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Prevalence of Metabolic Syndrome among Urban Adults: A Community-Based Cross-Sectional Study from Nigeria

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ABSTRACT

Background: The metabolic syndrome (MetS), a constellation of central adiposity, dysglycaemia, atherogenic dyslipidaemia, and elevated blood pressure, is rising rapidly across sub-Saharan Africa as urbanization, dietary transition, and sedentary lifestyles transform population health. Reliable community-based prevalence estimates are essential to inform non-communicable disease screening and prevention policy in Nigeria. The present study estimated the prevalence and determinants of MetS among urban adults in a Nigerian community. ***Methods***: A community-based cross-sectional study was conducted over twelve months among 400 adults aged ≥18 years selected through multistage cluster sampling from an urban local government area. Data on sociodemographics, lifestyle, anthropometry, blood pressure, fasting plasma glucose, and lipid profile were obtained. MetS was defined using the 2009 Harmonized (Joint Interim Statement) criteria. Data were analyzed using SPSS v26; binary logistic regression was used to identify independent predictors. A p-value <0.05 was considered statistically significant. ***Results***: Mean age was 42.6±13.8 years; 232 (58.0%) were female. The overall prevalence of MetS was 25.5% (95% CI 21.4–30.0). Prevalence was significantly higher among females (31.5%) than males (17.3%) (p=0.001) and increased with age, from 11.1% in those aged 18–29 years to 40.0% in those ≥60 years (p<0.001). Central obesity (44.5%) and elevated blood pressure (39.0%) were the most frequent components. On multivariable analysis, female sex (aOR 2.18, 95% CI 1.32–3.61; p=0.002), age ≥45 years (aOR 2.65, 1.56–4.51; p<0.001), family history of diabetes (aOR 1.92, 1.18–3.13; p=0.009), and physical inactivity (aOR 1.74, 1.07–2.83; p=0.025) were independently associated with MetS. ***Conclusion***: One in four urban Nigerian adults has the metabolic syndrome, with women and older individuals disproportionately affected. Community-level cardiometabolic screening, lifestyle interventions, and integration of MetS detection into routine primary care are urgently warranted.

Keywords: *Metabolic Syndrome, Cardiovascular Risk, Urban Africa, Cross-Sectional Study, Nigeria.*

INTRODUCTION

The metabolic syndrome (MetS) is a clustering of interrelated cardiometabolic risk factors—central obesity, dysglycaemia, atherogenic dyslipidaemia, and elevated blood pressure—that together confer a markedly elevated risk of type 2 diabetes mellitus and atherosclerotic cardiovascular disease [1]. First conceptualized by Reaven in 1988 as "syndrome X," it has since been refined through several diagnostic frameworks, culminating in the 2009 Harmonized (Joint Interim Statement) criteria endorsed by the International Diabetes Federation, American Heart Association, and National Heart, Lung, and Blood Institute [2]. Individuals with MetS carry a two-fold increase in cardiovascular events and a five-fold increase in incident type 2 diabetes mellitus compared with those without the syndrome [3].

Globally, the prevalence of MetS has surged in tandem with the obesity and diabetes epidemics, with current estimates suggesting that one in four adults is affected, although prevalence varies widely by region, ethnicity, age, sex, and the diagnostic criteria applied.[1] Sub-Saharan Africa, long characterized by infectious and nutritional disease burdens, is now confronting an accelerating epidemiological transition in which non-communicable diseases (NCDs) are projected to overtake communicable diseases as the leading cause of death by 2030 [4]. Urbanization, sedentary occupations, mechanized transport, dietary shifts toward energy-dense ultra-processed foods, and rising socioeconomic stratification have together produced a steep increase in obesity, hypertension, and dysglycaemia across the continent [5].

