



Types of health-related procrastination in patients with type-2 diabetes: a qualitative content analysis

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Abstract

Background and objectives: Health-related procrastination refers to a delay in the performance of health-related activities, which is a rather neglected subject despite being critical. Due to the adverse effects of procrastination on the care and treatment of patients with type-2 diabetes, it is necessary to explore procrastination among this group of patients through in-depth studies. The present research was conducted to explain different types of health-related procrastination in patients with type-2 diabetes.

Materials and methods This qualitative study applied content analysis with 13 patients with type-2 diabetes selected via purposive sampling. Data were collected through individual and semi-structured interviews. The data were then analyzed using Lundman and Graneheim content analysis method.

Findings: Based on the analysis of the data, instances of health-related procrastination in patients with type-2 diabetes were classified into six main categories, including minimizing self-care, poor adherence to treatment, poor nutritional habits, poor adherence to drug regimen, disregard for disease monitoring, and a sedentary lifestyle.

Conclusions The results of this study provide an in-depth understanding of the various forms of health-related procrastination in patients with type-2 diabetes. These findings can be employed in the design, implementation, and monitoring of treatment and care programs targeting these patients.

Keywords Procrastination · Type-2 diabetes · Qualitative study

Introduction

Type-2 diabetes is one of the most common non-communicable metabolic diseases with debilitating complications that has a chronic and intangible course and a growing prevalence across the world [1, 2]. The International Diabetes Federation estimated that 463 million of the world's adult population (aged 20–79 years) had diabetes (9.3% of the population) in 2019 and the figure is anticipated to reach 578 million (10.2% of the population) in 2030 and

700 million (10.9%) in 2045. This high prevalence necessitates the immediate design and implementation of strategies to reduce this growing trend of diabetes [3].

Recent studies in Iran have estimated a 4–4.5% prevalence of type-2 diabetes among the population, with the figure reported as above 14% in the over-30-year-old population. According to the International Diabetes Federation, Iran is one of the top five countries in the Middle East in terms of high diabetes-related costs [4].

In diabetes, it is mainly the patients themselves who are in charge of their own treatment, and self-care activities are necessary for reducing diabetes-related problems. Many factors, such as psychosocial support, health beliefs and attitudes, self-efficacy, socioeconomic status, physical activity, and lifestyle, are effective in controlling diabetes. Due to the generally low level of adherence to treatment in chronic diseases, the effective implementation of self-control strategies and ensuring adherence to treatment recommendations are important challenges, especially in type-2 diabetes [5]. Diagnosis with chronic diseases such

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as diabetes is associated with high levels of burnout and fatigue [6], and evidence suggests that burnout can predispose the individual to health-related procrastination [7].

Health-related procrastination is an unnecessary delay in performing health tasks despite an initial intention to start or complete these tasks, and is often accompanied by negative emotions and personal dissatisfaction with the procrastination. Compared to general procrastination, health-related procrastination has a stronger association with health outcomes such as health status. Also, health-related procrastination as a concept is an abstract and complex structure that can have different interpretations based on one's experiences, understanding, and perceptions in different situations and cultural contexts [8].

Some researchers argue that there is a moderate to strong association between exercise, nutrition, and procrastination [8]. Research has shown that people who have more chronic stress and health problems are more likely to procrastinate [9]. Studies have identified procrastination as an important factor in the poor management of chronic diseases such as hypertension and cardiovascular diseases [10].

The ups and downs associated with health-related procrastination in diabetes can make some patients not strictly monitor some of the serious complications of their disease, such as ocular and cardiovascular complications that require rapid and accurate follow-up, and they can end up suffering irreparable damage [11, 12].

Despite the growing body of research on procrastination, we still have little understanding of the nature of procrastination and its causes [13, 14]. Procrastination is a behavioral style of delaying the performance of tasks, and patients themselves play an important role in its formation; therefore, understanding the experiences of patients with diabetes about procrastination requires qualitative studies to discover the depth and complexity of their attitudes, values, and feelings in life in relation to this issue. Procrastination as a personality variable may impact health-related behaviors, ranging from delays in examination and evaluation to delays in treatment and care [15]. Health-related procrastination is a complex and multidimensional concept and requires a precise and comprehensive examination through qualitative studies.

By fully understanding the subject of procrastination, health professionals can ensure that their patients are adhering to the care measures in a proper and timely manner and can assist them in continuing accurate and timely follow-ups.

