

The use of cognitive behavioral therapy in diabetes: A case study

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Abstract

Diabetes, one of the diseases with global impact on the population's health, that affects human, social and economic plans, has come to affect an increasing percentage of the individuals and is constantly growing. Because of the economic implications within the families, of the health system and of the countries facing the problematic of diabetes, WHO (2010) supports the importance of prevention programs aimed at achieving and maintaining a healthy weight, early diagnosis of diabetes by conducting blood tests, eliminating tobacco and monitoring of blood glucose and risk factors that cause damage to blood vessels. Cognitive Behavioral Therapy (CBT) uses strategies and techniques to determine the patient's awareness and understanding of their diabetes. The case example is presented next and is used to demonstrate how a model of CBT intervention can be effectively applied for a patient diagnosed with diabetes.

Keywords: *Diabetes, type 1 and type 2 diabetes, Cognitive Behavioral Therapy, case study, depression, anxiety.*

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I. INTRODUCTION

In order to better understand the picture of diabetes it is important to know the description that the World Health Organization makes (WHO, 2010), which refers to diabetes as being a chronic disease which occurs in conditions where the pancreas does not produce enough insulin or when the body cannot efficiently use the insulin it produces, the risk of death being two times higher than people without diabetes. It is necessary to underline that among the symptoms that the patient manifests we can list thirst, polyuria, and blurred vision, weight loss (WHO, 2010 Diabetes Association of America, 2010).

The evolution of the disease among the population is worrying. Shaw, Sicree and Zimmet (2010) showed through a meta-analysis that a percentage of 6.4% of the world population was diagnosed with diabetes until 2010 and it will increase to 7.7% by 2030, affecting 439 million adults. The highest increases will be noticeable in developed countries.

Regarding prevention strategies aimed at delaying disease progression and its complications, Venkat-Narayan, Williams, Gregg & Cowie (2010) claim that these represent a challenge for the health system, requiring help in achieving interventions on individual, clinical and social levels.

The classification that WHO (2010) provides, divides diabetes into two major categories, which are represented by the type 1 and type 2 diabetes. Other authors (Shaw, Zimmet, McCarty, & De Courten, 2000; Ladd, Altshuler, 2013; Cohen, 2014) speak about Gestational diabetes and Metabolic Syndrome, and Cohen (2014) adds to this classification Type 1.5 Diabetes or DALA (latent autoimmune diabetes in adults).

Type 1 diabetes, insulin-dependent (also called “juvenile diabetes”) is an autoimmune disease that appears early in life (childhood, adolescence), due to the fact that beta cells attack the pancreas and it no longer produces the insulin it needs. As a result, the person diagnosed with type 1 diabetes requires insulin therapy his entire life in order to survive. This type of diabetes has a prevalence of 5 to 10% of the population, affecting both men and women (Ladd, Altshuler, 2013).

Some authors claim that the name of insulin-dependent type 1 (primary) should be kept only for cases requiring insulin therapy from the beginning (without which the patient can go into ketoacidosis), however for cases where insulin treatment is introduced after a shorter period (weeks / months) or an longer period of oral treatment, the diagnosis is insulin-necessitated (Borundel, 2009; Henriksen, Roder, et al., 2006).

Type 2 diabetes is diagnosed in adulthood (on average at the age of 40), is non-insulin dependent but occurs due to the body's resistance to insulin or the existence of insufficient quantities of insulin in the body (Ladd, Altshuler, 2013). Type 2 diabetes is the most common,

approximately 90% of people with diabetes being diagnosed with this type of diabetes (WHO, 2010).

Heredity plays an important role in the transmission of type 2 diabetes and the symptoms occur many years before the diagnosis is made (Ladd, Altshuler, 2013).

According to the American Diabetes Association (ADA, 2010), patients with this type of diabetes are obese (obesity itself causes insulin resistance), or have a high percentage of fat mostly spread in the abdominal area. Also, this type of diabetes is frequently undiagnosed for many years in a row as hyperglycemia develops gradually, and people tend to ignore the first signs of diabetes, the symptoms not being severe enough (ADA, 2010).

According to Cohen (2014), the following type of diabetes, Gestational diabetes appears during pregnancy, especially in women over 25, being overweight representing a risk factor. This type of diabetes usually starts in the second trimester of pregnancy and is associated with preeclampsia (high blood pressure and excessive protein in the urine after 20 weeks of pregnancy), which can be fatal if not treated immediately. With treatment, gestational diabetes usually disappears after childbirth, although the risk of developing type 2 diabetes increases for both the mother and the child.