Nigeria, the most populous nation in Africa with over 220 million inhabitants, exemplifies this epidemiological transition. The country is undergoing rapid demographic and lifestyle changes, with urban dwellers exhibiting the highest burden of cardiometabolic risk factors. Single- and multi-component studies in Nigerian populations have documented rising age-standardized prevalences of obesity, hypertension, and type 2 diabetes mellitus over the past three decades [6]. However, MetS as a composite construct has been inconsistently measured, and population-based estimates remain heterogeneous across regions, with reported prevalences ranging widely from 12% to over 35% depending on the criteria used and the population studied [7].

Identifying MetS at the community level is of substantial public health importance because it captures individuals at high cardiometabolic risk who may otherwise escape detection in conventional single-disease screening programmes. Early identification permits targeted lifestyle interventions, risk-factor modification, and pharmacological treatment, all of which have demonstrated efficacy in preventing progression to overt cardiovascular disease and diabetes mellitus [8]. Furthermore, understanding the sociodemographic, behavioural, and anthropometric correlates of MetS in specific populations is essential for designing context-appropriate prevention strategies, particularly in resource-limited settings where screening capacity is constrained [9].

Several Nigerian studies have explored aspects of cardiometabolic risk in subgroups such as hypertensive patients, hospital outpatients, and occupational cohorts, but community-based studies using harmonized international criteria remain comparatively few, and there is geographic and methodological heterogeneity that limits comparability and generalizability. Moreover, sex- and age-stratified data on MetS prevalence in urban Nigerian communities are sparse, despite mounting evidence that women in sub-Saharan Africa bear a disproportionate burden of cardiometabolic disease, possibly reflecting the combined influence of higher rates of central adiposity, post-menopausal lipid changes, and reduced physical activity [10].

The Harmonized 2009 criteria offer several methodological advantages over earlier definitions in that they allow population- and ethnicity-specific waist circumference thresholds and require any three of five risk components rather than mandating central obesity as an obligatory criterion. This approach is particularly relevant for African populations in whom MetS may present with prominent dysglycaemia and dyslipidaemia in the absence of central obesity at the thresholds derived from European cohorts [2]. A community-based study utilizing these contemporary criteria therefore offers improved sensitivity for detecting at-risk individuals in urban Nigerian settings.

In addition to estimating absolute prevalence, identifying the relative contribution of each MetS component is of clinical and policy relevance, as it informs the most cost-effective screening modalities. Anthropometric and blood-pressure measurements, which are inexpensive and require minimal infrastructure, may detect a substantial proportion of affected individuals if central obesity and hypertension constitute the dominant components. Conversely, where dysglycaemia and dyslipidaemia predominate, biochemical screening must be incorporated. The pattern of components observed in a population thus has direct implications for primary-care service delivery [5, 6].

Against this background, the present community-based cross-sectional study was undertaken to estimate the prevalence of metabolic syndrome among urban adults in a Nigerian community using the Harmonized 2009 criteria, to characterize the frequency of individual MetS components, to describe variation across age and sex, and to identify independent sociodemographic and behavioural predictors. The findings are intended to inform local non-communicable disease screening, primary prevention strategies, and resource allocation, while contributing to the wider African evidence base on the cardiometabolic transition.

Aims and Objectives

The present study aimed to determine the prevalence and pattern of the metabolic syndrome among adults residing in an urban community in Nigeria. The primary objective was to estimate the overall prevalence of metabolic syndrome using the 2009 Harmonized criteria. The secondary objectives included determining the frequency of individual metabolic syndrome components, comparing prevalence across age groups and between sexes, and identifying independent sociodemographic and behavioural predictors of metabolic syndrome through multivariable logistic regression. The study also sought to characterize the anthropometric, blood-pressure, glycaemic, and lipid profiles of the participants and to relate these findings to local public-health priorities for non-communicable disease prevention.

Materials and Methods

Study Design and Setting

This was a community-based cross-sectional study carried out over a twelve-month period in an urban local government area within Nigeria, served by a tertiary care teaching hospital. The selected catchment was characterized by a heterogeneous mix of formal and informal sector occupations, varying socioeconomic strata, and high population density typical of Nigerian urban centres. The protocol was approved by the institutional Health Research Ethics Committee, and the study was conducted in accordance with the principles of the Declaration of Helsinki. Written informed consent was obtained from each participant prior to data collection.

