

**Assessment of Dietary Pattern, Lifestyle, Vitamin D Status, and Undiagnosed Diabetes
Among Traders in Selected Markets Area in Ede, Osun State, Nigeria.**

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Faculty of Basic Medical Sciences, Lead City University, Ibadan, Oyo state, Nigeria**

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Certification

This is to certify that ABDULKAREEM Selim Abuzayd with matriculation number LCU/PG/001927 carried out this research work titled “Assessment of Dietary Pattern, Lifestyle, Vitamin D Status, and Undiagnosed Diabetes Among Trader in Selected Markets Area in Ede, Osun State” in the Department of Biological Science, Faculty of Basic Medical and Health Sciences, Lead City University, Ibadan, Oyo State, for the award of Master Degree in Human Nutrition and Dietetics (Public Health Nutrition) and that this has not been previously submitted.

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Dedication

This research work is dedicated to Almighty Allah, who has made me fulfil my aim.

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Abstract

An unhealthy diet is one of the major risk factors responsible for the increased prevalence of non-communicable diseases (NCDs), including diabetes. Recently, low vitamin D status has been linked with Diabetes mellitus. In Nigeria, there is a paucity of data; hence, this study aimed to assess the dietary pattern, lifestyle, vitamin D status, and undiagnosed diabetes among traders in selected market areas in Ede, Osun State, Nigeria. This study adopted a descriptive cross-sectional community base design, involving consenting and eligible 176 traders attending the three selected major markets in Ede. Participants range in age from 20 and 80 years using a stratified sampling method. A structured interviewer-administered questionnaire was used to obtain information, and biochemical and laboratory assessments were determined by collecting blood samples at different stages for random blood glucose, followed by fasting blood glucose using the AccuChek Active® glucometer, and a serum vitamin D assay using the ELISA method. The comparison was done on the serum vitamin D status between normal and abnormal glycaemic profiles. Overall, 18.1 % of dysglycaemia prevalence (4.5 % prevalence of undiagnosed diabetes and 13.6 % prevalence of prediabetes) and 21.6 % prevalence of hypovitaminosis D comprise 9.1 % of vitamin D deficiency and 12.5 % of vitamin D insufficiency. A higher percentage (51.1 %) of low vitamin D concentration was observed among participants with abnormal glucose profiles, with an odd ratio six times (6.64; 95 % CI, 2.88–15.29) increasing the risk of having undiagnosed type 2 Diabetes mellitus. There is a significant relationship ($p = 0.000$) between vitamin D status and undiagnosed type 2 diabetes. This study demonstrated the magnitude of undiagnosed Diabetes mellitus and surprisingly low vitamin D status in the community, with significant relationships. Hence, serum vitamin D tests should be taken into consideration in a known diabetes mellitus.

Keywords: Hypovitaminosis; dysglycaemia; unhealthy diet, non-communicable diseases

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List of Acronyms

Abbreviation	Meaning
NCDs	Non communicable diseases
IDF	International Diabetes Federation
DM	Diabetes Mellitus
UDM	Undiagnosed Diabetes Mellitus
T2DM	Type 2 Diabetes Mellitus
T1DM	Type 1 Diabetes Mellitus
IGT	Impaired glucose tolerance
IFG	Impaired fasting glucose
NIDDM	Non-insulin Dependent Diabetes Mellitus
CPBA	Competitive protein binding assay
ELISA	Enzyme-linked Immunosorbent Assay
1,25(OH) ₂ D ₃	1,25-dihydroxyvitamin D ₃ (calcitriol)
24,25(OH) ₂ D	24,25-dihydroxyvitamin D ₂ (Ecalcitriol)
25OHD	25-hydroxyvitamin D (Calcidiol or Calcifediol)
VDR	Vitamin D receptor
DBP	Vitamin D binding protein
CYP	Cytochrome p450
CYP27B1	Vitamin D Enzyme, Cytochrome p450 Family 27Subfamily B Member 1

PTH	Parathyroid hormone
TRPV6	Transient receptor potential vanilloid
IFN-gamma	Interferon-gamma
TNF-alpha	Tumor necrosis factor alpha
IGF-1	Insulin-like growth factor 1
FGF23	Fibroblast-like growth factor-23
DNA	Deoxyribonucleic acid
VDRE	Vitamin D response element
DM	Diabetes mellitus
NHANES	National Health and Nutrition Examination Survey
VDD	Vitamin D deficiency
OGTT	Oral Glucose Tolerance Test
HbA1c	Glycated haemoglobin
DCCT	Diabetes Control and Complications Trial
NGSP	National Glycohemoglobin Standardization Program
WHR	Waist-Hip-Ratio
KNHANES	Korea National Health and Nutrition Examination Survey
WHO	World Health Organization
ADA	America Diabetes Association
CVD	Cardiovascular diseases
CAD	Coronary Artery Disease
MI	Myocardial Infarction

CKD	Chronic kidney disease
DN	Diabetic neuropathy
DR	Diabetic retinopathy
PVD	Peripheral vascular disease
DED	Diabetic eye disease
DMO	Diabetic macular oedema
SSA	Sub Saharan Africa
BMI	Body Mass Index
BP	Blood Pressure

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