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Cardiovascular risk factors in semi-urban communities in southwest Nigeria: Patterns and prevalence

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Abstract *Introduction:* Over 80% of cardiovascular deaths take place in low- and middle-income countries; most of these deaths are due to modifiable risk factors. The study aimed at estimating the prevalence and pattern of major cardiovascular risk factors in both men and women older than 18 years.

Methods: This is a cross-sectional study of cardiovascular risk factors among semi-urban dwellers in Ekiti State, south-western, Nigeria. 750 participants were drawn from 10 communities. The instrument used was the standard WHO STEPS (II) questionnaire, while blood samples were obtained for analysis.

Results: There were 750 participants with 529 (70.53%) females. The mean age of participants was 61.7 ± 18.50 years and participants' ≥ 65 years comprised 38.3%. There were 0.8%, 24.9% and 12.4%, who at the time of this study smoked cigarettes, consumed alcohol, and ate a high salt diet, respectively. The prevalence of hypertension, diabetes, generalized and abdominal obesity was 47.2%, 6.8%, 8.5% and 32.0%, respectively, with only 48.9% receiving hypertension treatment. Elevated total cholesterol, LDL-cholesterol, and low HDL was seen in 4.4%, 16.7% and 56.3% respectively.

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Conclusion: High prevalence of cardiovascular risk factors call for an urgent need for more public health attention and reinforcement of primary preventive strategies to curb its menace.

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1. Introduction

Cardiovascular diseases (CVDs) are the number one cause of death globally; more people die annually from CVDs than from any other non-communicable disease [1]. An estimated 17.3 million people died from CVDs in 2008, representing 30% of all global deaths. Of these deaths, an estimated 7.3 million were due to coronary heart disease and 6.2 million were due to stroke [2]. Over 80% of CVD deaths take place in low- and middle-income countries and occur almost equally in men and women [1]. Ischemic heart disease and stroke together accounted for 12.9 million deaths in 2010 or one in four deaths worldwide. Of the leading causes of deaths, diabetes mellitus (DM) is the fastest growing globally, responsible for 1.3 million deaths in 2010, which is twice as many as in 1990. Approximately 9.4 million (16.5% of all) deaths can be attributed to hypertension. These include 51% of deaths due to stroke and 45% of deaths due to coronary artery disease. The number of people who die from CVDs – mainly from heart disease and stroke – has been predicted to rise to 23.3 million if no preventive measures are put in place by 2030 [1,3]. CVDs are projected to remain the single leading cause of death [3].

The high burden of CVDs in the developing countries is attributed to the increasing prevalence of atherosclerotic diseases, and perhaps driven by urbanization and increasing risk factor levels which may be modifiable. These risk factors include smoking, lack of physical activity, low fruit and vegetable intake, high fat and salt intake, hypertension, abdominal obesity, dyslipidemia, and excess alcohol intake [3]. The upward trend of CVDs in sub-Saharan Africa is likely a result of the increasing prevalence of some of these modifiable risk factors [4]. Most CVDs can be prevented by early detection and proper management of these risk factors.

Most of the semi-urban (i.e., population density between 1000–3000 persons per square kilometer) communities are inhabited by children, illiterate and semi-illiterate men and women, retirees (who relocated from cities after retirement from active service), all of whom usually belong more to the low- and middle-socioeconomic strata [5]. Cardio-

vascular risk factors among semi-urban dwellers have been thought to be intermediate in occurrence between the rural and urban communities due to admixture of westernized and traditional lifestyles the inhabitants are thought to adopt [6–8]. In suggesting an evidence-based context for government and other health policy planners on health education programs in low-resource settings like Nigeria (with an estimated 60.9% of the citizens living in absolute poverty and majorly living in rural areas) [9], it is important to quantify the proportion of the population at high overall risk of CVDs in order to match this with available resources.

Hence, this study was carried out to estimate the pattern and prevalence of major cardiovascular risk factors in both men and women 18 years and older living in a semi-urban area of Nigeria.

2. Methodology

2.1. Study area

Nigeria is the most populous country in Africa with an estimated population of at least 174.5 million people [9]. The country is made up of 6 geo-political zones with a total of 36 States and the Federal Capital Territory in Abuja. The south-west zone is comprised of 6 States (Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti). The majority speak Yoruba, and the zone is located between latitude 2.8°E and 6.8°E of the Equator with a longitude of 6.0°N and 8.2°N. The study was carried out in Ekiti State. The State is divided into 3 senatorial districts (Ekiti South, North and West). The study area was Ekiti North senatorial district which is made up of 5 local government areas (Ido/Osi, Ikole, Ilejemeje, Moba, Oye LGAs). A total of 10 communities (all semi-urban) were randomly selected within the senatorial districts (2 communities per LGA).

2.2. Study population

The majority of the inhabitants in these communities are of low socio-economic status. They are mainly farmers, traders, and artisans. The community also consists of teachers and retirees who usually depend on their meager pension monies,

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