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Determination of the factors affecting the health and social lives of individuals with Type I diabetes during the COVID-19 pandemic process: A qualitative study

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Abstract

Aim: This study was carried out to determine the factors affecting the health and social lives of individuals with Type I diabetes.

Materials and Methods: The sample of the study consisted of 14 individuals with Type I diabetes living in Istanbul province. The quantitative data of the study were collected using a personal information form, and the qualitative data were collected through two open-ended questions.

Results: Content analysis was used to evaluate qualitative data. The mean age of the individuals with Type I diabetes was 36.1% (n=14) years. As a result of the content analysis, two main themes and eight sub-themes were determined. Accordingly, the themes were negative emotions towards the illness and fear of being unable to maintain health during the pandemic process.

Conclusion: In this study, individuals with Type I diabetes were found to have negative thoughts and to experience anxiety and fear about their health due to the COVID-19 pandemic. During the pandemic process, they were particularly affected by the inability to exercise enough and the deprivation of social life. In line with these results, the study revealed that the mental and physical needs of individuals with Type I diabetes, which is a disadvantaged group during the pandemic process. In these cases, it is recommended to develop teams that will provide support for remote chronic disease monitoring of individuals with type 1 diabetes, to train health professionals, to provide multidisciplinary support to individuals by investing in these issues, and to create emergency action plans that include all elements.

Introduction

COVID-19 has affected the whole world and has been declared a pandemic by the World Health Organization [1]. Diabetes is not a contagious disease. You can use expressions like tip 1 diabetes has a wide impact on the world, just like COVID 19.Because, according to 2019 data, it is a chronic disease affecting approximately 9.3% of the world population in the 20-79 age group [2,3].

Diabetes is a common public health problem in Turkey as well as in the world. It is known that there were many problems in the follow-up and treatment processes of type 1 diabetes cases during the COVID-19 pandemic in Turkey [4,5]. Diabetes is a chronic disease that requires ongoing medical care beyond glycemic control. "Standards of Medical Care in Diabetes", called the American Diabetes Association (ADA) Standards of Care, aims to provide diabetes care and general treatment components to clinicians, patients, researchers, policy makers and other relevant persons [6]. It is thought that individuals with diabetes are at higher risk of contracting COVID-19 infection [7].

It has been determined in the literature that drugs used for the treatment of pancreatic beta-cell damage, cytokine-induced insulin resistance, hypokalemia, and COVID-19 may cause the deterioration of glucose control in individuals with diabetes. Therefore, it is predicted that glucose control in individuals with diabetes will be difficult during the COVID-19 pandemic [8], and it has been observed that the mortality rate in these patients has increased [9]. At the same time, the presence of diabetes has been associated with a poor prognosis for individuals during the COVID-19 pandemic. Twenty to fifty percent of individuals catching coronavirus have diabetes. In a report published in the UK, it was stated that the mortality rate from COVID-19

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was significantly higher in elderly patients with Type I diabetes compared to those with Type 2 diabetes [10]. Given the significance of the link between COVID-19 and diabetes, some guidance and practical advice are needed for the management of diabetes during the pandemic process. The association of patients with diabetes who have to stay home during the pandemic process with higher mortality has created fear and anxiety in patients [11,12]. During the pandemic, complications due to increased mental problems due to diabetes and irregular glycemic index may occur. During this period, all individuals with diabetes experienced difficulties in receiving services due to quarantine conditions. Before the pandemic, people in low-income countries experienced difficulties such as access to insulin, blood sugar monitoring, consulting a specialist physician, economic conditions, and lack of services [13]. The lockdowns after the outbreak of the coronavirus has restricted the access of individuals with diabetes to health services. Indeed, in the COVID-19 process, preventing acute complications and achieving continuous access to healthcare services are very important for individuals with diabetes [14]. To prevent the spread of COVID-19, strict restrictions have been imposed on all outdoor activities in many countries, and admission to diabetes clinics has also been limited. Having to stay home all the time causes people with diabetes to have lifestyle changes related to physical activity, stress, fear, and nutrition, which are likely to negatively affect glycemic control [15].

As stated in the literature, patients with diabetes have been negatively affected during this pandemic process. The most significant original value of this research is that it reveals how some of these patients, who live in a metropolis in Turkey, go through this process and how they cope with. For this reason, this study was carried out to determine the factors affecting the health and social lives of individuals with Type I diabetes during the COVID-19 pandemic process.

