whenever they are ill. More than half of the elderly had a poor health seeking behaviors of which 28.9% of them patronized. Over the counter medication/ self-medication, 17.3% subscribe to herbal medicine. Faith healing (6.1%) was not left behind as well (Figure 1).

Anthropometric Status of the Respondents

The anthropometric status of the respondents is presented in Table 4. This study found that (9.0%) of the elderly were underweight while nearly half (49.0%) were within the healthful BMI range. Overweight and obesity which are 30% and 15.9% were more prevalence among the female elderly. Female respondents were not just more overweight and obese but the difference was statistically significant ($p<0.05$). Waist circumference status of the respondents revealed that 33.8% of the of the entire study population were found to have a central obesity. The prevalence of central obesity was higher among female respondents (52.0%) compare to their males' counterpart (10%) and it was statistically significant ($p<0.05$). Judging with waist to height ratio, 30.3% of the respondents were at risk of cardiovascular disease of which Female respondents (37.7%) were more at risk of than the male (19.7%) respondents (Table 4).

Blood pressure pattern of the respondents

A total of 40% of the respondents had normal systolic blood pressure. Twenty -six-point five percent (26.5%) of them were female respondents. Only 22.9% of study populations were at borderline (pre-hypertension). Some of the respondents (21.6%) were said to having grade 1 while 15.1% had an elevated grade 2 (hypertension) of which its prevalence (16.2%) was found to be

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

among female respondents. There was a statistical significance in the systolic blood pressure between the male and female respondents (p=0.001). On diastolic blood pressure pattern, 63.3% of the respondents had normal blood pressure while 23% were hypertensive regardless of the 13.6% that were at borderline (pre-hypertension). Significance difference was observed between the diastolic blood pressure pattern the male and female respondents (p>0.005) (Figures 2 & 3).

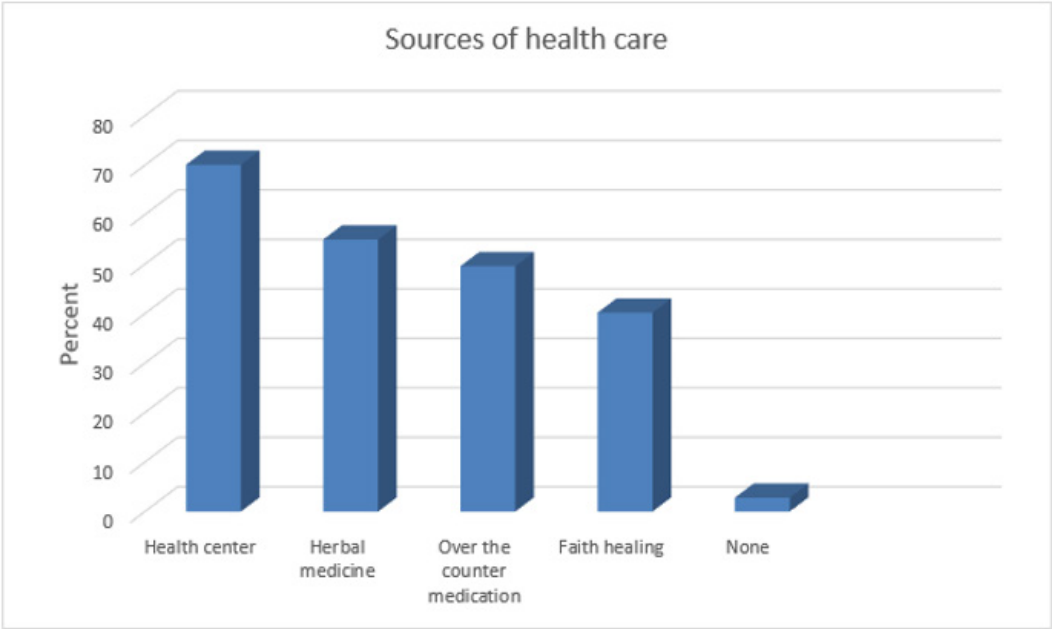

Figure 1: Health seeking behaviors (HSB) of the respondents.

