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Prevalence and Risk factors for non-communicable diseases within a University Community in Southern Nigeria.

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I. Introduction

Non communicable diseases also known in some climes as chronic diseases and lifestyle diseases has received global attention in the last few decades. (1,2) This is because technological advances as well as modernization has solved most of the root causes of most communicable diseases in developed countries. There are vaccines, cleaner environment and good water as well as increased publicity and education concerning infection prevention and control (3). Developed countries have a reduced incidence of communicable diseases. (2) The disease burden in such countries is more from NCDs. In developing countries however, medical personnel are faced with both ends of the spectrum.(4,5) This is commonly known as a double burden of disease. NCDs evolve over time, they are non contagious and can last a life time. This deepens the effect of these conditions.

Paradoxically, the same urbanization that contributed to the reduced incidence of communicable diseases and longevity also accounts for the evolution of NCDs. (1,2, 5)

In the recent few decades, urbanization and development has taken place in the nation and the city. In this almost 50 years old University, the environment has been associated with a lot of development and has upgraded the locality where the university is situated from a village to a small town leading to urbanization. Urbanization has been linked to reduced physical activity, as well as poor intake of fruit and vegetables. In addition to this, growing up in an urban setting is linked to an increased incidence of obesity. (6,5,7)

There are four major categories of NCD's. They include, heart disease and stroke, chronic respiratory diseases, cancers and diabetes. A large percentage of these are preventable by lifestyle and environmental changes.

A retrospective study done in Saudi Arabia, spanning over 10 years found an increase prevalence in cancers by up to 92% as well as an increase in obesity, hypertension and diabetes. (2) the increase in the prevalence of diabetes was more than 300% and that of hypertension was more than 250%. These figures are alarming. (2)

A four year retrospective study that ended in 2004 established that NCD's accounted for 56.2% of all medical admissions in the University of Port Harcourt Teaching Hospital. (1)

Most of the mortality from NCD's occur in developing countries. (5,7) The current figures have been predicted to rise by 2030. (7) Over 7 years ago, Nigeria recorded an estimated 30% of deaths from NCD's. (8) diabetes and hypertension, even when controlled can take a toll on one's finances, (8) when improperly controlled they can lead to damage to other organs and body systems. (9).

Various studies have found an association between certain lifestyle practices and the evolution of some cancers, type 2 DM, some heart diseases and stroke. (5,7) These practices include, poor diet, inactivity, lack of exercise, alcohol use, among others. (5,7)

All these are important because modifying these risk factors appropriately can lead to a decline of the incidence of these conditions. Up to 40% of cancers and 4 out of every 5 of the other three classes of non communicable diseases can be prevented by proper lifestyle practices. (5)

The aim of our study was to establish the rate of risk factors for non communicable diseases among staff and students of uniport community. This potentially can affect both the life span and quality of life of the members of the community.

II. Methodology

Study Design: this was a descriptive cross sectional study.
Study site: University of Port Harcourt. This is one of the pioneer universities in Rivers State, a state in Southern Nigeria. It is the only Federal Government University in the State. Port Harcourt is the capital of the state.
Sample population; Staff and Students at an open day in the university
Sampling technique: Purposive sampling technique was utilized here. All consecutive staff that came for the open day in 2024 and gave consent were included in the study.
Sample Size: One hundred and twenty participants were recruited for the study.
Study tools: A researcher administered questionnaire was used to obtain basic information and history. Measurements were taken using a standard measuring scale, a stadiometer and a sphygmomanometer. A pinprick blood specimen was obtained from the thumb and blood glucose was assayed using a glucometer.
Verbal and written informed consent were obtained from all participants. Ethical clearance was obtained from the University of Port Harcourt Teaching Hospital Ethical Committee.
Statistical considerations: Data was recorded and transcribed to an excel sheet and then exported to SPSS version 23 for analysis.