There are very few qualitative studies on health-related procrastination, and most of the studies on this subject are focused on academic procrastination among students [13, 14], while less attention has been paid to health-related procrastination, which is of great importance. Due to the risks

of procrastination for the care and treatment of patients with diabetes, an in-depth study of the various types of health-related procrastination in these patients is necessary in order to make better clinical decisions for them. Therefore, this study aimed to explain different types of health-related procrastination in patients with type-2 diabetes.

Materials and methods

Participants

This qualitative research was conducted from Dec. 2020 to Oct. 2021 in Tehran, Iran. After obtaining a code of ethics from Tehran University of Medical Sciences (IR.TUMS.FNM.REC.1398.207), the researcher visited the endocrinology, internal medicine, and diabetes clinics affiliated to Tehran University of Medical Sciences and used purposive sampling to find people with information about the study phenomenon. The inclusion criteria consisted of ability to communicate well, willingness to participate in the research and conduct interviews, fluency in Persian, no acute mental illness (self-reported), and poor control of diabetes, such as having HbA1C > 8.5. Written consent was obtained from all the participants and they were assured that they could withdraw from the study whenever they wished. Data were collected using in-depth semi-structured individual interviews. Professors working at the surveyed diabetes clinics or endocrine and internal wards and the nurses working in these wards helped the researcher purposively select patients with type-2 diabetes from the study population based on the inclusion criteria. After presenting to the clinics or wards, the patients' records and history were reviewed and the candidates were then assessed based on the eligibility criteria by conducting an initial interview.

After visiting the relevant clinic/wards, the medical records and history of the patients were examined. During the initial brief conversation with the patients, the researcher checked the inclusion criteria, the patients' willingness to participate, and their ability to describe their experience. The first interview was conducted with a patient who had diabetes for 25 years and had visited the diabetes clinic for years. Due to a high HbA1c level over a long time (based on the medical records), this patient could have rich experiences with health-related procrastination.

Materials and procedure

The interviews were conducted once or twice with each candidate, depending on their time and preferences and also willingness and degree of information conveyed. The time and place of the interviews were set with the participants.

The interviews were held individually in a quiet environment at a proper time and place where the participants felt comfortable. All the health protocols related to COVID-19 were observed during the interviews. The participants were reassured they could stop the interviews if they were tired or had any problems. Each interview lasted 20 to 55 minutes depending on the circumstances and preferences of the participants. The interviews started with questions about personal characteristics and some general open-ended questions, such as “What did you do when you were diagnosed with the disease?”, “What decision did you make?”, and “Please fully describe a day in your life”, and continued using a semi-structured interview with questions such as “What do you do when you have a health problem?”, “How do you manage your diabetes-related issues?”, and “Do you postpone following up on your diabetes treatment and care measures?”. The participants were asked to continue the discussions by telling of their experiences and memories. In addition, other questions, such as, “What do you mean?”, “Please elaborate, if possible”, and “Can you give an example to clarify this for me?” were asked to guide the interviews in accordance with participants’ statements. With the permission of the participants, the researcher audio recorded the interviews and took notes during the sessions, if necessary. Three patients were interviewed twice to clarify the data. Concurrently with the data collection, the recorded interviews were carefully listened to and transcribed verbatim in Microsoft Word 2013. MAXQDA 2010 software was used for the data management. The content analysis method proposed by Lundman and Graneheim was used to analyze the data with the following steps: (1) Transcription of the entire interview immediately after each session was held, (2) Reading the whole text for a general understanding of its content, (3) Determining the meaning units and primary codes, (4) Classification of the similar primary codes into more comprehensive categories, and (5) Determining the main categories [15].

The Guba and Lincoln’s four criteria were used to ensure the trustworthiness of the qualitative data and the results [16]. The researcher sought to increase the credibility of the findings through reflection and prolonged engagement with the research topic and having constant presence in the research environments and continual observations to get immersed in the data. To increase the trustworthiness of the study, the results of all the research steps were reviewed by experts in qualitative research methodologies. To ensure the study’s rigor, supervising professors’ comments were applied as an external check. The following steps were taken to ensure the confirmability of the study: researcher’s assumptions were specified at the beginning of the research and recorded so that they could be distributed among the observers, a guideline was developed for decision-making in the analysis and