Materials and Methods

Research question

This study was approved by the Fenerbahce University Academic Research and Publication Ethics Committee (FBU/2020-23). The study data were collected between September and October 2020. Qualitative designs can be defined as research in which qualitative data collection methods, such as observation and document analysis, are employed and a qualitative process is followed to reveal perceptions and phenomena realistically and holistically in their natural environment [16]. Due to the lack of qualitative studies on this topic conducted with individuals with Type I diabetes in Turkey, how they feel and what they go through during this process is not known. In qualitative research, research questions, sample selection, and data collection and analysis are different from quantitative research. Data collected in a qualitative study is not reduced to numbers or figures as in quantitative studies. Instead, the main goal is to provide the reader with an explanatory and realistic situation on the subject. With this technique, the views and experiences of the people involved in the study are presented as directly as possible [17].

Participants and setting

The study sample consisted of individuals who were diagnosed with Type I diabetes, were living in Istanbul, and presented to a private clinic. Fourteen individuals with Type I diabetes who were selected with the purposive sampling method and volunteered to participate in the study were invited to the study. The homogeneity of the subject of the study and the individuals included in the study was achieved in the selection of the sample.

Inclusion criteria in the study

- Individuals diagnosed with Type I
- Being literate
- They do not have any other chronic diseases
- Volunteering to participate in the study
- Being adult individuals
- Absence of hearing, writing, and mental problems.

The following questions were asked of the participants

1. How do you evaluate your physical, mental, and social experiences during the pandemic process? Can you write down your thoughts on this topic in detail?
2. What do you think are the difficulties or the situations that affected you most during the pandemic process? Can you evaluate the difficulties you have gone through and your health in this regard?

Content analysis

In the content analysis, the raw data written by individuals with Type I diabetes were read and grouped, and the answers to each question were evaluated separately. The raw data were classified after they were read a few times by the researchers. A content analysis was conducted based on the responses of the participants, the comments made in the analysis of the texts, the number of participants, the meanings attributed to those making the same comments and using the same words, and the originality of the answers. The responses of participants to each question were evaluated one by one and grouped according to the differences and similarities of the answers. Raw data were carefully read and coded by each researcher, and then they were grouped to form a theme. Expert opinion was utilized in the process of classifying, organizing, and finalizing the data [17,18]. Opinions were received from three experts in the field, one of whom is a Professor and two of whom are Doctors. Two main themes and eight subthemes were created in line with the data obtained from the study (Table 1).

Results

This study was carried out with 14 individuals with Type I diabetes, and the descriptive characteristics of the individuals were evaluated. The mean age of the individuals with type I diabetes was 36.1 (n=14), the mean diagnosis age was 11.7 (n=14), the duration of the diagnosis was 25.6 years, 57.1% (n=9) were female, 42.8% (n=4) had a graduate degree, % 54.2 (n=9) were married, and 71.4% (n=10)

Table 1. Main and Sub-themes.

Main themes	Sub-themes
Fears Related to the Pandemic	• Fear of getting infected with the virus • Fear of losing family members • Fear of not being able to recover if infected with coronavirus
Fear of Failure to Protect the Health	• Fear of not being able to access treatment • Fear of not being able to achieve weight control • Inability to exercise due to the pandemic conditions • Social Isolation • Uncertainty regarding the pandemic

were living with their family. Of the participants, 42.8% had one or two children. It was determined that 54.2% (n=9) of the participants had a chronic disease apart from diabetes. Also, it was found that 85.7% of the participants (n=12) did not need support from others, 54.2% (n=9) used an insulin pen for insulin treatment as recommended by their doctor, 78.58% (n=11) went to the doctor for their controls regularly, 54.2 (n=9) paid attention to their nutrition, and 50% (n=7) exercised occasionally. According to the results of the content analysis, the factors affecting the health and social lives of individuals with Type I diabetes during the pandemic process were grouped under two main themes.

Theme 1: Fears related to the pandemic

More than half of the participants stated that they experienced fear and anxiety due to the pandemic, such as fear of getting sick, losing a family member and being unable to be near them, and individual protection and being part of a risk group.

Sub-theme 1. Fear of getting infected with the virus

Almost all of the participants stated that they experienced a fear of getting the virus.

