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DIABETES MELITUS CLIENTS' CONCEPTIONS ABOUT THE TREATMENT

CONCEPÇÕES DE CLIENTES COM DIABETES MELLITUS ACERCA DO TRATAMENTO

CONCEPCIONES DE LOS CLIENTES CON DIABETES MELLITUS SOBRE EL TRATAMIENTO

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ABSTRACT

Objective: to describe the knowledge that customers with diabetes mellitus have about the disease's treatment. ***Method:*** descriptive and exploratory study, with qualitative approach, conducted with 11 clients registered at a health center. The semi-structured interview was used for the data production. The information was treated according to the content analysis technique, thematic modality, yielding five empirical categories. ***Results:*** the participants have knowledge about the treatment of diabetes. However, it was noticeable that, sometimes, this knowledge is superficial and little applicable in their routine. ***Conclusion:*** there is need for greater investment in health education, as public policy, which will help to overcome knowledge deficiencies related to the treatment of diabetes, preventing the early onset of complications with consequent reduction in the number of hospitalizations and cost to the public coffers.

Descriptors: Diabetes Mellitus; Health Education; Nursing; Treatment.

RESUMO

***Objetivo*:** descrever o conhecimento que clientes com diabetes mellitus possuem sobre o tratamento da doença. ***Método*:** estudo descritivo e exploratório, de abordagem qualitativa, realizado com 11 clientes cadastrados em um centro de saúde. Utilizou-se a entrevista semiestruturada para a produção dos dados. As Informações foram tratadas de acordo com a Técnica de análise de conteúdo, modalidade temática, originando cinco categorias empíricas. ***Resultados*:** identificou-se que os participantes possuem conhecimento sobre o tratamento do diabetes. Contudo, foi perceptível que, por vezes, este conhecimento é superficial e de pouca aplicabilidade no seu cotidiano. ***Conclusão*:** constatou-se necessidade de um maior investimento na educação em saúde, enquanto política pública, que contribuirá para a superação de deficiências de conhecimento relacionadas ao tratamento do diabetes, evitando o surgimento precoce de complicações com consequente redução do número de internações hospitalares e de custos para os cofres públicos. ***Descritores*:** Diabetes Mellitus; Educação em Saúde; Enfermagem; Tratamento.

RESUMEN

Objetivo: describir el conocimiento que los clientes con diabetes mellitus tienen en el tratamiento de la enfermedad. ***Métodos:*** estudio descriptivo y exploratorio, de enfoque cualitativo, realizado con 11 clientes registrados en un centro de salud. Se utilizó la entrevista semi-estructurada para la producción de los datos. La información fue tratada según la técnica de análisis de contenido, modalidad temática, produciendo cinco categorías empíricas. ***Resultados:*** se encontró que los participantes tengan conocimientos sobre el tratamiento de la diabetes. Sin embargo, se notaba que a veces este conocimiento es superficial y de poca aplicabilidad en su vida diaria. ***Conclusión:*** se observó la necesidad de una mayor inversión en educación para la salud como una política pública, lo que ayuda a superar las deficiencias de conocimiento relacionadas con el tratamiento de la diabetes, la prevención de la aparición temprana de complicaciones con la consiguiente reducción en el número de hospitalizaciones y costes a las arcas públicas. ***Descriptores*:** Diabetes Mellitus; Educación en Salud; Enfermería; Tratamiento.

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INTRODUCTION

Diabetes mellitus (DM) is a disease of chronic character that constitutes a public health problem, and is one of the leading causes of morbidity and mortality in Brazil, resulting in disabilities or limitations in professional performance, as well as in a high expenditure of public money invested in its treatment and its complications.[1]

The number of people with the disease has increased significantly as a result of population growth and aging, increased survival, and growing urbanization, which contributed to the maintenance of an unhealthy lifestyle, with bad eating habits and decreased physical activity, that lead to obesity.[1]

There are more than 371 million people with DM across worldwide, representing 8.3% of the world's population, 50% of which have not yet been diagnosed. Estimates indicate that this number will increase, in 2030, to 552 million. In addition, it should be noticed that, in 2012, 4.8 million people died as a result of the disease and half of them were less than 60 years[2], being, therefore, in their productive phase. If not properly treated, the DM can lead to complications classified as acute and chronic. The first ones happen in short term, due to acute imbalances in blood sugar levels, and the latest ones, in long term, due to prolonged hyperglycemia. Chronic complications are more common due to the population aging, and can affect all body systems, cause disability and even lead to death.[3]