Sample Size

The sample size was calculated using the Cochran formula for cross-sectional prevalence studies, $n = Z^2pq/d^2$, where Z=1.96 for a 95% confidence level, p was set at 25% (an estimate based on prior Nigerian community-based studies), q=1−p, and d=0.05 (allowable margin of error). The minimum required sample size was 288, increased to 400 to allow for non-response and adequate subgroup analysis.

Sampling Technique

Participants were recruited using a multistage cluster sampling technique. In the first stage, three wards within the urban local government area were selected by simple random sampling. In the second stage, streets within each selected ward were enumerated and a proportionate number was randomly chosen. In the third stage, households within each selected street were sampled systematically, and one consenting eligible adult per household was enrolled. Where multiple eligible adults were present, one participant was selected by simple random ballot.

Inclusion Criteria

Adults aged 18 years and above who were resident in the selected community for at least six months and provided written informed consent were included.

Exclusion Criteria

Pregnant women, individuals with established cardiovascular disease, chronic kidney disease, or active malignancy, those on systemic corticosteroid therapy, individuals unable to provide informed consent due to cognitive impairment, and those with acute febrile illness at the time of assessment were excluded.

Data Collection

A structured, interviewer-administered questionnaire adapted from the WHO STEPwise Approach to NCD Risk Factor Surveillance was used to collect information on sociodemographic characteristics, lifestyle (smoking, alcohol consumption, physical activity), dietary patterns, family history, and medical history. Trained research assistants administered the questionnaire in English or the local language as appropriate.

Anthropometric and Clinical Measurements

Body weight was measured to the nearest 0.1 kg with light clothing and without footwear using a calibrated digital weighing scale. Height was measured to the nearest 0.1 cm with a stadiometer. Body mass index was calculated as weight (kg) divided by height squared (m^2). Waist circumference was measured midway between the lower rib margin and the iliac crest with the participant standing and breathing normally, using a non-stretchable tape. Blood pressure was measured in the sitting position after at least five minutes of rest, using a validated automated oscillometric device, with the average of two readings taken five minutes apart recorded.

Biochemical Analysis

After an overnight fast of at least eight hours, venous blood samples were drawn for measurement of fasting plasma glucose, total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, and triglycerides, all analyzed using standard enzymatic methods on an autoanalyzer at the institutional clinical chemistry laboratory under appropriate quality control.

Definition of Metabolic Syndrome

The metabolic syndrome was defined according to the 2009 Harmonized (Joint Interim Statement) criteria. The presence of any three of the following five components was diagnostic: (i) elevated waist circumference (≥94 cm in men and ≥80 cm in women, applying the European/Sub-Saharan African cut-off); (ii) elevated triglycerides ≥150 mg/dL or specific drug treatment; (iii) low high-density lipoprotein cholesterol <40 mg/dL in men or <50 mg/dL in women or specific drug treatment; (iv) elevated blood pressure ≥130/85 mmHg or use of antihypertensive medication; (v) elevated fasting plasma glucose ≥100 mg/dL or use of glucose-lowering therapy.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS version 26.0 (IBM Corp., Armonk, NY). Continuous variables were summarized as mean ± standard deviation or median with interquartile range as appropriate, and categorical variables as frequencies and percentages. Group comparisons were performed using independent samples t-test, chi-square test, or Fisher's exact test as appropriate. Binary logistic regression was used to identify independent predictors of metabolic syndrome, with variables significant at $p<0.10$ on bivariate analysis entered into the multivariable model. Adjusted odds ratios with 95% confidence intervals were reported. A two-sided p-value <0.05 was considered statistically significant.