The statement of a participant on this subject is as follows:

"I was worried about my health and the health of my family. I took some precautions, such as frequently washing hands and using cologne, wearing a mask when I cannot maintain distance with people, taking a shower each time I go out and return home, reducing contact with people, avoiding going out unless necessary, using my private car instead of public transportation, using online banking, doing 95% of shopping online, making payments with a contactless credit card, disinfecting my desk and chair in my office every day, and taking homemade food to the office." (38, male, finance expert).

Sub-theme 2. Fear of losing family members

Almost half of the participants stated that they experienced a fear of losing their family members during the pandemic process.

The statement of a participant on this subject is as follows:

"When will it end? I have had the feeling and fear that one of my loved ones can catch the disease, and I cannot be near him or her in this process. I have had the fear of losing my loved ones." (35, male, manager).

Sub-theme 3. Fear of not being able to recover if infected with the coronavirus

Almost half of the participants stated that they were worried about contamination, getting sick, overcoming the disease, and infecting their family despite the strict protection measures they have taken.

The statement of one of the participants is as follows:

"Can I get over it if I catch the virus, or how do I get over it? Do I infect my family? I have had such worries." (40, female, housewife).

Theme 2: Fear of failure to protect the health

Nearly half of the participants stated that they gained weight during this period, were unable to exercise at home, and had to live far from their social environment.

Sub-theme 4. Fear of not being able to access treatment

Half of the participants stated that they were most affected by the fear of not being able to access treatment because they were in the risk group.

The statement of one of the participants is as follows:

"As a person with diabetes, my worries and fears have been at a higher level than healthy individuals. My first fear has been about what I would do if I couldn't get my medication. Apart from that, not recognizing the disease and the lack of treatment for the disease have frightened me." (36, female, manager).

Sub-theme 5. Fear of not being able to achieve weight control

Participants stated that they were psychologically affected and gained weight due to inactivity.

The statement of a participant on this subject is as follows:

"I have gained weight and have been negatively affected psychologically. I have minimized my social life. I have been quite impacted by this situation. I still live under these conditions." (34, male, civil servant).

Sub-theme 6. Inability to exercise due to the pandemic conditions

Nearly half of the participants stated that they could not do physical exercise and that they could not exercise effectively at home and produce satisfactory solutions in this regard. They stated that they could neither find a place

nor time for exercise at home due to the addition of childcare and housework to their daily routine.

The statement of one of the participants on this subject is as follows:

"I haven't been able to do physical exercise. Therefore, I have gained weight. I still haven't found a solution to this problem." (32, male, teacher).

Sub-theme 7. Social isolation

More than half of the participants stated that they cut contact with their social circles.

The statement of one of the participants is as follows:

"I have cut all my contact with my environment. I'm washing all the materials coming from outside with bleach." (34, male, civil servant).

Sub-theme 8. Uncertainty regarding the pandemic

Participants stated that the lack of treatment for COVID-19 worried and frightened them.

The statement of one of the participants is as follows:

"The uncertainty has caused me to have anxieties. The uncertainties about the process and the lack of treatment have frightened me. I had more fears at the beginning of the process. I have managed to take it under control over time. I did not go out for seventy-five days. My diabetes has sometimes gone up." (38, female, administrative assistant).

Discussion

The association of individuals with diabetes, who have to stay home during the pandemic process, with higher mortality has created fear and anxiety in individuals [11,12]. There is only one study in Turkey showing that the blood sugar regulation has deteriorated and triglyceride levels have increased regardless of weight gain in individuals with diabetes due to the long-term home stay [19]. In Turkey, people still know very little about the effects of Type I diabetes during the COVID-19 pandemic [10]. This research is the first to determine the difficulties experienced by people with Type I diabetes in their health and social lives due to having to stay at home during the COVID-19 period.

In our study, more than half of the participants stated that they experienced negative emotions related to the pandemic. They experienced anxiety primarily due to the fear of getting sick, losing a family member, not being able to be near them, individual protection, and being part of a risk group. Individuals with diabetes experience depression and anxiety during the ongoing pandemic process, and state that they tend to have negative emotions more with the increase in stress levels [20,21], which, in turn, can worsen glycemic control [22]. The uncertainty that has developed during the pandemic period also causes changes in lifestyles. Lack of entertainment, sports, and cultural activities due to social restrictions causes individuals to experience anger, loneliness, and anxiety [23]. Primary healthcare providers can provide the participants with tele-psychological counseling and support them mentally.