Regarding the treatment, it is emphasized that the DM requires maintaining proper glycaemia levels, making it necessary for the client to perform a set of actions that result in a healthy lifestyle, including balanced diet and physical activity, allied, or not, to drug therapy, as well as monitoring of blood glycaemia.[4]

This shows the importance of health education concerning the individual's awareness regarding the prevention and control of complications, in order to understand the need for change in lifestyle, and develop skills for selfcare[5], which should be also extended to family members and/or caregivers. An effective education goes beyond the transmission of information, resulting in changes and/or acquisition of behaviors, and should incorporate the needs, goals and the individual's life experiences.[1]

It is important that the client with DM understands all relevant aspects of the disease in order to become aware of the importance of acceding the treatment and prevention of complications[5], which certainly will bring beneficial influences for their prognosis and quality of life. This study may contribute to the improvement of the provided care when giving the health professionals opportunities to approach the limitations of clients with diabetes, especially regarding the treatment of the disease. In this sense, the objective was to:

- Describe the knowledge that clients with diabetes mellitus have about the disease's treatment.

METHOD

Descriptive and exploratory study, with qualitative approach, originated from the project << Conceptions of clients with diabetes about the treatment and prevention of complications >>. It was attended by 11 registered users in diabetes service of a basic health unit, who underwent a semi-structured interview, with the support of a voice recorder, while waiting for the service, from March to May 2014.

The legal provisions of the National Health Council Resolution 466/2012 have been met, which deals with the Guidelines and Regulatory Standards for Researches involving human beings. Therefore, the project was approved by the Research Ethics Committee of the State University of Southwest Bahia (CEP/UESB) under the number CAAE 21606413.1.0000.0055 and opinion number 412,060. It is noteworthy that the participants were previously informed about the theme, objectives, rationale, risks and benefits of the research, and interviewed only after signing the consent form.

The information was treated according to the content analysis technique, thematic modality, following the steps of pre-analysis, implementation and systematization of ideas; material exploration, with coding and decomposition according to the previously formulated rules; and treatment of the results, with inferences and interpretation of data.[6] The *corpus* consisted of 11 interviews after the full transcript and floating reading. Later,

there was a deeper reading, separating the meaning units, which were coded and grouped semantically, which allowed the identification of five empirical categories.

RESULTS AND DISCUSSION

♦ **Category 1** - Correct use of hypoglycemic drugs

It is known that, due to the occurrence of the autoimmune process that causes the partial or total destruction of pancreatic beta cells and, consequently, the progressive inability to produce insulin[1], drug treatment of type 1 diabetes requires, in addition to healthy life habits measures, the use of the exogenous hormone, insulin, as soon as the diagnosis is established.[7]

In type 2 diabetes, which is insulin-resistant and/or there is impairment of its secretion[1], the regular physical activity is initially adopted, along with weight reduction and dietary reeducation. If these measures do not show resoluteness, a drug treatment is implemented through the use of oral hypoglycemic drugs, although there may be need for combining with exogenous insulin when the initially implemented measures do not work.[7]

Drug prescription for the treatment of DM should be rational and appropriate to user's needs, effectively choosing the hypoglycemic drug, considering that increasing the dose and drug diversity may increase the incidence of adverse reactions, complicating treatment adherence, lacking, thus, a continuous monitoring of the response to the use of these medications.[8]

In this perspective, the participants demonstrated that, through the analysis units, the hypoglycemic drugs constitute one of the DM treatment alternatives, and it is important to properly fulfill the prescription and medical recommendations for achieving glycemic control, no different from the results found in another study, which showed the correct use of hypoglycemic drugs as a diabetes control measure.[9]

> *[...]Correctly taking the medicine (Ent. 1)[...]/[...] always taking the medicine (Ent. 2)[...]/[...] correctly taking the medicine, on time, and not lacking medicine (Ent. 3)[...]/[...] I take medicine, I've already used insulin (Ent. 5)[...]/[...]you have to take it correctly ([...]) taking the right medication (Ent. 6)[...]/[...] it's to take the right medicine (Ent. 7)[...]/[...] Taking the medications correctly (Ent. 8)[...]/[...] I use it, despite the medications [...]sometimes I find it at the hospital, sometimes, I don't (Ent. 11).*

It is observed that the participants are right, since knowing the hypoglycemic drug to be used, as well as the dose and the prearranged times, is crucial for the effectiveness of drug treatment and prevention of early complications. It is also necessary to take into account the schedule of meals and physical activity, when using the medications. Therefore, during the consultations, the health professional should check the understanding of users about the provided information[10], creating a favorable environment so that they feel free "to ask, question and tell their difficulties".[11]

Some participants, despite knowing the importance of properly using the medication, sometimes do not take it as they do not find it available at the health unit, showing they exclusively depend on the free acquisition and that, when it is not available, stop using it until they have free access again[12], which should never happen, being the government responsible for avoiding this situation.

