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Longitudinal change in fasting blood sugar in patients with type-2 diabetes: Based on linear mixed model

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Statement of the Problem: Control of diabetes plays an important role in reducing complications, disability and increasing community health. The purpose of this study is to examine the process of fasting blood sugar changes and its effective factors in patients with type-2 diabetes who were covered by a national project of diabetes prevention and control in Iran.

Methodology & Theoretical Orientation: In this retrospective longitudinal study, 500 patients with type-2 diabetes who were covered by diabetic patients' special cares project during 2013-2016, were selected based on cluster random sampling. Then, the recorded data were collected in their files. LM Model was used to study fasting blood sugar process and its effective factors. Finally, the data were analyzed by R 3.2.0 software.

Findings: The patients' mean age was 47.7 and their illness duration was 2.5 years. Among them, 58.6% were women, 19.8% had smoking experience and 64.5% had family record of diabetes. The process of FBS changes in patients was descending, which implies the recovery of disease conditions. Smoking, age, insulin therapy, diabetes duration, family record and weight were some effective factors which influenced the process of FBS changes.

Conclusion & Significance: In order to create an intimate and convenient relationship between doctor and the patient, perfectly controlling and continuously monitoring patients with type-2 diabetes by a specified doctor seems necessary for controlling illness. Given that a group with insulin therapy had higher mean FBS, it is recommended to examine their insulin dose and some modifications should be made in terms of patients' needs during patients' continuous follow-up. Finally, weight loss and quit smoking during follow-up indicate a good prognosis of disease.

Biography

Samaneh Hosseinzadeh has completed her PhD in Biostatistics. She has experience about advanced modeling on medical data. She is currently teaching in University of Social Welfare and Rehabilitation Sciences.

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