.

Table 4: Nutritional Status of the Respondents.

Variables	Male= (142)	Female= (204)	Total n= 346	X^2	P value
Body Mass Index	**F (%)**	**F (%)**	**F (%)**	**X^2**	**P value**
<18.5 (underweight)	6(4.2)	12(5.9)	18(9.0)	17.813	0.007*
18.5 – 24.9 (Normal)	85(59.9)	85(41.7)	170(49.1)		
25-29.9 (Overweight)	38(26.8)	65(31.9)	103(30.0)		
30-34.9 (Obesity class1)	10(7.0)	23(11.3)	33(9.5)		
35-39.9 (Obesity class 2)	3(2.1)	19(9.3)	22(6.4)		
Total	142(100.0)	204(100.0)	346(100.0)		
Waist circumference					
<88cm<102cm (Normal)	131(92.2)	98(48.0)	229(66.2)	73.131	0.005*
>88cm >102cm (Excess)	11(7.8)	106(52.0)	117(33.8)		
Total	142(100.0)	204(100.0)	346(100.0)		
Waist-Height Ratio					
Healthy weight	90(63.4)	98(48.0)	189(54.6)	24.284	0.030*
Overweight	24(16.9)	39(19.1)	63(18.2)		
Central obesity	28(19.7)	77(37.7)	105(30.3)		
Total	142(100.0)	204(100.0)	346(100.0)		

*Significant at ($p < 0.05$).

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

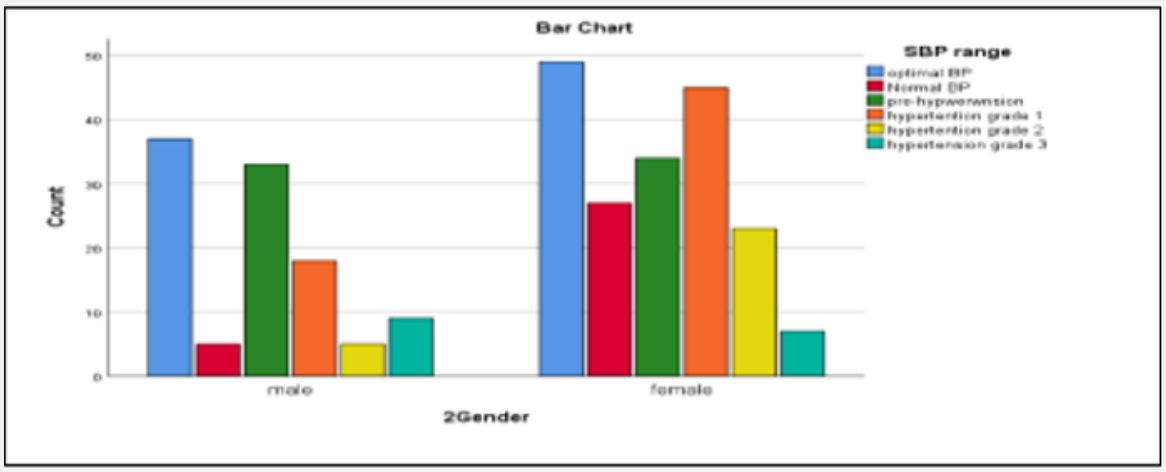

Figure 2: Systolic blood pressure pattern of the respondents.