It is important to also talk about the Metabolic Syndrome, which is characterized by high levels of glucose in the blood, high blood pressure and high cholesterol. This triple threat is very common; these factors are closely related, leading to the development of diabetes (Cohen, 2014).

The same author talks about another type of diabetes called latent autoimmune diabetes in adults (LADA). This is also called type 1 diabetes with latent onset and occurs in some people as they produce antibodies against its own pancreas. LADA takes years to appear and there are high chances that it will not be diagnosed properly. Diagnosis is made through a specific blood test called C-peptide dose that measures "endogenous" insulin.

This test is crucial in order to distinguish clearly between the type 1 diabetes and type 2, the type 2 having normal or higher levels of C-peptide, while in the type 1 it is non-existent. Also, LADA requires insulin injections and occurs in thin people, even those who are in shape.

The importance of screening is also supported by the American Association for Diabetes (2012) and the Veterans Health Administration (2010), which recommends that screening should be done starting from the age of 45 or sooner in people with factors risk (BMI > 25, family history of diabetes, history of gestational diabetes, hypertension, polycystic ovary syndrome, high cholesterol, cardiovascular disease history, physical inactivity, obesity, etc.)

Inzucchi (2012) claims that screening programs that aim to identify patients with pre-diabetes and diabetes to allow interventions early in time to reduce the possibility of future complications. On the other hand, the International Diabetes Federation (IDF, 2012), claims that although it would seem logical that the detection and treatment to be carried out at an early stage

as it would lead to minimizing complications, there is no concrete data that it would have any benefits to the individuals. However, screening programs are implemented in many countries and are recommended by many organizations in the world (IDF, 2012).

The mentioned involvement of the patient in monitoring and the treatment of the disease can result in avoid long-term complications, dysfunction or failure of certain organs, especially kidneys, heart, blood vessels, and eyes. However, some patients are not compliant to the treatment, and complications appear very soon. Among the most frequently mentioned complications that can be is retinopathy with loss of vision, diabetic nephropathy, which can lead to kidney failure, sexual dysfunction and cardiovascular problems, amputations, gastrointestinal issues (ADA, 2010; Shaw, et al., 2000).

The American Association of Diabetes (2015) claims that in the case of people with diabetes there is a higher risk of developing heart failure, depression, anxiety and arthritis compared with people of the same age who do not have diabetes. The existences of these comorbidities hinder the disease management (Allen, Frier, & Strachan, 2004; Anderson, et al., 2001; Attari et al., 2006; Ciechanowski et al., 2000).

Cognitive Behavioral Therapy (CBT) uses strategies and techniques (Beck, 2005) to determine the patient's awareness and understanding of their diabetes (Britneff & Winkley, 2013; Ellis et al., 2004). One of the aims of this type of intervention is the management of diabetes from the point of the person and the lifestyle changes required.

II. CASE STUDY

A.L., male, age 55, was diagnosed 5 years ago with insulin-dependent diabetes. There is no family history of the condition. The evolution of the disease has been episodic and associated with a poor management of the disease, stretching over a period of 5 years. The patient is diagnosed with insulin-necessitated diabetes with ½ amputation of the left thigh.

The patient underwent a meniscus operation on his left leg at the age of 15 years and 4 other operations over a period of 3 years (at age 34), the same leg that had to be amputated.

The feeling of tiredness and “boredom” as the patient calls it, were facilitating factors in the disease. The trigger that led to the amputation of the left thigh consists in the interruption of the drug treatment for 2 years.

Currently, due to financial reasons and in order to receive the necessary care, A.L. has decided together with his family to be admitted to a nursing home. Here, A.L. moves using a wheelchair. The patient has been at the nursing home for 9 months manifesting depressive symptoms due to the evolution and associated complications (leg amputation) and the sense of abandonment by the family.

The patient manifests feelings of guilt following the decision to discontinue the treatment. This guilt is accompanied by feelings of worthlessness because he cannot do anything to help his family and has no income. Currently, he requires his wife's help to pay fees at the nursing home and to complete his pension file. Also, these feelings of worthlessness are accentuated by the lack a prosthetic that would help him move and be independent.

There is no history of psychotherapeutic treatment.