III. Results

Table 1: Socio-demographic Features

Variable	Frequency (n=120)	Percent
Gender		
Male	46	38.3
Female	74	61.7
Age group (years)		
19 – 28	47	39.2
29 – 38	16	13.3
39 – 48	26	21.7
49 – 58	23	19.1
>58	8	6.7
Mean age group: 38.06 ± 13.58 years		
Marital status		
Single	61	50.8
Married	59	49.2
Educational Level		
Primary	4	3.3
Secondary	51	42.5
Tertiary	65	54.2
Occupation of respondent		
Civil servant	32	28.1
Student	58	50.9
Business	8	7.0
Professional	5	4.4
Artisan	6	5.3
Others	5	4.4
Menopause status		
Yes	26	21.7
No	48	40.0
Not applicable (Male)	46	38.3

The study sampled 46 (38.3%) males and 74 (61.7%) females, having an average sample population age of 38.06 ± 13.58 years. The sample comprised 59 (49.2%) of married people and 65 (54.2%) tertiary level degree holders. Most of the respondents were students and 26 (21.7%) of the female respondents were menopausal. (table 1)

Table 2: History of Lifestyle

Variable	Frequency (n=120)	Percent
Living with Diabetes Mellitus		
Yes	7	5.8
No	113	94.2
Family History		
Yes	41	34.2
No	79	65.8
Alcohol Use		
Yes	43	35.8
No	77	64.2
Smoking status		

Yes	5	4.2
No	115	95.8

The survey identifies 41 (34.2%) respondents with history of diabetes mellitus but 7 (5.8%) respondents are living with the disease. Alcohol and smoking were indulged by 43 (34.2%) and 5 (4.2%) respondents, respectively. (Table 2)

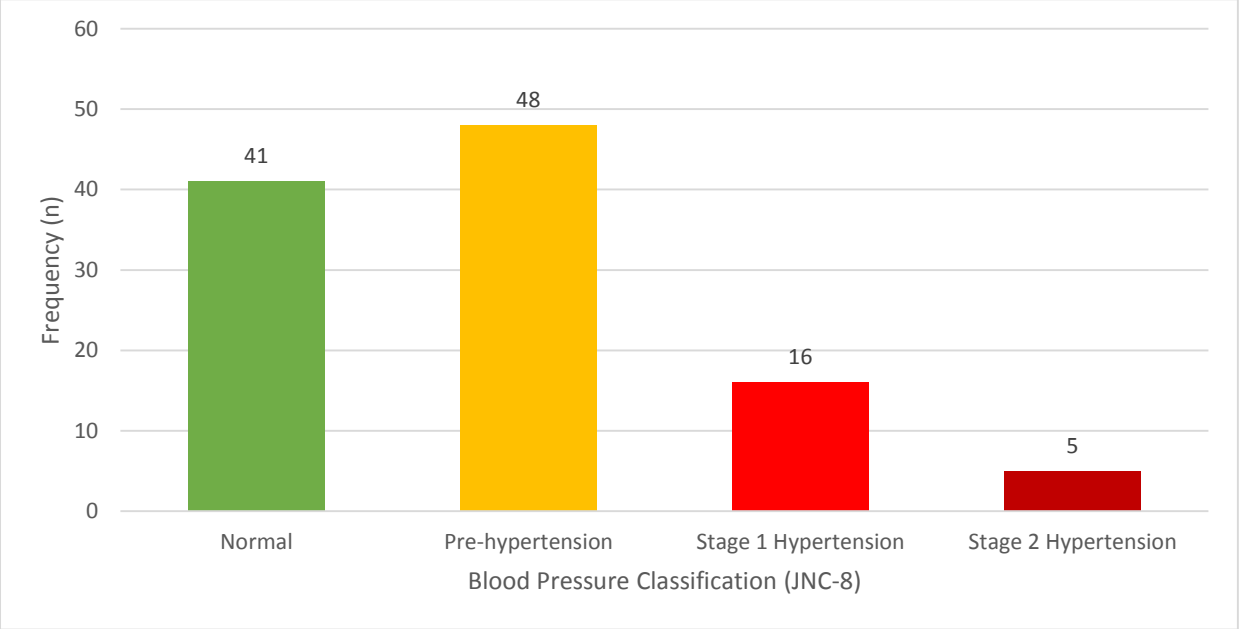

Fig. 1: Hypertension Status of Respondents

The JNC-8 classification of blood pressure identified 5 (4.5%) and 16 (14.5%) cases of stage 2 and stage 1 hypertension amongst the sample population.

