

Abstract

Telemedicine systems have the potential to enhance efficiency in compensating for metabolic disorders, yet they are not widely and durably utilized in the healthcare system. One of the defined barriers to the implementation of telemedicine systems is personalization, where offered solutions provide a uniform concept for all patients, and system configuration occurs based on patient feedback after system use. For the long-term utilization of a telemedicine system, the coordination of several factors is crucial, especially the correct selection of the type of technologies used, the positive impact on the patient's health, and the inclusion of individual patient requirements in system configuration.

The aim of the work was to propose and verify functions, evaluate the impact of the telemedicine system Diani on compensating diabetes mellitus, and, through the analysis of monitored parameters, compile a guide for optimal system configuration based on individual patient needs.

Based on literature reviews and market research, types of connectable peripherals for the telemedicine system were identified. Specific devices were then selected through a multicriteria analysis. Clinical studies were conducted to examine the functions of the telemedicine system and its impact on basic diabetes parameters.

The results of clinical studies confirmed the positive impact of the telemedicine system Diani on glycosylated hemoglobin and assessed experiences from long-term system use. They emphasized the importance of system personalization according to individual patient requirements in relation to diabetes treatment compliance and system usage adherence. Based on data analysis from a series of case studies, a guide for optimal system configuration for a specific type of patient was developed, with the basic idea being the a priori personalization of the system before its initial use.

The implementation of the telemedicine system Diani into the therapeutic spa system demonstrated its usability and benefits in real practice. A limiting factor for utilizing the broader potential of the system is the interoperability of the technologies used and indirect access to measured data.

Keywords:

diabetes mellitus; telemedicine system; clinical trial; evaluation; compliance