Although extremely important prescribing the correct drug therapy for glycemic control and prevention of acute and chronic complications of diabetes, it is essential to implement educational activities that result in the modification of the user's lifestyle, such as the adoption of a healthy diet and physical activity[4], being the participants aware of it, as seen in the categories 2 and 3, respectively.

♦ **Category 2** – Adoption of a proper diet

For ensuring a healthy diet for the client with DM, a balanced diet is recommended, considering the user's demands, establishing a daily amount of intake of carbohydrates, proteins and lipids, giving preference to healthy and natural food, and reducing the consumption of manufactured and processed food, saturated fatty acids and in the trans form, as well as sodium[13].

It is also ideal to consume a greater amount of unprocessed spices, fresh herbs and plant foods. The use of alcohol must be limited, for its hypoglycemic potential, high energy and interference with the metabolism of macronutrients, raising triglycerides. The meals should be fractionated and adjusted to the physical activity and used medications, preventing

excessive food intake and/or prolonged fasting.[1]

Currently, there is evidence that the individual with DM do not need to have a diet guided by the restriction of foods, but balanced within prescribed limits, and individually adjusted. Based on scientific evidence, the nutritional recommendations should take into account the cultural and economic characteristics, respecting individual preferences and including the user in decisions. It is important that the diet plan considers that the lifestyle can change, and allow the user to keep an active and integrated life in society.[13]

It is observed, through the analytical units that characterize this category, that the participants know that adopting a proper diet is essential to the success of the DM treatment. However, it seems they lack the knowledge of how this diet should be performed.

> *[...]Not eating the things you can't (Ent. 1)[...]/[...]we can't eat everything (Ent. 2)[...]/[...]it's not ingesting sugar, you have to use sweetener [...]I don't eat cake, I don't drink coffee with sugar everyday (Ent. 3)[...]/[...]not eating and drinking things with sugar [...]following the right diet (Ent. 4)[...]/[...]you have to go on a diet [...]you can't each mush salt [...]not eating too much fat (Ent. 5)[...]/[...]you can't eat everything you want (Ent. 6)[...]/[...]not eating everything, not eating sweets, or fatty food (Ent. 7)[...]/[...]you have to have that rigorous diet [...] avoiding sweets (Ent. 9)[...]/[...]I follow what the nutritionist told me (Ent. 10)[...]/[...]I have no conditions, sometimes I have no vegetables at home. What should I do instead of eating bread, rice, bean and corn flour (Ent. 11).*

The participants recognize the need to avoid eating certain types of foods that raise blood glucose and lipid levels, but have some misconceptions demonstrating need for better education, for example, when referring to foods with sweet taste (sugar and sweets) as being solely responsible for the changes in blood sugar levels. There are foods that contain sugar and have no high glycemic value when compared to others that do not, making it important to know that all carbohydrates are converted into glucose by the body and, therefore, must be less consumed.[13]

It is noticed that the participants' understanding about the nutritional therapy is linked to restrictive concepts, as some units of analysis seem to express that they bind the healthy diet to a restriction idea, allowing inferring that the recommendations received may not have been made so appropriate, and, perhaps, passed by the health professional prohibitively, without a joint decision to consider the individual characteristics, living conditions, beliefs and preferences. It is noteworthy that such conduct may cause poor adherence to dietary treatment, considering that forbidden foods can be among those most often consumed by people with DM.[14]

The individual with DM is often aware of the need for healthy eating, but do not follow it properly, considering the influence of socioeconomic, cultural, psychological, economic and educational aspects. Among these, only three appear as a result of a study that discusses food practice in diabetes as challenges for surveillance in health[15], justifying the resistance or difficulty by the customer to adopt changes in their dietary habits, and only the economic factor came among the units of analysis that characterize this category.