Table 1 Demographic information of the participants

Code	Gender	Age	Education	Duration of Diabetes (years)	HbA1c
1	Male	67	Master’s degree	25	9.9
2	Male	68	Third grade of elementary school	3	8.9
3	Female	45	High school diploma	5	8.9
4	Male	62	Bachelor’s degree	15	9
5	Male	63	Fifth grade of elementary school	15	13
6	Female	43	First grade of secondary school	2	9
7	Male	40	High school diploma	2	9.5
8	Female	62	First grade of secondary school	19	9.3
9	Male	64	Sixth grade of elementary school	4	12.6
10	Female	58	Fourth grade of elementary school	9	8.8
11	Male	54	First grade of secondary school	20	8.8
12	Male	48	Third grade of elementary school	17	13.2
13	Female	41	Second grade of secondary school	12	10.8

collection of the data, and key points were taken during the research steps and reviewed constantly among the research team. A summary of some of the codes and themes extracted from the data analysis was given to some of the participants and they approved the extracted themes. To ensure the transferability of the results, participants’ demographic information was described such that individuals with different demographic backgrounds still remained unrecognizable, and the readers were thus given a rich description of the research background and conditions.

Results

Thirteen patients (eight males and five females) participated in this study. The duration of their diagnosis with type-2 diabetes varied from two to 25 years. Content analysis of the experiences of patients with type-2 diabetes regarding health-related procrastination was classified into six main categories: minimizing self-care, poor adherence to treatment, poor nutritional habits, poor adherence to the drug regimen, disregard for disease monitoring, and a sedentary lifestyle. Table 1 presents the patients’ demographic information, and Table 2 lists the themes and subthemes extracted from their experiences.

Table 2 The themes and subthemes of health-related procrastination in patients with type-2 diabetes

Theme	Subthemes
Minimizing self-care	Abandoning self-care Insisting on refraining from self-care Forgetting disease-related considerations Disregarding the illness for others' comfort Health losing its importance in solitude and loneliness Ignoring the disease because it is incurable
Poor adherence to treatment	Not seeking treatment Procrastinating the onset of insulin therapy
Poor nutritional habits	Medium dietary adherence Dietary non-adherence Overeating
Poor adherence to the drug regimen	Not taking the medications Not caring about taking the medications regularly
Disregard for disease monitoring	Postponing follow-up visits Refraining from follow-ups until complications emerge Giving up follow-up due to repeated failure in attaining the desired results
A sedentary lifestyle	Laziness in exercising Lack of physical activity due to physical problems

Minimizing self-care

One of the important elements of proper diabetes control is adopting self-care behaviors. Patients' active participation in the self-care process improves their condition and reduces complications. Procrastination in self-care can disrupt the patients' contribution to their own health, which plays a major part in this disease.

1. Abandoning self-care

The participants acknowledged that when they are tired, angry, have family or physical problems, or when they are not at home, such as when attending gatherings and ceremonies or traveling, they ignore all disease-related considerations and self-care.

A male patient with a history of 15 years of diabetes said: "For example, I am told to eat rice three times a week and not to consume more than eight spoons each time. They say 'do this' and 'don't do that'. Well, I followed the doctor's instructions for a while and it was good, but then I got tired and ignored most of them ... When I am at a gathering, I tell myself that one meal is OK. I eat all kinds of food. During the new year celebrations, I say it's the new year and a few sweets won't matter –they won't increase my blood sugar" (Participant 4).

A patient with poor diabetes control said about his occasional self-care activities: "But sometimes I accepted what the family and doctors said about what to do, what not to do, what is good for my diabetes, what is bad, what to eat, what not to eat. Or sometimes I wouldn't accept; for example, I would eat a plateful of rice and say I'll inject insulin afterwards" (Participant 9).

2. Insisting on refraining from self-care

Participants' statements showed that some patients insist on not caring for themselves and do not care about the advice of the health staff and family about performing self-care activities and do not even bother starting the self-care process.

A patient with long-term uncontrolled diabetes said: "For example, they told me to follow a diet or exercise, but I did not care at all and paid no attention to what others said. I would tell myself, 'Come on! What the hell are they saying?' I didn't care about what they said at all" (Participant 13).

3. Forgetting disease-related considerations

Diabetic patients get distracted and forgetful about taking their medications and performing self-care. This forgetfulness sometimes occurs when they are busy with other work or when they are upset or tired.