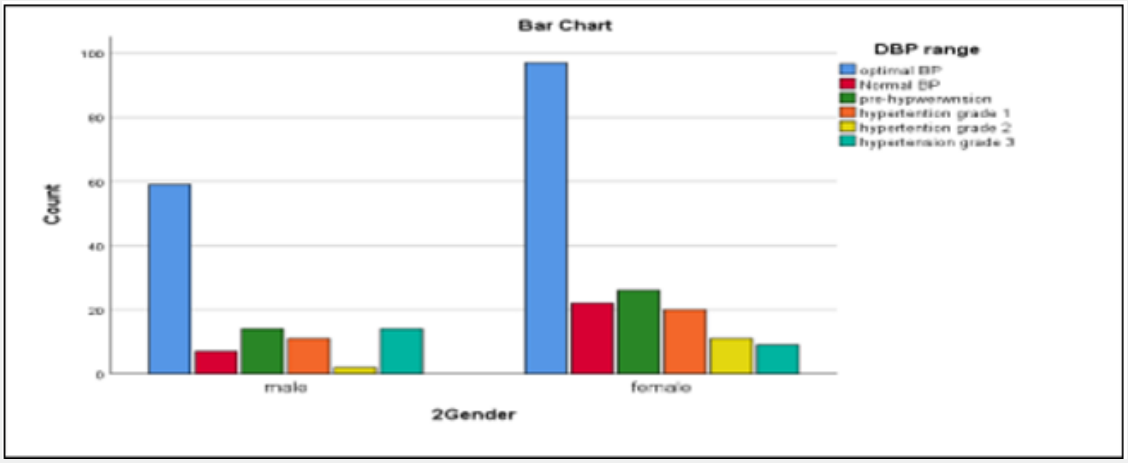

Figure 3: Diastolic blood pressure pattern of the respondents.

Prevalence of risk of non-communicable diseases among the older person

From the observation from the result presented in Table 5, the number of older persons at higher risk of cardiovascular diseases was 15.9% of which 20.6% were female, meaning that general obesity was more seen among the female respondent compared to the male older person. Similar observation was also seen in the waist circumference of the older person. About 52.0% of the female were also at risk of central obesity and it was statistically significant (P< 0.05). On blood pressure pattern, significant difference (P< 0.05) was also observed on the systolic and diastolic blood pressure pattern of the older person. More of the female older persons were at higher risk compared with the male older person in the study. About 21.1% had an elevated blood glucose level as at the time of data collection, 22.0% were female. While 30.0% of the male older person had habitual alcoholic drinks, only 9.4% of the female did. None of the female older persons were involved in smoke, 11.3% of the male smoke cigarette. Sedentary life style was disturbing risk factor prevalence among the older person and this was more pronounce among the female participants. About 55.5% were never involved in physical activities of which 65.2% were female (Table 5).

Table 5: Prevalence of risk of cardiovascular diseases among the older person.

Variable	Male	Female	Total (%)	X^2	P value
BMI (Kgm^{-2})	F (%)	F (%)	F (%)		
Not at risk (less than 24.9)	91(64.1)	97(47.6)	188(58.1)	19.456	0.015*
At lower risk (25-29.9)	38(26.8)	65(31.9)	103(30.0)		
At higher risk (30& above)	13(9.1)	23(20.6)	55(15.9)		

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

Total	51 (100.0)	88(100.0)	158(100.0)		
Waist circumference					
Not at risk	131(92.2)	98(48.0)	229(66.2)	22.376	0.025*
At risk	11(7.8)	106(52.0)	117(33.8)		
Total	142(100.0)	204(100.0)	346(100.0)		
Elevated SBP (mmHg)					
At lower risk (130-139)	33 (50.8)	34 (31.2)	67(38.5)	7.232	0.0514
At higher risk (140-159)	32 (49.2)	75 (69.8)	107(61.5)		
Total	65(100.0)	109(100.0)	174(100.0)		
Elevated DBP (mmHg)					
At lower risk (85-89)	14 (34.1)	26 (39.4)	40(34.2)	15.254	0.026*
At higher risk (90-109)	27 (65.9)	40(60.6)	67(65.8)		
Total	41 (100.0)	66 (100.0)	117(100.0)		
Elevated blood glucose					
Yes	28(19.7)	45 (22.00)	73(21.1)	17.232	0.014*
Drinks alcohol					
Yes	44(30.0)	9(4.4)	53(15.3)	35.57	0.001*
Smoke cigarette					
Yes	16(11.3)	0(0.0)	16(4.6)	24.101	0.001*
Takes tobacco					
Yes	17(12.0)	21(10.3)	38(11.0)	0.241	0.373
Exercise once in week					
Not at risk	83(58.5)	71(34.8)	154(44.5)	18.955	0.003*
At risk	59(41.5)	133 (65.2)	192(55.5)		

*Significant at $p < 0.05$.

