

ABSTRACT

Background: The HbA1c test for monitoring diabetes is expensive and robust to carry out which limits its uptake in many health facilities in low and middle income countries. As a result, health facilities have resorted to use of fasting blood sugar and random blood sugar to monitor diabetes, hence a need to evaluate the performance of the former tests using HbA 1 c.

Methods: This cross sectional study recruited 240 participants. Questionnaires were used to obtain data on socio demographic characteristics of the participants and risk factors of type 2 diabetes. About 4mls of anti- coagulated blood in a fluoride bottle collected for the estimation of glycated Hemoglobin as a gold standard, fasting and random blood glucose levels.

Results: We recruited 240 adult, 98 males (40.8%) and 142 females (59.2%) with type 2 diabetes mellitus (T2DM). In the study, 155(64.6%, 95% CI=58.17-70.63) had HbA1c level greater than 7% (poor diabetes control). With regression, there an association between HBA1c and fasting plasma glucose together with random plasma glucose (t=10.53; p. Value<0.001 and t=5.85; p. Value<0.001 respectively). Still a correlation existed between HBA1c and fasting plasma glucose (0.66) and random plasma glucose (0.52). Gender ($X^2=0.04$, p.V=0.8), Health education on glycemc control ($X^2=1.4$, p.V=0.2), Place of residence($X^2=3.4$, p. V=0.9) and smoking ($X^2=1.9$, p.V=0.2) were not associated with poor glycemc control while Fat consumption ($X^2=41.01$, p.V=<0.001), lack of fruit intake ($X^2=10.4$, p.V=0.001), High blood pressure ($X^2=24.5$, p.V<0.001) and Alcohol intake ($X^2=14.6$, p.V=0.002) were associated with poor glycemc control.

Conclusion: The incidence of poor glycemc control is high among our study participants. The factors associated with poor glycemc control includes high fat intake, heavy alcohol intake and low fruit intake. Both fasting blood glucose and random blood glucose correlate with HbA1c level

Recommendation: More elaborate with big sample size or another study design be conducted to ascertain the relationship between fasting, random plasma glucose and HbA1c level. Patient's management and education on glycemc control be emphasized to improve on their glycemc control.