RESULTS

A total of 400 participants completed the study, with a response rate of 96.4%. The mean age was 42.6±13.8 years (range 18–76 years), and 232 (58.0%) were female. The mean body mass index was 27.4±5.2 kg/m², and the mean waist circumference was 89.6±12.4 cm. A history of hypertension was reported by 112 (28.0%) participants, while 44 (11.0%) reported known diabetes mellitus. Current smoking was reported by 36 (9.0%) participants, regular alcohol consumption by 96 (24.0%), and physical inactivity (defined as <150 min/week of moderate-intensity activity) by 184 (46.0%). The detailed sociodemographic and clinical characteristics of the participants are summarized in Table 1.

Mean fasting plasma glucose was 96.4±18.7 mg/dL, mean total cholesterol 188.2±37.8 mg/dL, mean low-density lipoprotein cholesterol 116.8±32.1 mg/dL, mean high-density lipoprotein cholesterol 47.6±11.4 mg/dL, and mean triglycerides 132.6±58.4 mg/dL. Mean systolic blood pressure was 128.4±17.6 mmHg, and mean diastolic blood pressure was 81.2±10.8 mmHg, as detailed in Table 2.

The frequency of individual MetS components was as follows: central obesity 178/400 (44.5%), elevated blood pressure 156/400 (39.0%), low HDL cholesterol 132/400 (33.0%), elevated triglycerides 96/400 (24.0%), and elevated fasting plasma glucose 84/400 (21.0%) (Table 3, Figure 2). Central obesity was significantly more frequent in women than men (54.7% vs 30.4%, p<0.001), while elevated blood pressure was more frequent in men (44.0% vs 35.3%, p=0.078). The proportion of participants with zero, one, two, three, four, or five components was 22.0%, 26.5%, 26.0%, 17.0%, 6.5%, and 2.0%, respectively.

The overall prevalence of metabolic syndrome (≥3 components) was 102/400 (25.5%, 95% CI 21.4–30.0). Prevalence was significantly higher in females compared with males (73/232 [31.5%] vs 29/168 [17.3%], p=0.001). MetS prevalence increased progressively with age, from 8/72 (11.1%) in the 18–29 years group, to 28/140 (20.0%) in the 30–44 years group, 38/118 (32.2%) in the 45–59 years group, and 28/70 (40.0%) in those ≥60 years (χ^2 for trend p<0.001), as shown in Table 4 and Figure 1. The age-related increase was more pronounced in women than men, with the highest prevalence (47.4%) recorded in women aged ≥60 years.

On bivariate analysis, female sex, age ≥45 years, higher educational attainment, family history of diabetes mellitus, physical inactivity, and higher socioeconomic status were each associated with metabolic syndrome (all p<0.10). On multivariable binary logistic regression, female sex (adjusted OR 2.18, 95% CI 1.32–3.61; p=0.002), age ≥45 years (aOR 2.65, 1.56–4.51; p<0.001), family history of diabetes mellitus (aOR 1.92, 1.18–3.13; p=0.009), and physical inactivity (aOR 1.74, 1.07–2.83; p=0.025) emerged as independent predictors of metabolic syndrome. Smoking, alcohol consumption, and educational attainment did not retain statistical significance after adjustment (Table 5).

When the prevalence figures from the present study were compared with selected published Nigerian and African community-based studies, considerable heterogeneity was apparent, reflecting differences in population characteristics, geographic location, and diagnostic criteria. The prevalence observed in the present study (25.5%) was broadly comparable to estimates from urban populations in northern Nigeria and southern Africa but exceeded those from rural Nigerian and Ghanaian cohorts (Table 6).

Table 1: Sociodemographic and clinical characteristics of study participants (n=400)

Variable	Frequency (n)	Percentage (%)
Age group (years)		
18–29	72	18.0
30–44	140	35.0
45–59	118	29.5
≥60	70	17.5
Sex		
Male	168	42.0
Female	232	58.0
Education		
≤Primary	84	21.0
Secondary	164	41.0
Tertiary	152	38.0
Employment		
Formal	172	43.0
Informal/self-employed	180	45.0
Unemployed/retired	48	12.0
Known hypertension	112	28.0
Known diabetes mellitus	44	11.0

Current smoker	36	9.0
Regular alcohol use	96	24.0
Physical inactivity (<150 min/week)	184	46.0
Family history of diabetes mellitus	108	27.0
Family history of hypertension	168	42.0