Discussion

The population of older people globally is rapidly increasing due to increased longevity, decreased fertility and mortality rates Chobe et al., [2]. This population are at higher risk for multiple health challenges in which research has established that non-communicable diseases (NCDs) are highly prevalent during this period of life. Non-communicable diseases (NCDs) are a significant health concern for older people, impacting their quality of life, increasing healthcare costs, and putting pressure on family members. Noncommunicable Diseases (NCDs) include cardiovascular diseases, hypertension, cancer, and diabetes mellitus which kill about 41 million people each year representing 70% of all deaths and 46% of the global burden of disease Ramesh et al., [3], WHO [1]. The mean age of respondents in this present study is 72 years reflecting a sample largely composed of elderly individuals while 37.6% of the respondents were aged between 60-64 years, indicating that a significant portion of the participants were in the early stages of older adulthood. This age group is notably within the range at which the prevalence of non-communicable diseases (NCDs) such as hypertension, diabetes, cardiovascular diseases, and osteoarthritis tends to increase due to cumulative life-long exposure to various risk factors such as unhealthy lifestyle involving tobacco use, lack of regular physical activity and consumption of diets rich in highly saturated fats, sugars, and salt WHO, [4], Sapkota et al., [5], Bosu et al., [6]. A slight female predominance observed in this study aligns with Nigerian demographic trends where women generally have a higher life expectancy than men, often leading to a higher female representation in older populations National Bureau of Statistics, [7]. Data from this study shows that a larger percentage of the population were still married, while about 33.8% had lost their spouses. Marital status significantly contributes to the health of older individuals, and marriage is often linked to better health due to emotional support and mutual assistance. However, widowhood, may lead to emotional distress, loneliness, and financial loss, increasing the risk of mental issues and non-communicable diseases (NCDs) Sarker, [8], Soulsby and Bennett, [9]. The majority of respondents in this study are Christians and Yoruba, this reflects the regional demographic makeup of southwestern state of Nigeria. Ethnicity and religion may influence health-seeking behavior, dietary practices, physical activity, and attitudes toward preventive care.

The medical history and lifestyle patterns of the respondents indicate significant health-related challenges and behaviors which may impact the overall well-being. Although, a larger percentage of the population are not on hypertensive drug, however, a considerable prevalence of hypertension was observed in this study as over 20% of respondents are on hypertensive drug. This is considered in agreement with the result (40%) obtained

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

by Olawumi et al., [10] in their study on Nutritional Status and Morbidity Patterns of the Elderly in a Northwestern Nigeria. Similarly, a little percentage of respondents in this study have been diagnosed with diabetes mellitus, this is consistent with another study (5.1%) from Lagos by Idris et al., [11] who reported a low respondent's diagnosis with diabetes. This reflects a high burden of non-communicable diseases (NCDs) among the respondents. In terms of lifestyle habits, a little number of the participants reported consuming alcoholic beverages, tobacco products and smokers at the time of data collection, these practices were predominantly observed among male respondents, indicating possible gender differences in health risk behaviors. Although engagement in these harmful habits is little however, it does not only increase the risk of developing or worsening chronic conditions such as hypertension and diabetes but also poses a threat to overall health and quality of life. As observed in this study, participation in physical activity was found to be low among the respondents. Less than 50% engaged in any form of regular exercise, and over half of the participants reported a sedentary lifestyle. This lack of physical activity (when also combined with other unhealthy behaviors such as alcohol consumption and smoking), may further increase the risk of NCDs and contribute to poor health outcomes.

Less than half of the respondents in this study have good health seeking behavior meaning that they consistently seek appropriate medical attention from recognized health facilities such as health centers, hospitals, or pharmacies when ill. The health seeking behavior of respondents in this study is consistent with the reported health seeking behaviors among older people in Ekiti state, in which 64.7% of respondents had poor health-care-seeking behavioral practices while 35.3% had good health-seeking behavioral practices Adewoye et al., [12]. These findings were also similar to another survey conducted by Okojie and Lane, [13] in a rural community in Nigeria which showed that most older people sought health-care services from patent medicine stores which indicate poor health-seeking behavioral practices. This relatively low level of good health seeking behavior among the elderly may be influenced by several factors such as accessibility, education level, financial constraints, cultural beliefs, or past experiences with the healthcare system. This relatively low good health seeking is of a significant concern, considering the vulnerability of the elderly to various health conditions that require professional medical attention Langmann, [14].