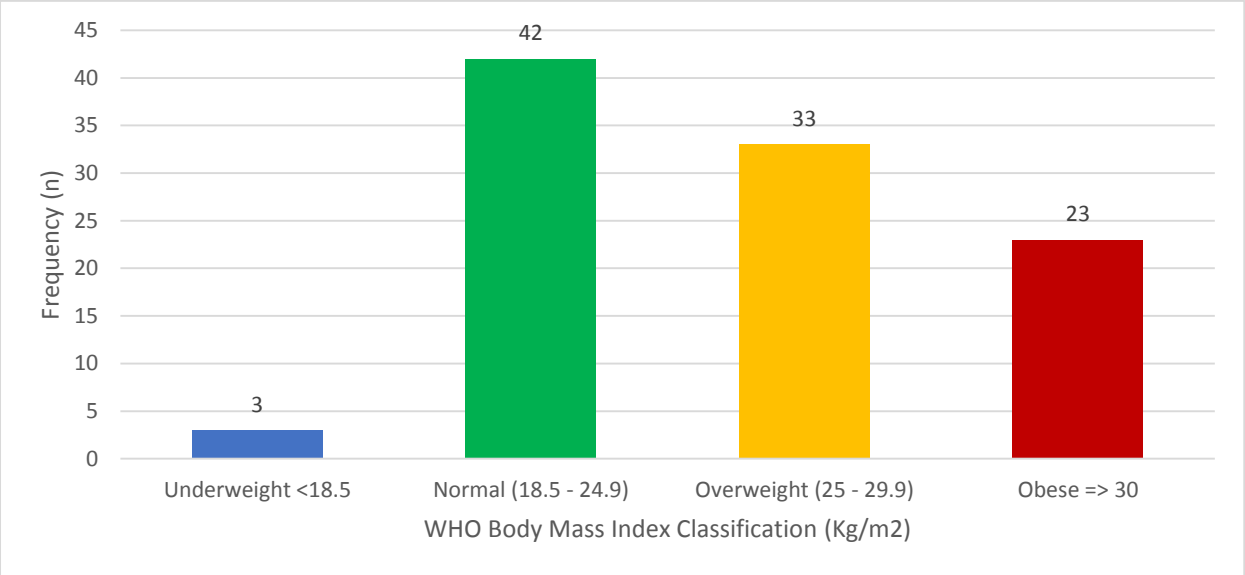

Fig. 2: Obesity Status of Respondents

Using the World Health Organization (WHO) criteria for body mass index classification, 23 (22.8%) of the sample population were obese and 33 (32.7%) were overweight.