Table 2: Anthropometric, blood pressure, and biochemical parameters of study participants

Parameter	Mean ± SD	Range
Body weight (kg)	72.4 ± 13.8	44.0–116.0
Height (m)	1.63 ± 0.09	1.45–1.86
Body mass index (kg/m²)	27.4 ± 5.2	17.6–43.8
Waist circumference (cm)	89.6 ± 12.4	62.0–124.0
Systolic BP (mmHg)	128.4 ± 17.6	92–192
Diastolic BP (mmHg)	81.2 ± 10.8	58–118
Fasting plasma glucose (mg/dL)	96.4 ± 18.7	68–214
Total cholesterol (mg/dL)	188.2 ± 37.8	112–298
LDL cholesterol (mg/dL)	116.8 ± 32.1	54–224
HDL cholesterol (mg/dL)	47.6 ± 11.4	24–86
Triglycerides (mg/dL)	132.6 ± 58.4	48–386

Table 3: Frequency of individual metabolic syndrome components by sex

Component	Overall n (%)	Male n (%)	Female n (%)	p-value
Central obesity (↑WC)	178 (44.5)	51 (30.4)	127 (54.7)	<0.001
Elevated BP	156 (39.0)	74 (44.0)	82 (35.3)	0.078
Low HDL cholesterol	132 (33.0)	44 (26.2)	88 (37.9)	0.014
Elevated triglycerides	96 (24.0)	44 (26.2)	52 (22.4)	0.378
Elevated fasting plasma glucose	84 (21.0)	39 (23.2)	45 (19.4)	0.345

Table 4: Prevalence of metabolic syndrome stratified by age and sex

Subgroup	n	MetS positive n (%)	95% CI
Overall	400	102 (25.5)	21.4–30.0
Age 18–29 years	72	8 (11.1)	5.4–20.5
Age 30–44 years	140	28 (20.0)	14.0–27.7
Age 45–59 years	118	38 (32.2)	24.3–41.3
Age ≥60 years	70	28 (40.0)	29.2–51.8
Male overall	168	29 (17.3)	12.2–23.8
Female overall	232	73 (31.5)	25.8–37.7
Male 18–29	32	2 (6.3)	1.7–20.1
Male 30–44	62	9 (14.6)	7.6–25.7
Male 45–59	50	12 (24.0)	13.9–37.8
Male ≥60	24	6 (25.0)	11.0–47.0
Female 18–29	40	6 (15.0)	6.7–29.4
Female 30–44	78	19 (24.4)	16.0–35.0
Female 45–59	68	26 (38.2)	27.3–50.4
Female ≥60	46	22 (47.8)	33.5–62.5

Table 5: Multivariable logistic regression for predictors of metabolic syndrome

Predictor	Adjusted OR	95% CI	p-value
Female sex	2.18	1.32–3.61	0.002
Age ≥45 years	2.65	1.56–4.51	<0.001
Family history of diabetes mellitus	1.92	1.18–3.13	0.009
Physical inactivity	1.74	1.07–2.83	0.025
Tertiary education	1.46	0.86–2.48	0.162
Higher socioeconomic status	1.58	0.96–2.60	0.072
Current smoking	1.34	0.71–2.53	0.367
Regular alcohol consumption	1.21	0.69–2.13	0.508

Table 6: Comparison of metabolic syndrome prevalence with selected African community-based studies

Study, Year, Country	Setting	Criteria	Prevalence (%)
Present study, Nigeria	Urban community	Harmonized 2009	25.5
Sabir *et al*., 2016, Nigeria (NW)	Urban	IDF	26.4
Ulasi *et al*., 2010, Nigeria (SE)	Semi-urban/rural	NCEP-ATP III	18.4
Oguoma *et al*., 2015, Nigeria	Urban	Harmonized 2009	29.0
Gyakobo *et al*., 2012, Ghana	Rural	IDF	12.7
Kelliny *et al*., 2008, Seychelles	Mixed	Harmonized	24.0
Garrido *et al*., 2009, Botswana	Hospital workers	IDF	21.0