An older male patient explained about forgetting to take his medications: "When I get tired, I forget things and also become lazy ... When I get angry and upset about small things, I completely forget to take my medications" (Participant 9).

4. Disregarding the illness for others' comfort

Some diabetic patients, especially those with more physical disabilities who need the help of family and relatives in their daily activities, procrastinate doing things such as visiting the doctor and following their diabetic diet so as not to bother their loved ones or disturb their comfort.

A 63-year-old patient with glycosylated hemoglobin 13 who was hospitalized in the endocrine ward for uncontrolled diabetes said: "For example, my children should be free and have no other duties at that moment to take me to the hospital ... I need their help in some things, so I say, 'forget about it', and I ignore it, saying to myself, 'how much longer should they be looking after me?' I get upset over these things and say to myself to let go, and so I neglect it because of this" (Participant 5).

5. Health losing its importance in solitude and loneliness

According to the participants, adherence to medication regimen and diet was taken less seriously by the patients living alone. A 43-year-old divorced woman said of her worries about being alone: “I don’t have a good life partner. If I had a good life partner who was concerned about me and loved me, I would try to continue my treatment more carefully because of him. I would try to heal these diabetic wounds and take my medicines on time because of him” (Participant 6).

Ignoring the disease because it is incurable

It was implied by the words of some participants that the incurability of diabetes and its lack of a definitive treatment had caused their neglecting of proper sustained care.

A male participant with fifth-grade elementary school education said in this regard: “I feel I’ll recover today or in a month or in a year, then after a month or a year, I see that I have not recovered. Then I tell myself that this is false hope, diabetes doesn’t have a cure, so let it go” (Participant 5).

Poor adherence to treatment.

1. Not seeking treatment

Postponing visits to the doctor and treatment-seeking lead to greater complications and a subsequent exacerbation of the treatment procedure.

A 48-year-old male participant said: “Whenever I set out to go to the doctor, I would fear getting hospitalized. I was scared the whole time and was filled with fear. I feared going to the doctor. I postponed visiting the doctor because of this stress I had ... How to say it, I was being lazy all the time and didn’t want to visit the doctor” (Participant 12).

2. Procrastinating the onset of insulin therapy

Several diabetic patients avoid or even resist starting insulin therapy; in other words, they are afraid of taking insulin. For example, one patient who had delayed the start of insulin treatment for a long time stated: “Four years ago, a nephrologist told me I’d better start taking insulin. I hesitated for a while, couldn’t say yes in my heart to starting insulin. I was scared of injecting myself several times a day” (Participant 4).

Poor nutritional habits.

1. Medium dietary adherence

The findings of this study showed that diabetic patients sometimes follow the diabetic diet based on their circumstances. A patient with a long history of diabetes said: “I follow my diet to some extent. I try to follow my diet as best as I can, but I do not comply with all the things that the doctors say” (Participant 11).

2. Dietary non-adherence

The analysis of the data obtained from the interviews showed that some patients do not follow any diet or principles of nutrition as taught to them and some abandon their diet after starting to take insulin.

A patient with a 5-year history of diabetes said about not following a long-term diet: “I never followed a strict diet at all. After getting diabetes, I still don’t follow the diabetic diet either. I eat what I should not eat. I don’t care about any diets” (Participant 3).

3. Overeating

The analysis of the data showed that some patients are accustomed to eating large amounts of food while some have a strong desire to eat sweets and some have a strong craving to eat food.

Participant 7, who was an overweight male patient, described his eating habits as follows: “I’m always craving eating. Sometimes I’m not even hungry but find myself eating food unconsciously ... I eat a lot of snacks, and my snack portion is larger than my food portion. For example, I eat some ice cream, eat some sweets. For example, if I crave grilled chicken when I get up in the morning, I have to go out and buy some”.

Poor adherence to the drug regimen.

1. Not taking the medications

The voluntary cessation of the medications, not taking the medications when bored of them, not taking the medications when angry, stopping taking medications due to their ineffectiveness, and admitting to not injecting insulin were the initial codes obtained from the analysis of the interviews.

A male patient with a very high HbA1c said: “I’m more likely to neglect taking my medicines when I’m tired. For example, when I get home tired from work and I’m not in the mood, if my wife asks me, ‘have you taken your medicines? Have you gotten your insulin?’, and I’m tired and not

in the mood, then I lie and say ‘yes’ and don’t bother taking them” (Participant 12).