The anthropometric data of the respondents in this study presents a clear picture of their nutritional status and health risks. There is low prevalence underweight and Obesity in this study as defined by BMI. The prevalence of underweight in this study is higher than 3.6% reported by Nzeagwu et al., [15] in Abia State but considerably lower than 10.6% reported by Olawumi et al., [10] in Northwestern, Nigeria. There is high prevalence of overweight in this study, this is in agreement with other result from other studies Nzeagwu et al., [15]; Olawumi et al., [10]. This could be due to lifestyle and genetic factors that have contributed to the rapid increase overweight and obesity cases worldwide. The small proportion of the respondents who were underweight, suggest a relatively low incidence of chronic energy deficiency among the elderly. However, nearly half (49.0%) of the population fell within the normal BMI range, indicating a generally healthy weight status among the elderly group. The prevalence of overweight (30%) and obesity (15.9%) was substantial, especially among female respondents. These findings align with global trends showing higher rates of obesity among older women, particularly in low- and middle-income countries where physical inactivity and nutrition transition are prevalent Manoussi et al., [16], Bhattarai et al., [17] Mosha et al., [18], Modjadji, [19]. Assessment of Central obesity through waist circumference, about 33.8% of the entire study population have central obesity with a higher prevalence in females (52.0%) compared to males (10.0%).

This is a call to emphasizing the need for gender-specific strategies in obesity prevention and management among the elderly. Central obesity must critical be evaluated because it is strongly associated with metabolic syndrome and increased risk of cardiovascular disease Swarup et al., [20], Preda et al., [21], Powell-Wiley et al., [22]. Waist-to-height ratio (WHTR), another anthropometric assessment tool and sensitive predictor of cardiovascular risk Moosaie et al., [23], Soliman et al., [24], Alshamiri et al., [25], Pasdar et al., [26] shows that 30.3% of the respondents were at increased risk of cardiovascular disease with female respondents (37.7%) having higher prevalence compared to males (19.7%). This suggests that elderly women in the study population are at a higher risk of cardiometabolic diseases.

The results from this study indicated that 40% of the respondents had normal systolic blood pressure, with 26.5% of them being females. Pre-hypertension was observed in 22.9% of the participants, while 21.6% had grade 1 hypertension and 15.1% had grade 2 hypertension, with a higher prevalence (16.2%) among females. A larger percentage (63.3%) of respondents in this study had normal diastolic blood pressure while 23% were hypertensive. However, no statistically significant difference was observed between males and females in diastolic blood pressure ($p > 0.005$).

Findings from this study provide compelling evidence regarding the prevalence of cardiovascular disease (CVD) risk factors among older persons, with notable gender differences. BMI data shows that 15.9% of the respondents were classified as being at high risk for cardiovascular diseases while 20.6% of these high-risk individuals were females, indicating a higher prevalence of obesity among older women compared to older male. This agrees with existing body of literature that suggests post-menopausal hormonal changes, reduced physical activity, and sociocultural dietary patterns may contribute to increased adiposity among older women Segun et al., [27], Johnson et al., [28], Marsh et al., [29]. Waist circumference, an anthropometric indicator of central (abdominal) obesity, further supported this claim as over half (52.0%) of the female respondents were at risk of central obe-

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

sity, a statistically significant finding (P < 0.05). The Blood pressure (BP) patterns among this study participants further reveal a gender-based differences. A statistically significant variation (P < 0.05) was observed in both systolic and diastolic blood pressure levels, with females having higher prevalence of elevated BP. Elevated blood pressure is relevant, as hypertension remains one of the predominant risk factors for the development of multiple cardiovascular disorders such as heart failure, stroke, and renal complications Shams et al., [30]. This higher prevalence among older females may be attributed to factors such as menopause-related vascular changes, higher obesity rates, and lower physical activity levels Palacios et al., [31], Kamińska et al., [32], Kodoth et al., [33], El Khoudary et al., [34]. About 21.1% of the respondents have elevated blood glucose levels in which 22.0% were females. This could suggest potential risk of undiagnosed or poorly managed diabetes mellitus which may further compound the cardiovascular risk burden in this demographic.

