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Study of fasting plasma glucose levels in non-diabetic subjects related to selected risk factors for type 2 diabetes

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Diabetes is a preventable but a non-curable disease, which is influenced by socio-economic status, sedentary lifestyle and genetic factors of individuals. Hence, the objective of this study was to identify the association between fasting plasma glucose (FPG) with socio-demographic status, family history and lifestyle habits in non-diabetic subjects. A cross-sectional study was conducted in 227 non-diabetic subjects after obtaining ethical approval. FPG was measured using a Glucose Oxidase kit method after an overnight fast. An interviewer-administered questionnaire was used to collect information on socio-demographic factors, family history of diabetes and lifestyle habits. Correlations and differences were analysed using SPSS (ver.17) software. Among 227 subjects 59.9% were females. Majority of them had secondary and tertiary education (90.7%) with the monthly income of more than Rs. 25000 (70.5%). Among the subjects, 10.1% were detected as pre-diabetics (FPG 5.6-6.9 mM/L) and 47.6% had a family history of diabetes. Out of pre-diabetics, 65.2% had familial diabetes. Furthermore, 82.6% of pre-diabetics had monthly income of more than Rs. 25000, and those who had high income also had a higher mean FPG. FPG significantly correlated with age. Subjects older than 35 years had higher significant mean FPG ($p<0.01$). Significant difference was observed with FPG for gender and sleeping duration of more than 6 hours per day ($p<0.01$). Negative correlations were observed with vigorous, moderate and walking activities as well as sleeping at night ($p>0.05$). This study suggests that age, higher household income, family history of diabetes and short sleep are associated with increase in FPG.

Keywords: Fasting plasma glucose, pre-diabetes, household income

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