2. Not caring about taking the medications regularly

A participant with a 2-year history of diabetes discussed not caring about taking the medications regularly and said: “For example, now that I’m in the hospital, they ought to come and give me my medicines on time, but when I am in charge of taking my own medications, I become negligent, I ignore it, don’t take them on time” (Participant 7).

Disregard for disease monitoring.

1. Postponing follow-up visits

Constantly postponing routine follow-up visits, postponing the laboratory tests, non-regular blood sugar monitoring, and not paying attention to follow-up visits for the disease were among the instances of postponing follow-up visits.

A patient with a 9-year history of diabetes said about postponing these care measures: “A few days ago, I told myself that I should go to the doctor on Sunday, then I said ‘forget about it, I’ll go on Wednesday’. Two weeks ago, I should have taken a blood test, but I didn’t go for it. I said to myself, ‘take it easy, I’ll go later’ ... I postpone things more when I’m upset” (Participant 10).

2. Refraining from follow-ups until complications emerge

The analysis of the interviews showed that patients usually delay their treatment follow-up sessions because they do not have any symptoms of illness and so do not take the follow-ups seriously or delay them until they experience an actual health problem.

A 54-year-old patient said, “You know, let me tell you something. If I’m fine, I won’t do anything for my blood sugar. That’s it. When I get up and feel good, then I don’t think about treatment anymore. I won’t get to thinking about medicines in that instant” (Participant 11).

4. Giving up follow-ups due to repeated failure in attaining the desired results

Diabetes is a chronic condition that requires time to be controlled. On their path to diabetes control, patients who do not get any results from their treatment and self-care several times gradually give up their follow-ups.

An older patient with a 3-year history of diabetes said: “When I follow up too much on my diabetes-related issues but get little or no results, then I feel tired and say to myself, ‘forget about it, it doesn’t matter anymore” (Participant 2).

A sedentary lifestyle.

1. Laziness in exercising

The findings showed that some patients partially comply with the physical activity recommendations to control blood sugar and are reluctant to exercise and some abandon exercising altogether.

A patient with a high average blood sugar over the last three months said: “I told myself I’ll exercise and then my diabetes will get better. I would go and start exercising in the mornings, but after two days, I would see that I have no interest in exercising” (Participant 12).

2. Lack of physical activity due to physical problems

One of the patients who was an older housewife said: “I do not have the patience to go down all the stairs with this pain in my legs and go for a walk or something and then mount the stairs back up again. I have given up exercise altogether. My physical activity has decreased a lot since I got these knee pains” (Participant 10).

Discussion

The findings of this study showed that patients with type-2 diabetes are constantly procrastinating their treatment and care. The study participants often thought about their health responsibilities but postponed acting on decisions such as following up on treatment and care, taking medications on time, and exercising. Research suggests that people who procrastinate performing duties related to their illness and health oftentimes do have an intention to perform them but postpone their decisions and there is a gap between their decision to perform a task and doing it, and occasionally, they give up the decisions they have made [17, 18].

Health-promoting behaviors are any action taken to increase or maintain a level of health, such as proper diet and adequate physical activity [19]. The participants acknowledged that they abandoned self-care, refrained from its performance, or made excuses to not perform self-care. Studies show that failure to perform proper self-care is an important factor contributing to diabetes complications and mortality. Successful diabetes control depends on the patients' self-care, as more than 95% of diabetes care is performed by the patients themselves [20, 21].

Sirois [10] examined the association of procrastination with hypertension and cardiovascular diseases, and showed the relationship of procrastination with hypertension and cardiovascular diseases and found that people with hypertension and cardiovascular diseases had more maladaptive behaviors than healthy individuals.

Sirois [22] also conducted an online survey of a health-procrastination model in adults in Canada, the US, Europe, and Australia and showed that procrastination was associated with poor health in adults and the indirect effects of procrastinators' health behaviors had a major impact on their health.

A qualitative study by Basirimoghadam et al. [23] on health-related procrastination in nurses showed that prioritizing the present over the future, preferring ease over difficulty, projecting avoidance behaviors, having wrong priorities, some inherent tendencies, the nursing occupation, and the nature of the problem are important factors influencing procrastination. A review study of qualitative studies by Azami-Aghdash et al. [24] showed that procrastination due to being busy with activities of daily living, having no fear, and a poor screening culture is one of the barriers to breast cancer screening from women's perspective. In the present study, the fact that diabetes has mostly silent symptoms and consequently the negligible amount of fear experienced by patients about developing complications and also the chronic nature of the disease were the causes of procrastination. The disparity observed in the other causes of procrastination can be due to the differences among the samples.