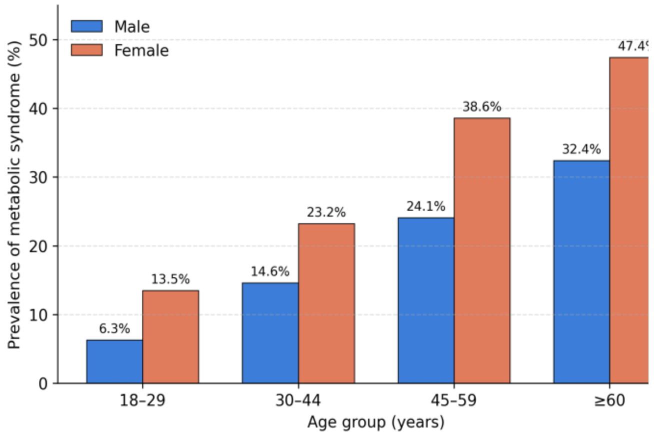

Figure 1: Prevalence of metabolic syndrome stratified by age group and sex among urban Nigerian adults

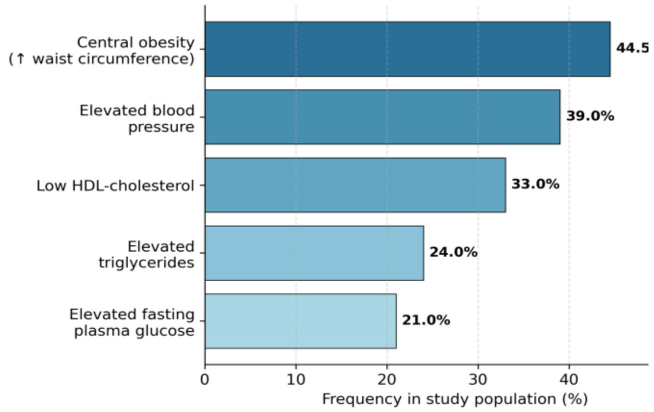

Figure 2: Frequency of individual metabolic syndrome components in the study population (n=400)

DISCUSSION

The present community-based cross-sectional study estimated the prevalence of metabolic syndrome at 25.5% among urban adults in a Nigerian community using the Harmonized 2009 criteria, with a striking gradient by sex and age and a predominance of central obesity and elevated blood pressure as the leading components. These findings reinforce that the cardiometabolic transition is well advanced in urban Nigeria and carries significant implications for non-communicable disease policy and primary care delivery.

The overall prevalence observed in this study is broadly comparable to that reported by Sabir and colleagues in north-western Nigeria, where 26.4% of urban adults met IDF criteria for MetS [11], and to the figure of 29.0% reported by Oguoma *et al*., in a multi-region Nigerian survey applying Harmonized criteria [12]. However, the present figure exceeds estimates from rural and semi-urban Nigerian cohorts; for instance, Ulasi *et al*., reported a prevalence of 18.4% in a semi-urban and rural population using NCEP-ATP III criteria [13], and Adediran *et al*., observed similar lower estimates in mixed urban–rural samples in south-western Nigeria. Such gradients between urban and rural settings are well documented and consistent with the differential exposure to obesogenic environments, physical inactivity, and dietary changes that accompany urbanization [14].

Across sub-Saharan Africa, MetS prevalence in adult community samples ranges widely from 10% to over 30%, depending on geography, urbanity, and diagnostic framework. Gyakobo *et al*., reported a prevalence of 12.7% in rural Ghanaian adults using IDF criteria [15], Kelliny *et al*., observed 24% in the Seychelles [16], and Garrido *et al*., reported 21% among Botswanan hospital workers [17]. The clustering of figures in the 20–30% range across urban African populations underscores the universality of the cardiometabolic transition, while the much lower rural figures highlight the protective effect of traditional lifestyles.

