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A mobile and web-based clinical decision support and monitoring system for hypertension and diabetes in primary care: a study protocol

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Background & Aim: The purpose of the study is to develop a user-friendly web and mobile-based CDSMS for HT and DM diseases scanning, diagnosis, treatment and monitoring for the use of physicians and patients in primary care and to determine the effectiveness of the system.
Method: Clinical decision support system (CDSS) will be based on evidence-based guidelines for HT and DM diseases. Web and mobile-based application will be developed. The remote monitoring of patient data collected with mobile applications will be provided. A database containing patient data will be created. The developed CDSMS will be tested in two stages. In the first stage, the usability, understandability and adequacy of the application will be determined. Then, necessary adjustments in the application will be made in accordance with the feedback after interviews with physicians and patients. In the second phase, the system will be validated. A randomized controlled trial will be implemented. According to the results of scanning which is done using developed CDSS, DM and/or HT diagnosed patients will be participants of trial. In the intervention group, the system recommendations on diagnosis, treatment and monitoring will be carried out as the final decision given by the physician. In the control group, physicians will treat HT and DM patients as the general routine. Patients in both groups will be monitored for 6 months. Patient data on 0th and 6th month will be compared.
Results: Primary outcomes are; patients receiving continuous monitoring and effective treatment will reduce the rate of possible complications, morbidity, mortality and applications to health institutions and periodic scans will be monitored electronically. Thus, prevention of possible diseases and early diagnose will be possible. Secondary outcome is rapidly evolving e-health technology in the world will be contributed using national information and technology savings.
Conclusions: In the fields of medical expertise providing health services to HT and DM patients, the developed system using evidence-based guidelines will be the first example.