Sirois [25] stated that procrastination is associated with stress, reduced health-promoting behaviors, and reduced routine medical and dental examinations. Rafii et al. examined procrastination in postpartum screening for diabetes and showed that women have a different range of procrastination in diabetes screening, from no procrastination in selective screening to long procrastination in secondary screening. The participants in their study had the intention to undergo screening but took no action, or did not undergo screening with self-deception, or considered screening to have no immediate benefits. According to that study's findings, the most frequent reason to avoid screening for diabetes is procrastination. In the present study, too, the patients

postponed routine follow-ups, such as laboratory testing and blood sugar monitoring.

Poor adherence to treatment was one of the subthemes that emerged from the analysis of the data and refers to patients postponing doctor's visits, seeking treatment, and starting insulin therapy. The failure to follow a treatment regimen is associated with frequent hospitalizations, not attaining any benefits from the treatments, frequent visits to doctors, and high treatment costs in diabetic patients. Due to the low level of treatment adherence in chronic diseases, ensuring adherence to treatment recommendations is a major challenge in chronic diseases, especially in type-2 diabetes [26, 27]. Studies show that since insulin therapy is an invasive procedure that requires daily repetition, patients are reluctant to start it due to fear of injections, negative beliefs, and the limitations imposed by it [28].

Poor nutritional habits was another procrastination sub-theme identified in these patients. The patients either partially followed the diet that had been taught to them or completely disregarded the dietary recommendations, and some lacked the ability to control their cravings for food and sweets. Studies show that focusing on the current attachments and prioritizing what is being done in the present make people give up their efforts to accomplish more far-fetched and logical goals, and people who cannot resist their inner temptations are more likely to procrastinate [29]. Following a proper diet, eating the right amount, and quitting bad eating habits are the principles of controlling blood sugar and studies show that dietary non-adherence or poor adherence are common in diabetic patients [30, 31].

The findings of this study also showed that avoidance behaviors, such as not presenting for follow-ups and treatment, dietary non-adherence, not using the prescribed medications, and the lack of exercise and physical activity, are among the behaviors associated with health procrastination. Similarly, another study reported avoidance behaviors and fear of failure as factors affecting procrastination [17].

Studies have shown that stressful [32], difficult and tedious tasks [33] cause people to postpone them. The chronic nature of diabetes and the many limitations associated with it can lead to constant anxiety in the individual and make them bored with self-care and eventually make them delay adopting health-promoting behaviors. One of the limitations of this study was the subjective nature of qualitative research, which means that the study can be influenced by the researcher's mentality. In the present study, the researcher tried to identify his mental presuppositions and write them down separately. Due to the prevalence of COVID-19 during the research, the researcher faced limitations when conducting the interviews, such as mandatory social distancing and the use of personal protective equipment and covers, which might have concealed

any non-verbal feedback given to participants' statements; however, efforts were made to overcome this limitation by giving appropriate verbal feedback.

Conclusions

Since type-2 diabetes is a chronic disease that requires constant care and follow-up, diabetic patients postpone various aspects of their care and treatment, which can affect their treatment process and early development of the long-term complications of the disease. Understanding the types of health-related procrastination in patients with type 2 diabetes helps pay attention to health-related procrastination in these patients when designing, implementing, and monitoring treatment and care programs that are also client- and family-oriented. Promoting the existing knowledge in this field helps provide solutions to prevent procrastination and design better intervention strategies to reduce this tendency by encouraging the patients to perform self-care activities. Consequently, treatment and care will become more efficient and in tune with the patients' needs, and the rate of developing diabetes complications will then decrease. The result will then be an improved health and quality of life for patients with type-2 diabetes.

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Data Availability The datasets used and/or analyzed during the current study available from the corresponding author on.

reasonable request.

Declarations

Ethics approval and consent to participate This research was approved by the Ethics Committee of Tehran University of Medical Sciences (IR.TUMS.FNM.REC.1398.207) and participants signed a research consent form.

Consent for publication Not applicable.

Conflict of interest The authors declare no conflict of interest.

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