Personal history

A.L. has been married for 32 years and has a 30 year old boy. He is an only child, but currently he has only the wife and the son, as both his parents have died more than 10 years ago. His mother suffered from cancer and died in 1989, and his father suffered a mild heart attack and later an infarct that set him to the bed, immobilized. After this event, A. L. took the responsibility to care for paralyzed father, bringing him to live in the apartment where he was staying with his wife and small child. After 3 years, his father died (1994), the patient showing feelings of regret that he was not there for his father in that moment. A.L. also lost both his wife's parents, which he had a very good relationship. The mother-in-law died of leukemia, and his father-in-law suffered a heart attack which was fatal, and up until the age of 43, the patient had lost all his close relatives.

A.L. claims to have had a close relationship with his mother, who was there for him at any time. As far as it concerns the father he would have wished to have spent more time together, to create a different connection, since he worked in the army and spent less time with him. Although he felt him emotionally involved, giving him advice, he considers that he had a more “militarizing” childhood, says A.L.

During adolescence he practiced athletics, even participating in national Olympics and not only, for a period of 7 years. At age 15 he had an accident while running and underwent meniscus surgery. At the time he was offered the opportunity to leave the country in order to build a future. This would have meant giving up the sport. However, he failed to do so because of the insurances of his father and the thought that he would have destroyed his father's career. A.L. regrets the fact that he remained in the country, thinking about the life he would have had if it had taken the step. He also practiced martial arts at the age of 32, suffering four surgeries and having a painful experience during recovery.

A.L. has been practicing taxi driving during the past 7 years, although he had political studies, which he followed in the communist era at the Ștefan Gheorghiu Academy, he worked in real estate and also had his own business, a selling store.

Following a decision that he took to lay the foundations to that business he mortgaged the apartment, which he then lost, having to rent a home. In the last years all three family members

lived in a one room apartment, although in the last 3 years A.L.'s son ceased to speak to him for unknown reasons.

In 2010, A.L. was diagnosed with diabetes, being on the verge of a diabetic coma. He attended insulin therapy from 6 in 6 hours, but after 3 years of treatment he discontinued it. He continued as so for 2 years, during which time his condition worsened. He suffered a gangrene that brought him to the threshold of amputating the left thigh. After this event, due to the consequences suffered, the conflict situation in the family and financial problems, A.L. decided together with his wife to be admitted to a nursing home until he will get an prosthesis and receive the his retirement decision.

The CBT intervention and objectives with the client concerns: Disease management; reducing the depressive state; improving family relationships.

Secondary objectives refer to: Acceptance and adaptation to the disease condition; increasing the levels of involvement in the treatment of disease and glycemic control; preventing future complications; relapse prevention; finding free time activities and reducing feelings of worthlessness; changing the self image; developing communication abilities and problem-solving skills; increase the level of assertiveness; Social and professional integration.

Session 1

From the clinical interview the information revealed the type of patient's diagnostic: insulin-necessitated, the time since receiving the diagnosis (5 years), complications arising from the treatment discontinuation, financial and social problems that have derived from them and the reasons why he went into a nursing home.

A.L. related the experience of diagnosis and the events that led to the amputation of the left thigh. These have led to increased family conflicts and coldness in the couple relationship and between the patient and his child.

During the interview, A.L. mentions the death of the family: parents and in-laws and the lack of close friends, as well as information related to the professional path.

Up to this point, we can observe the tension and restlessness of the patient while stating the events. A.L. avoids visual contact during the interview, especially when relating events with a strong emotional charge. The patient experiences feelings of sadness, regret and guilt in relation to the disease and family conflicts, to which are added feelings of worthlessness because he cannot do anything by him from the place where it is.

From the clinical interview emerge also the presence of complications arising from the treatment discontinuation, financial and social problems that have derived from them and the reasons why he went into a nursing home.

Session 2

The session begins with the patient feedback on what happened from the previous week. At this time is revealed an important element linked to the abandonment that A.L. feels. This feeling is brought forward by the story of the disease evolution of one of his roommates, which he sees as is being abandoned by his family.

Given recent events, the first step in overcoming a psychological problem is to learn the patient more about it, and psychoeducation in this phase represent only one part of a complete treatment plan.

Further in this session the ABC technique was used to identify the thoughts of helplessness, feelings of regret and sadness triggered by associating own father-roommate /himself.

After using the ABC technique, A.L. talks about one of the regrets he has in life, which is related to the fact that he didn't leave the country when he had the chance. At that time family members told him that if he would leave this will destroy his father's career, who was a senior officer in the army during communism. After this event, A.L. claims to have had a depressive episode during which he lost interest in school and focused only on sport.