Lifestyle-related risk behaviors such as alcohol consumption and cigarette smoking were markedly more prevalent among male participants. Approximately 30.0% of males reported habitual alcohol consumption compared to 9.4% of females who also engage in consumption of alcohol. Similarly, 11.3% of males in this study smoked cigarettes, whereas none of the female participants in this study engage in smoking. This agrees with several other studies on older adults' population Rosario et al., [35], Aremu et al., [36], Okonoda et al., [37], Adeloye et al., [38]. These risk factors, while lower in prevalence among women, still contribute significantly to overall CVD risk and should not be overlooked in public health interventions. One of the most concerning findings in this study was the high prevalence of sedentary behavior among the older people. Over half (55.5%) of the respondents reported no involvement in any form of physical activity or exercise with majority of them (65.2%) being females and among them. Sedentary lifestyle is an independent risk factor for non-communicable diseases Wu et al., [39], Elisa et al., [40], Cao et al., [41].

Results and findings

from this study shows there is a considerable high prevalence Non-communicable Diseases among older people in the study area while several risk factors such as sedentary lifestyle, smoking and alcohol consumption contributing to Non-communicable Diseases were also observed in the study. This study also shows significant gender disparities in the distribution of CVD risk factors among older persons, with females exhibiting higher prevalence of obesity, elevated blood pressure, elevated blood glucose, and sedentary lifestyle, while males showed higher tendencies toward alcohol and tobacco use. These findings emphasize the importance of tailored public health interventions of older people. Community-based strategies aimed at promoting physical activity, healthy eating habits, and regular health screenings especially for older women are recommended to reduce the growing burden of cardiovascular and metabolic diseases in aging populations.