Almost all of the participants in our study stated that they feared getting the virus. Participants who saw that they needed to completely change their lifestyle might have experienced fear. Fear of getting sick, not being able to go out too much, or restriction of social life is a difficult situation. Individuals with diabetes have been adversely affected by the COVID-19 pandemic, and the evidence of higher mortality and morbidity has increased. For this reason, it will be useful to ensure that individuals reach accurate information, they avoid worrying news, and that they are provided with educational programs, which are descriptive enough and consistent with the literature, through virtual environment. Additional psychological help and support during the pandemic are also very important for these individuals. Guidelines providing accurate information are needed to reduce possible complications related to diabetes during and after the pandemic. Staying home can increase stress, physical inactivity, obesity, and HbA1c levels. Individuals with diabetes can be assured that they are safe, and their questions can be answered through phone calls, which can positively affect this process [24].

In our study, nearly half of the participants stated that they feared losing their family members during the pandemic process. The United Nations reports that COVID-19 can be seen as a physical health crisis in the first place, but if measures are not taken, it will create the beginning of a major mental crisis [25].

Almost half of the participants in our study stated that they feared that they might lose their family members during the pandemic process. The United Nations has reported that COVID-19 can be seen as a physical health crisis in the first place, but if necessary measures are not taken, it will create the beginning of a major mental crisis. At this point, it is very important to give accurate information to the public. In a study in which 69 YouTube videos were analyzed in the UK, 257.804 people expressed their opinions. Only 27.5% of the participants in the study mentioned the accuracy of the information in the videos. Governments need to include quality and understandable videos on this subject. Based on what they saw on social media, participants were concerned about losing one of their family members due to the possibility of infection by the general public. During the MERS epidemic in Korea, 80% of the general population experienced a fear of being infected [26]. It is thought that this fear may be associated with the use of public transportation, having to go out, and the perception that the state cannot protect people. In our study, nearly half of the participants stated that they gained weight during this period, were unable to exercise at home, and had to live far from their social environment. Lockdowns, which have become almost universal, could potentially lead to decreased physical activity, changes in eating habits, and increased stress levels. In addition to all these factors, decreased vitamin D intake and an anti-inflammatory effect due to decreased exposure to sunlight result in increased insulin resistance. In a simulation model created using the measured glycemic data of individuals under a 45-day-long lockdown in India, it was estimated that glycemic control would deteriorate with a 3.68% increase. It is thought that this situation

may pave the way for a deeper and more persistent viral infection. It is stated that the prolongation of lockdowns is directly proportional to the worsening of glycemic control and complications related to diabetes [27].

In our study, half of the participants stated that what they were most affected psychologically was the fear of not being able to access treatment because they were in the risk group. Individuals were worried about not having access to essential food, insulin, and other supplies [28]. Odeh et al. (2020) stated that children with diabetes in Jordan had difficulty in accessing insulin and glucose measurement equipment [29]. Pal et al. (2020) found that 17% of individuals with diabetes had difficulty in obtaining the prescribed insulin during lockdowns, most of the them stocked insulin cartridges before lockdowns, 34% decreased the frequency of blood glucose measurement due to problems in obtaining measurement strips after lockdowns, and that 72% stated that they recorded the measurement results less frequently than before [30]. In the present study, 80% of the participants were concerned that they would not be able to visit their physicians for routine follow-up.

In times of acute stress, cortisol release increases, and increased cortisol during long-term stress, in turn, increases the feeling of hunger. Prolonged stress causes tension in the body, triggering snacking and overeating [31]. Especially in this period, healthy nutrition has become more important to keep the immune system strong. However, the consumption of unhealthy and packaged foods increases with the decrease in the availability of food choices. On the other hand, it is possible to continue a healthy diet even with little or limited access [32]. Since grocery shopping is not easy during this period, long-lasting vegetables and fruit should be bought. For example, vegetables, such as carrots, beets, celery, cucumbers, cabbage, broccoli, and zucchini, and fruits, such as avocados, bananas, pears, lemons, and oranges, and frozen vegetables and fruits, when stored under the right conditions, have similar or even more antioxidant and nutrient content than fresh ones. In our study, nearly half of the participants stated that they could not do physical exercise and could not find a solution for effective exercise in home conditions. In a review including a prospective observational cohort study before the COVID-19 pandemic, it was reported that the risk of diabetes increased by 42% with physical inactivity [33]. It is known that the inability to exercise increases negative emotions, such as anger, sadness, and disappointment, and triggers depression [34]. The preventive and therapeutic effects of physical activity on noncommunicable diseases such as diabetes and obesity and quality of life have been scientifically proven. At the same time, being inactive at home for a long time causes the development or progression of chronic diseases and a decrease in muscle mass. For this reason, to continue to benefit from the positive effects of exercise, it is necessary to organize exercise programs that can be done in the home environment and, if possible, to raise and guide awareness in society with media tools [35].