The marked sex disparity observed in the current study, with women experiencing nearly twice the prevalence of MetS as men (31.5% vs 17.3%), aligns with consistent observations across African populations. Ogbera reported female predominance of MetS in a Nigerian hospital-based study,[6] and several West African community studies have documented similar gender gaps. The disparity is largely driven by the substantially higher prevalence of central obesity and low HDL cholesterol in women, which in turn reflects the combined contribution of post-menopausal hormonal change, parity-related weight retention, lower physical activity levels among women in many African societies, and cultural attitudes toward body weight [18]. This finding has direct implications for screening strategies, which should pay particular attention to women, especially those in mid- and later life.

The progressive increase in MetS prevalence with age, from 11.1% in those aged 18–29 years to

40.0% in those aged ≥60 years, is consistent with global epidemiological evidence that ageing is one of the most consistent and powerful drivers of cardiometabolic risk clustering [19]. This pattern likely reflects the cumulative effects of weight gain, declining physical activity, age-related insulin resistance, and progressive vascular dysfunction. The implication is that population-level cardiometabolic screening should be intensified from the age of 40–45 years, when prevalence begins to exceed 30%.

The component analysis revealed that central obesity was the most frequent abnormality (44.5%), followed by elevated blood pressure (39.0%) and low HDL cholesterol (33.0%), with dysglycaemia and elevated triglycerides being relatively less common. This pattern resembles that reported in other Nigerian and East African studies and suggests that anthropometric and blood-pressure measurements—both inexpensive and non-invasive—could capture the majority of high-risk individuals. The relatively lower prevalence of elevated fasting plasma glucose contrasts with reports from South Asian populations, where dysglycaemia tends to dominate the MetS phenotype, possibly reflecting differences in insulin resistance, beta-cell function, and visceral fat distribution [20].

On multivariable analysis, female sex, age ≥45 years, family history of diabetes mellitus, and physical inactivity emerged as independent predictors of MetS, while smoking, alcohol consumption, and educational attainment were not retained. These findings are consistent with the broader literature on cardiometabolic risk in Africa and highlight modifiable behavioural targets, particularly physical activity, for population-level intervention. The lack of association with smoking and alcohol may reflect the relatively low prevalence of these exposures in the present sample, particularly among women, and underlines that socio-cultural patterns of risk-factor exposure differ substantially from Western settings.

The strengths of the present study include its community-based design, multistage random sampling, use of contemporary Harmonized criteria, comprehensive anthropometric and biochemical phenotyping, and adequate statistical power for sub-group analysis. Several limitations warrant acknowledgement. First, the cross-sectional design precludes inference of causality between identified predictors and MetS. Second, dietary intake was not quantitatively assessed, although it is a known determinant. Third, the single-site setting may limit generalizability to other Nigerian regions. Finally, waist circumference cut-offs validated specifically for African populations remain debated, and the use of European/Sub-Saharan African thresholds may have produced minor classification differences.

Despite these limitations, the findings carry clear public health implications. Approximately one in four urban Nigerian adults harbours the metabolic syndrome, and the rates rise sharply with age and among women. This burden is occurring against a backdrop of weak primary-care infrastructure and limited national NCD screening capacity. Integration of opportunistic cardiometabolic risk screening into all adult primary-care encounters, public health campaigns promoting physical activity and healthy diet, and structured workplace and community interventions are urgently needed to stem the rising tide of cardiovascular disease and type 2 diabetes mellitus in Nigeria.

CONCLUSION

Approximately one in four urban Nigerian adults in the present community-based survey met the Harmonized 2009 criteria for the metabolic syndrome, with prevalence rising sharply across age strata and almost twice as high among women as men. Central obesity and elevated blood pressure dominated the component profile. Female sex, advancing age, family history of diabetes mellitus, and physical inactivity emerged as independent predictors. These findings underscore the urgent need for community-level cardiometabolic screening, sex- and age-tailored prevention strategies, and integration of metabolic syndrome detection into routine primary care as part of Nigeria's broader response to the non-communicable disease epidemic.

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