References

1. WHO (2018) Noncommunicable Diseases Key facts. Geneva WHO.
2. Chobe M, Chobe S, Dayama S, Singh A, Metri K, et al. (2022) Prevalence of Non-Communicable Diseases and Its Associated Factors Among Urban Elderly of Six Indian States. Cureus 14(10): e30123
3. Ramesh S, Kosalram K, Srinivas V (2023) Non-communicable diseases and their impact on depression, anxiety, and stress among the geriatric population residing in old age homes in Chennai, Tamil Nadu. Journal of family medicine and primary care 12(9): 1931-1937.
4. WHO (2024) Noncommunicable diseases. World Health Organization.
5. Sapkota BP, Baral KP, Rehfuess EA, Parhofer KG, Berger U, et al. (2023) Effects of age on non-communicable disease risk factors among Nepalese adults. PloS one 18(6): e0281028.
6. Bosu WK, Aheto JMK, Zucchelli E, Reilly S (2017) Prevalence, awareness, and associated risk factors of hypertension in older adults in Africa: a systematic review and meta-analysis protocol. Systematic reviews 6(1): 192.
7. National Bureau of Statistics (2021) 2020 statistical report on women and men in Nigeria.
8. Sarker M (2024) The impact of widowhood on mental health: A study on rural widows in Rajshahi, Bangladesh. International Journal of Research and Innovation in Social Science 8(9): 2028-2047.
9. Soulsby L, Bennett K (2015) Marriage and Psychological Wellbeing: The Role of Social Support. Psychology 6: 1349-1359.
10. Olawumi AL, Grema BA, Suleiman AK, Omeiza YS, Michael GC, et al. (2021) Nutritional Status and Morbidity Patterns of the Elderly in a Northwestern Nigerian Hospital: A Cross-sectional Study. Nigerian Postgraduate Medical Journal 28(3): 160-168.
11. Idris IO, Oguntade AS, Mensah EA, Kitamura N (2020) Prevalence of non-communicable diseases and its risk factors among Ijegun-Isheri Osun residents in Lagos State, Nigeria: a community based cross-sectional study. BMC public health 20(1): 1258.
12. Adewoye KR, Aremu SK, Ekpo DS, Sanni TA, Ipinnimo TM, et al. (2023) Health-seeking Behavioral Practices of the Elderly in Rural Community of Ekiti State, Southwestern Nigeria. Nigerian Journal of Medicine 32(3): 251-258.
13. Okojie PW, Lane R (2020) Health care options and factors influencing health seeking behavior in a rural community in Nigeria: A cross-sectional study. Christ J Glob Health 7: 83-84.
14. Langmann E (2023) Vulnerability, ageism, and health: is it helpful to label older adults as a vulnerable group in health care? Medicine, health care, and philosophy 26(1): 133-142.
15. Nzeagwu OC, Iheme GO, Nkuku EN (2021) Anthropometric Status and Nutritional Risks of Older adults in Umuahia Metropolis, Abia State, Nigeria. Journal of Dietitians Association of Nigeria (JDAN) 12: 2141-8209; eISSN: 2635-3326.
16. Manoussi A, Nacer N, Kajjoune I (2025) Prevalence and predictors of overweight and obesity among women of childbearing age in the province of Essaouira, Morocco. BMC Public Health 25(1): 135.
17. Bhattarai P, Vaidya A, Tylleskär T (2025) Overweight, obesity and physical inactivity among women of reproductive age in Eastern Nepal: a cross-sectional community-based study. PLOS global public health 5(3): e0004360.
18. Mosha D, Paulo HA, Mwanyika SM (2021) Risk factors for overweight and obesity among women of reproductive age in Dar es Salaam, Tanzania. BMC Nutr 7(1): 37.
19. Modjadji P (2020) Socio-demographic Determinants of Overweight and Obesity Among Mothers of Primary School Children Living in a Rural Health and Demographic Surveillance System Site, South Africa. Open Public Health J 13: 518-528.

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

20. Swarup S, Ahmed I, Grigorova Y (2024) Metabolic Syndrome. In: StatPearls. Treasure Island (FL): StatPearls Publishing

21. Preda A, Carbone F, Tirandi A (2023) Obesity phenotypes and cardiovascular risk: From pathophysiology to clinical management. Rev EndocrMetabDisord 24: 901-919.

22. Powell WTM, Poirier P, Burke LE, Després JP, Gordon LP, et al. (2021) on behalf of the American Heart Association Council on Lifestyle and Cardiometabolic Health; Council on Cardiovascular and Stroke Nursing; Council on Clinical Cardiology; Council on Epidemiology and Prevention; and Stroke Council (2021). Obesity and cardiovascular disease: a scientific statement from the American Heart Association. Circulation 143(21): e984-e1010.

23. Moosaie F, FatemiAbhari SM, Deravi N, Karimi BA, Esteghamati S, et al. (2021) Waist-To-Height Ratio Is a More Accurate Tool for Predicting Hypertension Than Waist-To-Hip Circumference and BMI in Patients with Type 2 Diabetes: A Prospective Study. Frontiers in public health 9: 726288.

24. Soliman H, Ahmed S, Ibrahim A (2021) Waist-to-height ratio as a clinical predictor for cardiovascular risks and insulin resistance in children and adolescents with exogenous obesity. Egypt Pediatric Association Gaz 69: 38.

25. Alshamiri MQ, Mohd AHF, Al Qahtani SS, Alghalayini KA, Al Qattan OM, et al. (2020) Waist-to-Height Ratio (WHtR) in Predicting Coronary Artery Disease Compared to Body Mass Index and Waist Circumference in a Single Center from Saudi Arabia. Cardiology research and practice 2020: 4250793.

26. Pasdar Y, Moradi S, Moludi J, Saiedi S, Moradinazar M, et al. (2020) Waist-to-height ratio is a better discriminator of cardiovascular disease than other anthropometric indicators in Kurdish adults. Scientific reports 10(1): 16228.