In our study, more than half of the participants stated that they stopped communicating with their social environment. To slow down the spread of the COVID-19 pandemic, first the Chinese Government officials and then the World Health Organization made some statements on this issue, and countries all around the world started taking necessary measures accordingly. The imposition of lockdowns for individuals who were aged 65 and over especially people with chronic diseases such as increased diabetes may go through this disease in a more severe clinical picture, caused the individuals who were lonely in their home environment to die as a result of failure to receive medical assistance [36]. It is thought that fear and stress may have increased with the isolation brought by the pandemic. It is thought that this situation may negatively affect mental health in particular. For this reason, it is important to encourage social support, especially among family members. Communicating with friends or family members and having conversations can help alleviate mental pressure.

Uncertainty can be the cause of common anxiety and worries. Therefore, it is important to provide people with enough information. Individuals should be told that isolation is necessary for both their own health and the health of society. Healthcare providers should be aware of how people with diabetes are affected. For this purpose, there should be recommendations on preventive measures and the prevention of possible sequelae in the management of diabetes. Health professionals can present practical suggestions about primary care services through the virtual environment, especially for those at home, considering the many uncertainties emerging with COVID-19 [27].

Conclusion

In this study conducted with participants with Type I diabetes, it is thought that individuals experience negative emotions during the pandemic process, and their health and social lives are negatively affected. The Covid 19 pandemic has brought many challenges for individuals with Type I diabetes. With the prolongation of the pandemic process, many have stayed away from the order they are accustomed to, and it is thought that situations such as the inability to exercise and the decrease in social communication in individuals will have a negative impact on their mental health. In line with these results, it has been revealed that the mental and physical needs of diabetes patients, who constitute a disadvantaged group during the pandemic process, should be met. In such cases, associations, social workers and health professionals should develop different methods for individuals and provide consultancy. Individuals with diabetes are psychologically poor, which negatively affects the management of diabetes during the COVID-19 epidemic. Therefore, it is important to innovate to provide comprehensive care and complete multidisciplinary integrated clinics, including management of the psychological course that patients may face. Such integrated clinics should be able to provide physical and mental health care for patients with diabetes during COVID-19 disease. More studies are needed to elucidate the underlying factors of how COVID-19 and diabetes can ensure mental health and communication among service providers; Bringing this research to vulnerable parts may provide key avenues for specific intervention. Patients experience anxiety due to the inevitable prospect of contracting COVID-19. Such concerns need to be addressed with proactive treatment and therapy strategies. Success rates of this

intended vaccine can be explained along with treatments such as sanitation practices and maintaining physical distance. The impact of stress on the glucose control and stability system can be highlighted. It is recommended to cooperate with the patient to ensure physical activity while maintaining protective norms against COVID-19 and to design an alternative plan according to the plan. It is also recommended to emphasize the importance of social and emotional distance and to encourage communication and communication in cooperation with parents' patients.

Strengths and limitations of the study

This study was conducted only with individuals with type I diabetes who were registered with a private clinic. The results of this research are valid only for the individuals participating in this research. The results of this study cannot be generalized to all Type I Diabetes patients. The fact that this study was not compared with another group of the same sex and same age and that the data were not collected through in-depth interviews can be considered as the weaknesses of this study. The strengths of this study are asking open-ended questions to the participants, shaping the answers by individuals, providing flexibility for the individual, volunteers to participate in the study, orientation of the answers in terms of content, and being impartial.

Conflict interest

The authors have no conflict of interest to declare, and there has been no financial gain from this work that could have influenced its outcome.

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Ethical approval

This study was approved by the Fenerbahce University Academic Research and Publication Ethics Committee (FBU/2020-23).

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