Sessions 3-4

Prior to the beginning of the meeting we can notice a degradation of the emotional state. The patient is found in a secluded place, away from the eyes of colleagues, appears dejected and sad. These things are confirmed by the patient who claims to have had an oppressive status in the past week.

A.L. provides more information about the events of last week. The session begins by covering the death of his roommate, which triggered state of sadness, helplessness and regret at the thought of not being around when his parents died, but now had witnessed the death of a stranger.

The patient complains about the conditions of the institution and that he cannot accommodate there, conditions accentuated by the lack of people with which to discuss and activities to undertake throughout the day. Physical inactivity emphasizes depression and the feeling of uselessness. The patient looks forward to the arrival prosthesis that could help him to move, and for him that would be a step toward departing from that institution.

It may be noted the patient's inability to make plans before obtaining the prosthesis and receive the retirement decision. With a lot of difficulty he manages to make plans for the future, given the importance he gives to external factors and a lot less to the resources available to proceed.

At this point in the therapy is it attempted a behavioral approach, the patient failing to find activities that could be carried out in that institution. Unfavorable conditions such as lack of space in which to spend time, lack of activities to undertake and the patient's acute need for peace emphasizes the level of physical inactivity.

The patient encounters difficulties in responding to the question “How would your life be if you had a magic wand, and the problems would disappear?”. For A.L. it is difficult to imagine the future. He thinks he would have had a different life, a different preparation, would have left the country, might have even been a coach..., aspects that highlight his regrets.

When the patient was asked by the therapist: “How long do you think it will take to solve these problems?”, the patient manages to place himself in the future, setting a deadline in June, on his birthday, until he will depart from the institution and will have a prosthetic, and also the retirement decision.

After completing these imaginative exercises the conflict issues between him and his son are addressed. The empty chair technique was used, the patient encounters difficulties in sending a message to his son, but tends to manifest towards the therapist, which is why he is then asked to write a letter to his son to say all that he has failed to transmit during those years.

Session 5 – 7

The session starts by relating the events of the past week. Anxious-depressive moods experienced by A.L. are now being exacerbated by the need to sign the divorce papers. His wife will not be able to bear the expenses of A.L. due to the fact that she is going to help their boy in paying his loans for his home. Therefore, A.L. will remain in the care of the state. This event creates feelings of confusion because the patient no longer knows his role in the family. He is aware that a simple piece of paper will not separate him from his wife, but it is unclear what will happen to him.

At that moment an imaginative exercise was attempted. The patient was asked to think about an unpleasant event, which destabilized him, to identify the people involved, the factors that led to the triggering event and how that event led to changes in his life. When all those factors were identified, the patient was asked to think about the feelings he lived, what thoughts he had and what modalities did he find at that time to handle the situation. He was also asked (Socratic Dialogue) what resources he used and how much time were needed to improve the situation?

The patient reported that he managed to identify the necessary resources but in terms of the current situation, it is unclear how it will resolve this situation, given the fact that there are other external factors involved. At this time, the patient mentions suicidal thoughts, about the fact that they exist from the moment of amputation, but he did nothing in this regard. From the

information presented we have seen that the patient will not act in this regard as long as he will wait for the prosthesis and the decision to retire.

In a further session at that time the patient is asked the question, “What would you tell a person who would be in your place?”, A.L. answers that would tell that person *to fight if he had someone worth fighting for*. He is then asked “Does he have someone worth fighting for?”, but he responds “sometime not really”.

Attempting to switch the thoughts towards identifying activities that would make him feel better and could achieve, A.L. manages to identify drawing, reading books and activities that he will try to achieve in week to come.

The patient feels that through the meetings he obtained a state of release and emotional discharge, mental comfort, managed to identify new prospects and reviewed past events.

III. CONCLUSIONS

The therapy of this patient diagnosed with diabetes and with ½ amputation of the left thigh was based on the use of cognitive-behavioral techniques. The objectives were relieving the anxious-depressive symptoms, behavioral activation, resolving family conflicts, accepting the condition of the disease, facilitating the process of adaptation to the disease and socio-professional integration. Throughout the seven meetings were addressed topics such as disease management, institutionalization in a nursing home, family conflicts and patient’s resources to cope with stressors.

Following the techniques used and the abilities developed by the patient thought the meetings we could observe an anxious-depressive symptom relief, a change in the patient's negative patterns of thought about the self and an increase in behavioral activation, especially in the context of new changes to life.

At the end of therapy, the patient summarized the efficiency of meetings in the ventilation of emotions, reevaluation of past events and acquiring new perspectives.

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