27. Segun A, Zhang B, Mary AM, Kibenja D, Adeniyi I, et al. (2024) Exploring the relationship between dietary patterns and obesity among Nigerian adults: a cross-sectional study. BMC public health 24(1): 1319.

28. Johnson VR, Anekwe CV, Washington TB, Chhabria S, Tu L, et al. (2023) A Women's health perspective on managing obesity. Progress in cardiovascular diseases 78: 11-16.

29. Marsh ML, Oliveira MN, Vieira PVJ (2023) Adipocyte Metabolism and Health after the Menopause: The Role of Exercise. Nutrients 15(2): 444.

30. Shams P, Tackling G, Borhade MB (2025) Hypertensive Heart Disease. In: StatPearls. Treasure Island (FL): StatPearls Publishing.

31. Palacios S, Chedraui P, Sánchez BR, Coronado P, Nappi RE, et al. (2024) Obesity and menopause. Gynecological Endocrinology 40(1): 2312885.

32. Kamińska MS, Schneider MD, Rachubińska K, Panczyk M, Grochans E, et al. (2023) Menopause Predisposes Women to Increased Risk of Cardiovascular Disease. Journal of Clinical Medicine 12(22): 7058.

33. Kodoth V, Scaccia S, Aggarwal B (2022) Adverse Changes in Body Composition During the Menopausal Transition and Relation to Cardiovascular Risk: A Contemporary Review. Women's health reports (New Rochelle, N.Y.) 3(1): 573-581.

34. El Khoudary SR, Aggarwal B, Beckie TM, Hodis HN, Johnson AE, et al. (2020) On behalf of the American Heart Association Prevention Science Committee of the Council on Epidemiology and Prevention; and Council on Cardiovascular and Stroke Nursing, Menopause transition and cardiovascular disease risk: implications for timing of early prevention: a scientific statement from the American Heart Association. Circulation 142(25): e506-e532.

35. Rosario O, Mercedes SP, Esther GE (2024) Alcohol Consumption Patterns and Mortality Among Older Adults with Health-Related or Socioeconomic Risk Factors. JAMA Netw Open 7(8): e2424495.

36. Aremu T, Anibijuwon IB, John AYO, Oluwasanu M, Oladepo O (2021) Prevalence and Factors Associated with Alcohol Use in Selected Urban Communities in Ibadan, Nigeria. Community Health Equity Research & Policy 43(2): 203-209.

37. Okonoda K, James B, Piwuna C, Envuladu E (2020) Alcohol Use Disorders and Associated Factors among an Elderly Community Sample in Nigeria: A Cross-Sectional Survey. Open Journal of Psychiatry 10(3): 114-126.

38. Adeloye D, Auta A, Fawibe A (2019) Current prevalence pattern of tobacco smoking in Nigeria: a systematic review and meta-analysis. BMC Public Health 19(1): 1719.

39. Wu J, Fu Y, Chen D, Zhang H, Xue E, et al. (2023) Sedentary behavior patterns and the risk of non-communicable diseases and all-cause mortality: A systematic review and meta-analysis. International journal of nursing studies 146: 104563.

40. Elisa PF, Rosa P, Angelina GV, Conxa C, Jorge AdlT, et al. (2022) Daily sitting time and its association with non-communicable diseases and multimorbidity in Catalonia, European Journal of Public Health 32(1): 105-111.

41. Cao Z, Xu C, Zhang P, Wang Y (2022) Associations of sedentary time and physical activity with adverse health conditions: Outcome-wide analyses using isotemporal substitution model. EClinical Medicine 48: 101424.

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983

DOI: 10.19080/CRDOJ.2025.18.555983

How to cite this article: Mosimabale Margret Meka, Sanni Simbiat Moyomola, Umeaku O Patricia and Olanrewaju Omoniyi Isaac, Prevalence and Risk Factors of Non-communicable Diseases among Older People in Rural Area of Owo Local Government, Ondo State, Nigeria. Curr Res Diabetes Obes J 2025; 18(2): 555983. DOI: 10.19080/CRDOJ.2025.18.555983