Project Title:

Variability of Glycaemic and Lipid patterns between Persons with T2DM and T2DM with hypertension across various clinical facilities.

Introduction:

Diabetes is a chronic, metabolic disease affecting over 422 million of the world’s population (WHO, 2024). Over time, diabetes progress to more severe complications such as heart attacks, stroke, kidney failure, and blindness. Dyslipidaemia which is a common comorbid factor among diabetics is a risk factor to cardiovascular diseases. In their study, Achila et al. (2020) concluded that high levels of serum High-Density-Lipoprotein (HDL) among diabetics can be used as a biomarker to cardiometabolic disturbances.

This study will assess HbA1c and lipid profile pattern across different diabetic populations. The outcome of this study will also provide information on how well diabetes is being measured at the various facilities.

Research Objective:

This study aims to:

1. Identify the variability of glycemic and lipid patterns between diabetics with hypertension and persons with diabetes only.
2. Examine the effectiveness of diabetes management across at two regional hospitals in Ghana.

Research Methodology:

Study Setting: The study will be conducted at two regional hospitals in Ghana; Effia Nkwanta regional hospital in the Western region and the Cape Coast hospital in the Central region. This setting was selected since they belong to the top three regions with high diabetes prevalence in the country (Kazibwe et al., 2023).

Study Design and Data Collection:

The cross-sectional study will recruit consented DM patients visiting the selected facilities for routine DM follow-up visit. A simple questionnaire will collect the demographic data, number of years post diagnosis, and information on subjects’ lifestyle. Blood samples will be collected and tested for fasting serum glucose, HbA1c, and fasting lipid profile. The estimated sample size will be 300, 150 from each region. The entire study duration is projected to be 6 months, with four months dedicated to sampling and testing.

Ethical clearance:

Ethical approval will be obtained from the Ghana Health Service, the research and development units at the two selected hospitals, and informed consent will be sought from subjects before being included in the study.

Conclusion:

This research will add to the scanty literature on the lipid patterns among DM patients in Ghana. The level of effectiveness of DM management between the two hospitals will provide evidence on the need for a national Standard Operating Procedure for DM management.

References

1. Achila, O.O., Ghebretinsae, M., Kidane, A., Simon, M., Makonen, S. and Rezene, Y., 2020. Factors associated with poor glycemic and lipid levels in ambulatory diabetes mellitus type 2 patients in Asmara, Eritrea: a cross-sectional study. *Journal of diabetes research*, *2020*, pp.1-12.
2. Kazibwe, J., Gad, M., Abassah-Konadu, E., Amankwah, I., Owusu, R., Gulbi, G., Torres-Rueda, S., Asare, B., Vassall, A. and Ruiz, F., 2023. The Epidemiological and Economic Burden of Diabetes in Ghana: A Scoping Review to Inform Health Technology Assessment. *medRxiv*, pp.2023-04.
3. World Health Organization (2024). Diabetes, Accessed on February 21, 2021 (<https://www.who.int/health-topics/diabetes#tab=tab_1>)