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EDITORIAL NOTE

# Self-Centered Intelligent Care (SCIC) in Patients with Diabetes: A Futuristic Scenario

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Diabetes is a global epidemic that accounts for about 12% of the world's health costs [1]. Diabetes is the main cause of kidney failure, lower limb disorders and blindness in adulthood and it nearly doubles the risk of heart attack and all-cause mortality, leading to hospitalizations, long-term complications, and high costs [2]. In this way, the value of self-care and especially self-centered health care at the individual, institutional, and social levels, in maintaining and improving the health of patients with diabetes becomes more visible. This article introduces the Self-centered intelligent care (SCIC) scenario, which probably patients with diabetes will benefit from in the future.

The world is changing rapidly and is increasingly driven by technological advances, demographic changes and changing social values [3]. Machine learning to develop an intuitive approach to customize interventions in medication adherence and predict disease risk including diabetes by analyzing patient lifestyle, physical health factors, and mental health factors in people with diabetes, widely used will be placed. Advanced molecular phenotyping, genomics and the development of digital biomarkers will also be used in the diagnosis and treatment of diabetes, where huge datasets are generated due to the heterogeneous nature and chronic course of the disease. For example, micro biome data can be used to create a repository of microbial marker genes to predict the likelihood of developing diabetes and guide treatment in diabetic patients [4].

As defined by the World Health Organization, self-care includes the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and cope with disease and disability with or without the support of a health care provider [1]. While self-centered care is a general term that can support people in becoming more involved in managing their own health and well-being rather than being passive recipients of health care [3]. By relying on continuous individual care and playing an active role in monitoring their health, patients with diabetes can use self-care to improve their quality of life, reduce their reliance on the health care system, and ultimately contribute to the overall health and well-being of society.

In the future, technology will play an even more important role in self-care. The future will be marked by ever-increasing innovations in health-related technology and it could lead to the emergence of SCIC that will be dominated by the pervasive use of artificial intelligence, drones, telemedicine, machine learning algorithms, and genetic engineering. Digital health technologies in SCIC, combined with the use of wearable tools, digital tools,

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and artificial intelligence (AI)-assisted clinical coaching approaches, can help diabetes patients transform the way they interact with their health and well-being, monitor their health status regularly, Identify the early warning signs of their illness, and manage their disease chronic conditions more effectively.

With the advancement of technology, the widespread use of AI will also be available in the field of self-centered care to provide personalized information for each patient. AI will allow diabetic patients to make daily decisions about their diet and activity and evaluate the quality and value of food calories; because accountability for diabetes care increases when patients have a complete picture of their food quality so they can evaluate what they are eating. Robots and virtual assistants equipped with AI can have interactive conversations with diabetes patients, analyze their conditions, answer their health questions and guide them on self-care practices.

In the not-too-distant future, a patient with diabetes will be able to live in a world with easy access to an integrated and forward-looking care delivery system called SCIC. In this regard, consider a patient with diabetes who is familiar with technological knowledge; someone who can take responsibility for their own health through various self-care methods. For regular health monitoring, a permanent chip is implanted in the patient's body, which sends blood glucose, blood pressure, heart rate, physical activity level and much more in momentarily to SCIC data center. This data center contains secure servers where demographic information, history and type of disease, genetic information, as well as vital data sent from the chips implanted in all patients with diabetes are recorded, classified and stored in momentarily and then by an intelligent robot, this data is continuously monitored.

Every morning when a diabetic patient wakes up, he/she receives a notification on his/her smart phone that shows her general health status, and it suggests a personalized daily plan for diet, health literacy education, physical activity level, medication intake and treatment process follow-up. If the patient needs to follow up on his/her health due to the progress of diabetes, side effects, or even another disease, he/she will be able to immediately open the SCIC program on his/her smart phone. The patient encounters an AI robot that monitors his/her vital signs through constant communication with a SCIC data center. The patient normally talks to the robot and describes his/her symptoms; then, with the help of AI, the robot identifies some possible conditions that the patient may experience. Then it analyzes the data according to the information recorded in the SCIC data center servers and announces whether the patient needs to visit the medical center in order to carry out the healing process. If an in-person visit is required, the patient will receive a notification on his/her smart phone that an ambulance will soon be dispatched with a medical team to transport his/her to the medical center. The patient follows their arrival time through the tracker. During this period, the patient's vital signs are monitored by the robot many times and the necessary health recommendations are provided to the patient.

If the robot determines that the patient does not need to visit for treatment, after processing the information by the SCIC data center servers, the AI will recommend the appropriate drugs to meet the specific needs of the patient. A few minutes later, the patient receives a notification that the drugs are being prepared for delivery, and through the tracker, he/she receives the exact time and place of delivery of the drugs at home. Soon, a drone, which is equipped with advanced sensors and navigation systems for safe and efficient transportation, precisely identify the patient's location through GPS coordinates and accurately land the package containing the required drugs. The patient scans the bar code of the medicines and uses them appropriately after reading the relevant instructions on digital

device. In this way, by integrating drones, AI, and advanced logistics systems, a patient with diabetes can access the required health care services in the shortest possible time.

However, in the future, SCIC through continuous monitoring and AI-based diagnoses can change the types of care needed in patients with diabetes from a reactive approach to an active and preventive approach, but it will also bring concerns and possible problems. For example, if AI algorithms do not correctly identify patient conditions and symptoms, it may lead to misdiagnosis or inappropriate recommendations. The absence of human medical professionals in part of this scenario may affect the vital aspect of personal care and human judgment that may be necessary in certain situations. Relying too much on the digital interactions may also lead to feelings of loneliness and social isolation in people with diabetes. Protecting the security of data on the servers of SCIC databases raises concerns about privacy, security, and the collection of personal data such as demographic information, GPS coordinates, and patient vital signs, which may potentially be misused and threaten people's privacy. Also, this scenario is presented on the assumption of global access to AI technology; it is possible that until then, the necessary infrastructure for its implementation in all countries of the world, especially low or middle income countries has not been provided. This will create a potential digital divide in access to health care for all patients with diabetes.

It is concluded that SCIC can be effectively used to train and develop algorithms for the prediction, diagnosis and management of diabetes, simplifying technical advances in diabetes management, and enabling patients to carry out the management strategies they need more optimally. But it should be kept in mind that the integration of technology in the provision of health services will be effective when, before its implementation, documented planning is done to ensure accuracy, privacy and fair access for all patients with diabetes.

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