- **Category 3** – Physical activities

Regular physical activity improves glycemic control by increasing the glucose uptake by the muscular tissue[16], contributing to weight loss and preventing the onset of complications. It should be initiated gradually, noting the existence of complications and limitations, as well as the dosage of medication, adjusting it when necessary. It is also important to guide the individual about the warning signs of hypoglycaemia, recommending him/her to have always some source of glucose, in case of need.[4]

It is observed, in the following arranged units of analysis, that physical activity has been mentioned as part of the DM treatment, demonstrating that participants know its importance, although it has become apparent that some of them are not implementing this practice.

> *[...]It's practicing exercise (Ent. 2)[...]/[...]doing gymnastics [...] going for a walk(Ent. 4)[...]/[...]it's going for a walk for 20 minutes (Ent. 5)[...]/[...]I was supposed to walk, but I can't because my knees has problems [...] I've already had heart attack (Ent. 6)[...]/[...] doing some physical activity (Ent. 7)[...]/[...]it's walking, it's the exercise we're even doing (Ent. 8)[...]/[...]going for a walk, physical exercise (Ent. 9)[...]/[...]going for a walk, I'm not doing it because I can't stand the*

pain (Ent. 10)[...]/[...] I only walk, and these days I'm not doing it (Ent. 11).

Among the practices of physical activity, it is observed that the majority mentioned walking, a result similar to a study that evaluated the knowledge gained by people with DM treated at an interdisciplinary ambulatory program of a university hospital.[17] The walk is considered a physical activity with light and low impact when slow or moderate[4]. It can be held outdoors at any time, and does not depend on financial resources for its implementation. If correctly practiced and followed-up by health professionals, can bring satisfactory results in the treatment, contributing greatly to the reduction of blood glucose.[18]

It was possible to extract from the units of analysis that some participants, although knowing the importance of the physical activity for the effectiveness of DM treatment, do not adopt this measure, either because they are have signs and symptoms of complications of the disease, causing physical limitations, or of the need for dose adjustment of the hypoglycemic drug(s) in use, or even because they are not, in fact, aware of the beneficial effects of this form of treatment.

Thus, it is important that the health professional investigates the factors that can lead an individual with DM not to practice physical activity as part of treatment, in order to contribute to the early perception of its importance, as well as to help him/her achieve the minimum necessary for its implementation.

♦ **Category 4 -** Use of phytotherapy

Phytotherapy refers to the use of medicines produced with active ingredients derived from plants, from the popular knowledge and use.[19] Its use in the treatment of diseases occurs from ancient times when, through empirical knowledge, the knowledge of the healing power of certain plants was passed on from generation to generation.[20]

With the establishment of medicine, this knowledge was devalued by health professionals and, today, science and health policy have sought to re-establish this practice by encouraging the use of medicinal plants by the users of the health services.[20] In order to ensure the population safe access and rational use of herbal medicines, the Ministry of Health of Brazil established the decree number 5813, of June 22, 2006, the National Policy of Medicinal Plants and Phytotherapy.[19]

According to the units of analysis that originated this category, the use of homemade teas using medicinal plants has been mentioned by some participants as part of the DM treatment.

[...]Driking homemade tea (Ent. 4)[...]/[...] people teach how to make tea, I make it (Ent. 5)[...]/[...] the tea helps because I piddle well and it eliminates more and more (Ent. 6)[...]/[...]I drink homemade tea [...] I drink bitter, for it's very good (Ent. 7)[...]/[...]going on a diet of certain tea (Ent. 8)[...]/[...]I also use teas [...]chamomile, lemongrass [...](Ent. 10).

One of these analysis units indicates that the benefit of using tea is the stimulation of diuresis, eliminating, therefore, what is harmful to the body. It is noteworthy that, in a study about this topic, participants, based on traditional knowledge of common sense, also mentioned as benefits of homemade teas, stimulation of kidney function which, by urination, eliminates harmful wastes or in excess in blood, such as sugar, and believe that, by using the teas of boldo from Chile and gorse, can "fight the sugar" because of the bitter taste, "refine the blood" and "fix the liver," believed to be overloaded and impaired by the consumed drugs.[21]

Other scientific studies establish the existence of medicinal plants that exert hypoglycemic actions confirming their use as anti-diabetic by participants. Among those scientifically proven as hypoglycemic, stood out *Bauhinia* spp. (Cow's paw), *Syzygium cumini* (jambolan)[20,22], and Cissus *sicyoides* L. (insulin)[23]. However, it is important to notice that some plants used in the form of homemade teas, especially when used concomitantly with prescribed medications, may have substances capable of exerting side effects, such as hypoglycemia[24], the reason why they should be used with caution.