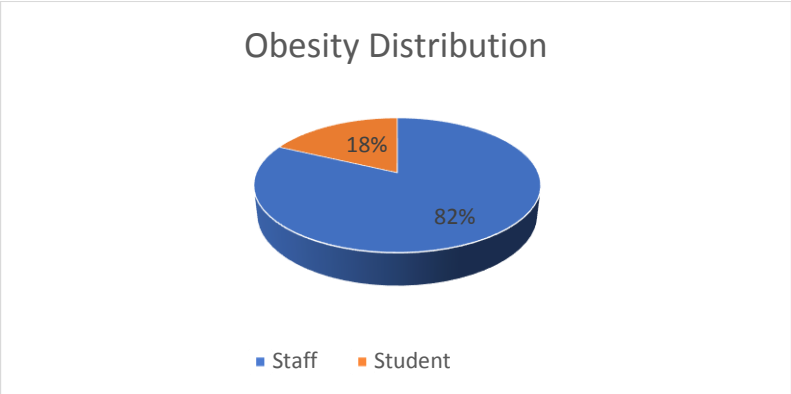

Fig 3. Distribution of obesity among staff and students

IV. Discussion

Most of the respondents were females. All over the world women have been found to be less active than men, physically. (7) This can potentially in the long run without other confounding factors predispose them to more NCD's. However, hypertension and diabetes are commoner in men till after menopause when the risk equalizes due to lack of protection from estrogen (10)

Thirty-four percent 34.2% had a positive family history of diabetes. People with a positive family history of diabetes mellitus are three to four times at a higher risk of developing DM than those without. This is stronger with a mother than a father, and it is also stronger with a first degree than a second degree relative. (11) These sets of people need to watch out for modifiable risk factors and be closely monitored to reduce the index risk.

About thirty five percent (35.8%) of people took alcohol in various degrees. This is higher than what was found among students in Nasarawa state (31.1%) and lower than that found among students in Kwara State. 43.5% (12) It is worth noting that the prevalence rates of alcohol use after half a decade is within the same range. (12) Improper intake of alcohol is one of the 4 major modifiable risk factors for Non communicable diseases. (13) Alcohol use has been implicated in the evolution of cancers, cardiovascular disorders and gastrointestinal disorders. Chronic alcohol use has been implicated in the evolution of hypertension and some cancers. Implicated cancers include oesophagus, liver, colorectal, and breast cancers. (10)

Approximately four percent (4.2%) of participants smoked. This is not too far from the 5.3% found among students in plateau state.(15) This is not surprising, as cigarette smoking has an inverse relationship with urbanization. (4) In addition to this in 2017, Nigeria in accordance with the WHO, Framework Convention on Tobacco Control (FCTC) policy banned all form of media advertising of tobacco to the general public. (16)

WHO has recommended countries to establish national policies on use of tobacco, obesity and physical activity in a bid to encourage positive life style practices to reduce the overall incidence of NCDs. (7) though the worldwide rate of tobacco use has reduced, developing countries record lower percentages of this reduction. This low percentage can also be accounted for based on exposure, a study done in Oyo state found an inverse relationship between smoking and level of education, (19)

In contrast to the two schools above, a cross sectional study among students in a university in eastern Nigeria found out that at least 35% of the students smoked a variety of substances and 12.5% smoked tobacco alone. (18) These students, listed curiosity and friends as a reason why they started smoking. another study done in Birmingham Uk had 14% prevalence rate among staff and students in their institution. (19) The low prevalence of smoking in this study is a plus, because in addition to lung cancer, smoking is associated with almost 15 other cancers including colorectal, bladder, pancreas, prostrate, stomach and kidney.(11)

43.6% of participants had pre-hypertension. This figure is very significant because at least 25% of persons with pre hypertension will become hypertensive over time. (20) This is a critical time for intervention. 37.4% of people had normal blood pressure.

Up to 46% of persons with hypertension are undiagnosed. (21) This study did not differentiate between first incidence of a high blood pressure reading and a known hypertensive with a high blood pressure reading.

33.7% were overweight, and 22.8% were obese. Overweight and obesity are crucial risk factors for a barrage of disease conditions, including hypertension, over ten different cancers, type 2 Diabetes Mellitus, cardiovascular disorders and more. (21)

More staff than students had obesity. This is not unusual as obesity increases with age and the staff were naturally older than the students.

V. Conclusion

Overall, 41.7% of the people in our study had at least one risk factor for NCD's, 24.2% had two, while 11.7% had between 3 to 5 risk factors. For Nigeria to meet the WHO 2025 goals or make substantial progress, all stakeholders need to participate and play their part, in increasing campaigns and having educational strategies. They also need to make and implement polices as well as utilize the online space for role modelling and positive peer group establishment.

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