Regarding chamomile, mentioned by one of the participants, the literature indicates that it contains substances with antioxidant effects scientifically confirmed and acts against oxidative damage that hyperglycemia can cause to the body, so that its use is, in fact, beneficial in the treatment of the DM.[25] Thus, it is necessary to scientifically confirm the truthfulness of the therapeutic action of medicinal plants before they are used by the users, which

will enable health professionals to safely and effectively apply these guidelines[22], preventing damages in the health of the individual, for its misuse.[20]

Category 5 - Adoption of preventive attitudes

In this category, some units of analysis are grouped regarding preventive measures for the occurrence of DM complications or, when already present, to avoid causing further damage to the body.

> *[...]Always going to the doctor (Ent. 2)[...]/[...] do the views exams [...] Always undergo the exams because of the kidneys (Ent. 6)[...]/[...]I do the exams [...] I pick up my vaccine cardto see how it is (Ent. 8)[...]/[...]to take of my feet not to harm them [...]I'm not going in manicure, I clean my nails, I'm not going to not take cuticle, not to have injury (Ent. 10)[...]/[...]do the exams, but we never find it [...]I was passing by the doctor last month, they said they would not schedule (Ent. 11).*

It is known that DM may cause renal and visual complications which are related to microvascular impairment that affects the small blood vessels, characterized by the thickening of the capillary basement membrane caused by hyperglycemia. Changes in small retinal vessels cause diabetic retinopathy, which can lead to total loss of vision, whereas, in the kidneys, a lesion occurs in the filtration mechanism, causing leakage of blood proteins in the urine with consequent increased pressure in the blood vessels.[3] Thus, it is clear that the understanding presented by the participants about the necessity of performing diagnostic tests related to renal function and vision is correct, since, through them, these complications can be early identified and treated.

It is noteworthy that the diagnostic tests are important, both in the initial care, as the continuous monitoring of the clients with DM, and must be carried out considering the high cardiovascular risk, metabolic control, care goals and existing complications. The frequency will depend on the individual monitoring. According to the Ministry of Health of Brazil, examinations of fasting blood glucose and glycated hemoglobin (HbA1c) should be performed twice a year when the user is within the established glycemic goal and, when higher, in every three months. Other tests may be requested each year, considering the individual needs and local protocols. Regarding renal and visual complications, they are identified, respectively, by the analysis of micro albuminuria and the fundoscopy under pupillary dilation.[4]

The units of analysis also indicate the importance of carrying out the medical examination as a preventive measure to DM complications, that is, as a strategy of treatment of this disease. It is known that the consultation of initial assessment should be carried out by the doctor, who, after the diagnosis, makes the prescription of drugs according to customer needs. However, it is recommended the continuous monitoring, not only by the medical professional, but "by a multidisciplinary team to assess the evolution of the disease and adherence to the guidelines, according to risk stratification".[4:60]

Another unit of analysis also pointed to the importance of maintaining the vaccination updated, proceeding conduct considering that individuals with diabetes have a higher risk of serious pneumococcal infection and occurrence of complications from influenza, which is why it is recommended that such vaccines are always updated.[1]

Taking care of the feet and nails, as well as preventive care of various injuries, was also identified by participants as a DM treatment strategy. It is known that chronic complications caused by the disease, specifically neuropathy and peripheral vascular disease (PVD), both developed from disorders caused in the body by hyperglycemia, cause injury to members that, in the presence of infection can result in amputation.[3] As the neuropathy affects the nerves, it causes loss of pain sensitivity, making the individual vulnerable to trauma and PVD and, by reduced blood flow, it leads to poor circulation of lower members.[26]

The history and examination of the feet are key behaviors that should be adopted in the monitoring of users with DM. Therefore, it is important to transmit the guidelines emphasizing on the importance of regular inspection and hydration of the feet, proper cutting of nails, use of appropriate footwear, and monitoring of risk groups in the early diagnosis perspective, adequate treatment and prevention of ulcers and amputations.[27]

CONCLUSION

This study evidenced the participants know the DM treatment when stating as procedures the correct use of hypoglycemic drugs, the adoption of a proper diet, the daily physical activity, the use of phytotherapy, and the adoption of preventive habits. Nevertheless, it was observed, sometimes, that the knowledge was superficial, as well as the little applicability in their routine.

These results direct to the need for greater investment in health education, as public policy, and the importance of an effective educational work to be developed by health professionals working in primary care, in order to help users to overcome knowledge deficiencies related to the treatment of diabetes, preventing the early onset of complications, with consequent reduction in the number of hospitalizations and costs for the public safes.

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